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ILIUM AURATUM.—Good, plump, sound bulbs, 47, 67, 97, 122, 183, and 243, per dozen extra strong, 30s, and 422, per dozen. All other good Lilles at equally low prices.

Mr. WILLIAM BULL'S Establishment for New and Rare Plants, 536, King's Read, Chelsea, London, S.W.

CHARLES SHARPE AND CO.'S Whole-sale LIST is now ready, and will be forwarded on appli-sicatord.

WAITE, NASH, HUGGINS AND CO, bave Posted their (eneral CATALOGUE to all their capplication. If not received another Copy will be sent on application.

79, Southwark Street, London, S.E. To Market Gardeners, Gentlemen's Gardeners, and OTHERS ABOUT to COMMENCE BUSINESS.
JAMES FARRAR AND CO. have to announce the Publication of their TRADE SEED CATALOGUE, which will be forwarded, post, free, on application.
Seed Warehouse, 36, Primrose St., Bishopsgate, London, E.C.

FLOWERING SHRUBS,—Lilac, Mock Cytism, H. drangea, Hypericum, Mereem, Ribes, Spiras, Rhus, Vhunnum, &c., &s. per dozen. Descriptive LIST free RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

ARCH.—Fine, healthy, twice transplanted Plants, from native seed :18 to 24 inches at 15s. per 1000. 2 to 3 feet at 20s per 1000. MORRISON BROTHERS, Aberdeen.

Special Culture of FRUIT TREES and ROSES.—A large and select stock is now offered for sale. The Illustrated and Descriptive CATALOGUE of Fruits post-free for threepence, the Dec prive CATALOGUE of Russes post-free. THOMAS RIVERS AND SON, The Nutrenes, Sawbridgeworth, Herit.

PEACH and NECTARINE TREES.-A Apply to Mr. COOPER, F.R.H.S., Calcot Gardens, Reading, Berks.

To the Trade.

SEED POTATOS.

H. AND F. SHARPE are prepared to make special offers of their fine selected stocks of SEED POTATOS, grown under their on superintendence expressly for seed purposes. Their Life of the broad very reasonable. Seed Growing Establishment, Wisbeech.

FIRMS IN THE NUTSETY AND SEED Trade wishing to publish their announcements in Ireland, will find THE IRISH FARM, FOREST, and GARDEN, an excellent medium. Specimen Copies, Scale of Charges, &c., on application to Mr. THOS. MOORE, Sole Proprietor, 39, Lower Ormood Query, Dublish. Firms in the Nursery and Seed Trade

SALES BY AUCTION.

MONTH FLOWER ROOTS and MEXICAN BULES.

MESSRS. PROTHEROE AND MORRIS.

WILL BY AUCTION, at their Certical Sale Rooms, 67 and 68, Cheapside, E.C., on MONDAY NEXT, at half-east 12 of Licks precisely, about 200 to a following from the Double and Single HYACINTHS, TULIPS, and CROCUS; a large consignment of BULBS from Mexico, consisting of thousands of White and Scarlet Amarylis, Terrestrial Orchids; an importation of PANCRATURED HUMS from New Herow, HYACINTHUS CAMDICANS, choice Single DAHLIAS, and an assortment of hard English grown LILLES and On view morning of Sale. Catalogues at the Bulles.

On view morning of Sale. Catalogues at the Rooms, and 8, New Broad Street, E.C.

Thursday Next.

Thursday Next.

Soc. LILIUM AURATUM.

MESSRS. PROTHEROE AND MORRIS

will SELL by AUCTION, at their Central Sale Rooms,

67 and 68, Cheapside, E.C., on THURSDAY NEXT, January

10, at half-past 12 o'Clock precisely, an importation of 6000 fine

assortment of hardy English-grown LILIES and BULES, in
cluding extra large roots of many varieties, GLABIOLI, LIV

of the YALLEY, Simple PRIOGALUM GRACILIS,

On view morning of Sale. Catalogues had at the Rooms,

and 8, New B-oad Street, E.C.

And 8, New B-oad Street, E.C.

Friday Next.

CATTLEVA GASKELLIANA.

CYPRIPEDIUM ROBLENI.

VANDA BOXALLI.

MESSRS. PROTHEROE AND MORRIS

Share received instructions from Mr. F. Sander to SELL

by AUCTION, at their Central Sale Rooms, 69 and 68, Cheapside, E.C., on FEIDAY NEXT, January 11, at half-past

of Clock precisely, a socially grand importation of CYPRIPE
BUM ROBLENI, Robh. I. to belongs to the lavingatum

and the second of the second of the service of the s

Mitchell and Sons' Celebrated Nurseries, Piltdown, SUSSEX.

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The Nurseries are situate sour 1/2 miles from Ucfreid Railway

Station, on the Tunbridge Wells and Lewes Line, London,

Brighton, and South Coast.

TO NORLEWEN, GENTLEMEN, NURSERVENIN, AND OTHERS.

HIGHLY IMPORTANT EXTENSIVE SALE of VALU
ABLE NURSERY STOCK, SPECIMEN EVER
GREENS, Consisting of Retinesporas, Piceas, Siece,

Cupressus, Araucarias, &c., Flowering Shrubs, Fruit Trees,

Forest Trees, Standard and Dwarf Roses, and a large

AUCTION, on the Premises, at the Nurseries as above, by

MESSES, SOUTHERDEN, MORRIS,

AND BURTENSHAW, on WEDNESDAY and

FURSDAY, January 16 and 72, commencing at 11 A M each

MESSRS. SOUTHERDEN, MORRIS, and THURSDAY, January 16 and 17, commencing at 11 AM each day, by order on Mr. Geo. Mitchell, who is about to make reparrangements in his busness which necessitates the sale of a portion of his stock. It is a well-known fact that Messes, the stock of the same of the

Monday Next.—(Sale No. 6536)
ILLIUM AURATUM and other BULES from Japan.
MR. J. C. STEVENS will SELL by
Covent Garden, W.C., on MONDAY NEXT, January 7, at
half-past 19 a "Clock precisely, an Importation of LiLIUM
AURATUM, just received from Japan in face condition; also
AURATUM, just received from Japan in face condition; also
AURATUM, just received from Japan in face condition; also
AURATUM, just received from Japan in face condition; also
adiant and the second second from Japan in face condition; also
Auratum Managament of PLANTS and BULS
from Mexico. comprising Terrestrial Orchids, Begonias, Amarilis, &c.; Rare Californias Bulls, Tigridias, Gladioli, Tuberoses, Para Californias Gladiolium Alphanias, Californias, Gladiolium Alphanias, Californias, Californias,

On view morning of Sale, and Catalogues nad.

Wednesday Next.—(Sale No. 55;8.)

First-class STANDARD and DWARF ROSES, &c.

MR. J. C. STEVENS will SELL by
Covent Garden, W.C., on WEDNESDAY NEXT., January o,
at half-past 13 o'Clock precisely, 12 so first-class Standard, Haif
varieties, from well known English Nursteries: I Fyzoniad and
Dwart-trained FRUIT TREES, of sorts; choice named CAR
NATIONS, PICOTEES, PINKS, and other HARD
HERBACEOUS BORDER PLANTS, DUTCH BULBS, &c.
On view morning of Sale, and Catalogues had.

Thursday Next.—(Sale No. 6520)

Thursday Next.—(Sale No. 6520)

RTABLISHED and IMPORTED ORCHIDS.

MR. J. C. STEVENS will SELL by
Covent Garden, W.C., on THURSDAY NFXT, January 10,
at half-past 12 o'Clock precisely. Established and Imported
ORCHIDS, comprising the following:—Cattleys Trianze
species from the district beyond Popyana, Masdevallia Crossi
exceedingly race), M. cucultat (rare), M. macrura, M. Shutleworthii, M. trochlius, M. Harryana, and M. chimera;
C. pulchellum: Onedium Papilio mying. Psphinia cristata, and
Odontoglosum Recelii, all in the best condition, from Messrs.
Shuttleworth, Carder & Co.

On view morning of Sale, and Catalogues had.

Thursday Next—(Sale No. 6550)

For many years nothing new has been offered in the way of Plants for forcing and to cut flowers from during winter adapted for Fiorists and Bouquetists than this Ornithegalum. The ease with which they are forced, the abundance of flowers, and their pure shuy, snow-white, gitteining crolous, fragrancy, and above all, their lasting qualitation, and the shadow of the above. It has been still their lasting qualitation, which is not even the shadow of the above. The builts are very similar to the Lachenalia quadricolor, their slendscum, which is not even the shadow of the above. The builts are very similar to the Lachenalia quadricolor, their slendscum, which is not even the shadow of the above. The builts are very similar to the Lachenalia quadricolor, their slendscum, which is not even the shadow of the above. The builts are very similar to the Lachenalia quadricolor, their slends straight flowers stem is about 8 inches highly up to the first flower; as it has bout 5 inches highly up to the first flower; it has bout 5 inches highly up to the first flower; it has bout 5 inches highly up to the first flower; it has bout 5 inches highly up to the first flower; it has bout 5 inches highly up to the first flower; it has bout 5 inches highly up to the first flower; it has bout 5 inches highly up to the first flower; it has bout 5 inches highly up to the first flower; it has bout 5 inches highly up to the first flower; it has bout 5 inches highly up to the first flower; it has bout 5 inches highly up to the first flower; it has bout 5 inches highly up to the first flower; it has bout 5 inches highly up to the first flower on the first flower; it has bout 5 inches highly up to the first flower; and flower flower; it has bout 5 inches highly the highly the highly highly the highly highly the highly h

MR. J. C. STEVENS has received instruc-tions to offer for SALE by AUCTION, at his Great Rooms, 28 King Street, Covent Garden, WC, on THUSD DAY NEXT, January 10, 6000 Bulbs of the above fine ORNITHOGALUM, On view morning of Sale, and Catalogues had.

Flowering Orchids.

MR, J. C. STEVENS begs to announce that his first SALE of FLOWERING OKCHIDS this season will take place on WEDNESDAY, January 16. Geulem desirous of entering Plants for this Sale will please seed particulars of same not later than Thurday next, January 10. Auction Rooms and Offices, 3 King Street, Cox. January 10.

Thursday Next.—(Sale No. 6559)
4000 LILIUM AURATUM, just received from Japan in fine
conduien.

MR. J. C. STEVENS will include the above in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAV NEX1, January to. On view moroing of Sale, and Catalogues had.

POR SALE, GREENGROCERY and CONFECTIONERY.—Fine double fronted Shop and 8 roomed House. Owner having another business must seil. Price £49, including good stock.
744, Dalston Lane, Hackbey, S.

TO BE LET, or SOLD, at Leighton Buzzard, Beds (Loudon and North-Western Railway), a good HOUSE and SHOP, in a commanding position, with Greenhouses adjoining, fitted with latest improvements for heating Garden Ground have been occupied by a Florist, &c. A portion of the purchase money can remain on mortgage Apply to Messrs. WILLIS, Solicitors, Leighton Buzzard, Beds.

TO BE LET, a SHOP, in Baker Street,
Apply to Mr. DAWN, Baker Street Bazaar, W.

To Market Gardeners,
To BE LET, BEDS, Single or Double,
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Fifty Nurseries, Market Gardens, Florist and Seed BUSINESSES to be DISPOSED OF.

MESSRS, PROTHEROE AND MORRIS'
HORTICULTURAL REGISTER contains full particulars of the above, and can be obtained, gratis, at 8, New Broad Street, E.C.

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PROTHEROE AND MORRIS, HORTICUL-TURAL MARKET GARDEN and ESTATE AUCTIONEERS and VALUERS, 8, New Broad Street, E.C., and at Leyton-stone, E. Monthly Horticultural Register land on application.

For Foreing.

A SPARAGUS — ASPARAGUS. — In consequence of ground being sold for building, and must be cleared, we have to offer several acres of very fine beds, strong plants, 54, per 100, reference required from unknown correspondents.

A. HART AND SONS, 158, High Street, Gui'dford.

FRUITTREES (74 acres).—
RPLES PEARS, PLUMS, CHERRIES, PEACHES,
NECTARINES, APRICOTS, &c., as Standards, Dwarfs,
Pyramids, Bushes, Cordon and Trained Trees in great variety.
INES, excledent canes, as, 6d. to too, def. ORCHAR.
Proximity of the Contraction of the

Beautiful Flowers for Gardens.

DOTENTILLAS, PYRETHRUMS, DELPHINIUMS, lovely hardy flowers for Cutting or Garden
Bloom. Named, ss. per dozen.

SPLENDID PHIOXES, Pentstemms, Pinks, Pausies, in the
finest varieties, st. 6d, per dozen.

HARDHER HARDLE OF ISON YIS, the most showy sorts,

HARDY HERIACLOUS PLANTS, the most showy sorts,
S. per dozen all period EES, good exhibition sorts, 6x,
per dozen plants. Fine Clove and Border Self varieties,
4x, per dozen—all from layers.
LILIES, candidum, Orange, and Tiger Lilies, 9x, per dozen.
WM. CLIBERAN ANS DON, Odfield Nursery, Altrincham.

To the Trade.

HOME GROWN VEGETABLE and FIELD SEEDS.

AND F. SHAR PE are prepared to make a special offers of all the varieties of VEGETABLE and AGRICULTURAL SEEDS they have grown this canon from choice selected stocks. The quality of the seeds is excellent, and the prices are very low.

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LERACEOUS and ALPINE PLANTS,
—CATALOGUE, of fity pages, containing full information as particularly and pages, containing full information as planting full information of the pages, and
porders, from 285, per 100, or 42, per dozen. Most of the plantin
being in pots may be despatched at any time, or by Parcels Post
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AXTON'S EARLIEST OF ALL PEA.

For the First Dish of Peas this is sessentially the first variety extant. Overwhelming testimonoisla shout its superior qualities, splendid colour and great productiveness.

Price, per scaled quist, 32: 6d; per scaled pint, 22:

To be had of all Seedsmen and
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SCOTCH FIR, true native, a to 3 feet, twice transplanted, 18th per noci, 2 nyr., ryr., fine, 5t. per 100,000 pe

MUNRO EROHERS, Nuseries, Inverses, N.E.

SPECIAL OFFER.—ASH, 2 to 3 feet, 16s, NUTS, s to 3 feet, 2ss, per 1000; 3 to 4 feet, 2ss, per 1000; 5 SMnih CHEST.

NUTS, s to 3 feet, 2ss, per 1000; 12 Mns, a to 3 feet, 2ss, per 1000; 12 to 3 feet, 2ss, per 1000; 14 feet, 15s, per 1000; 12 to 3 feet, 2ss, per 1000; 14 feet, 15s, per 1000; 15s, per a to 3 feet, 14s. per 1000. GARLIES MITCHELL, Nurseries, Strauraer.

To the Trade.

NUTTING AND SONS' Wholesale CATA-LOGUE of Garden, Flower, and Agricultural Se-ontaining complete LISTS of NOVELTIES for 1884, een Posted to all their Friends; if not duly received, ple form them, and another Copy shall be sent. Seed Warehouses, oo, Barbiena, London, E.C.

T REES and SHRUBS.
100,000 Hardy HEATHS, nice plants, suitable for planting on banks and moueds. Cao he supplied in 20 or 30 varieties, at 4th per dozen, 25th per 1000.

LARCH, 2 to 3 feet, 21th per 1000; 3½ to 3½ feet, 23th per 1000; 3½ to 4½ feet, 23th per 1000; 3½ to 4½ feet, 23th per 1000; 3½ to 4½ feet, 33th per 1000; 3½ to 4½ fe

per 1000. FIR, Scotch, 1 to 11/2 foot, 18s. per 1000; 11/2 to 2 feet, 27s.

FIR, Scottn, 1 u *2.7 cm.

CEDRUS DEODARA, 2 to 2½ feet, 127, per dozen, 900. per 100; 3 to 100. per 100; 3 to 2½ feet, 242, per dozen, 1602, per 100; 3 to 26, per 400cn, 275, per 100 beautiful plants, baving been recently transplanted.

RHODODENDRONS, Hybrids, 9 to 15 inches, 372, per 100, 07 3003, per 100; 12 to 18 inches, 322 per 100, 07 3003. per 100; 15 to 30 inches, 422, per 100; 1½ to 2 feet, 100. per 100; 15 to 30 inches, 422, per 100; 1½ to 2 feet, 100.

CATALOGUES, containing other Evergreens and Flowering Shrubs, may be had on application to JAMES SNITH AND SONS, Darley Dale Nurseries, near Matlock.

A Gay Conservatory.

PRIMULAS, CINERARIAS, 4s, and 6s. per dozen, according to size.

HERBACEOUS CALCEOLARIAS, 15. 6d. per dozen, from

CYCLAGES.

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DEUTZIA GRACILIS, in pots for early blooming, 6s., 9s., and 1ss. per docts. Three it same rites.

Fine clumps SPIRÆA JAPONICA, DIELVTRA SPECTA-BILIS, 5s. per dozen.

ZALEAS, Ghent, mollis, pontica, or indica, all with buds, for Forcing, 18s., 4st., and 9ss. per dozen.

WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham.

Vines - Vines.

THE LIVERPOOL HORTICULTURAL
COMPANY (John Coway), Limited, have this season, as
usual, a splendid stock of VINES, sustable for Fruiting in Pots
and Plasting Vinetics, Also a fine stock of Marchal Niel,
Gline de Dijon, and other Priced LIST on application,
I tescriptive Priced LIST on application,
the Vineyard, Garston, Liverpool.

NOVELTIES OF MERIT

SPECIAL. — The unequalled resources at Messrs Webbs' command, as proprietors of the most extensive Seed Farms and Trial Grounds in the Kingdom, enable Seed Farms and Irial trounds in the Kingdom, enable them to carry out the most critical tests and trials of all new kinds of Vegetables, Flowers, Potatos, &c; and it should be borne in mind that they do not offer anything to the public as a novelty until they have thoroughly satisfied themselves that it is of superior merit.—See the "Times" of Dec. 17, 1883.

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THE WORDSLEY WONDER.-The earliest Blue Wrinkled Marrow Pea in cultiva-tion. 3s. 6d, per pint. Carriage free.

STOURBRIDGE MARROW.—This grand Pea is unequalled for Exhibition purposes or general use. It is second early, and grows about 4 feet high. 2s. 6d. per pint. Carriage free.

NEW LEEK-Webbs' Colossal. -A distinct variety, of rapid growth, fine quality and immense size. 18. per packet. Post-free.

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NEW LETTUCE-Webbs' Wordsley Gem. This is the earliest Cos Lettuce in cultivation: medium size, very crisp, and of grand flavour. 1s. per packet. Post-free.

NEW POTATO-Webbs' Reliance A most valuable variety for the main crop, posser-sing unequalled table properties. 4s, per peck

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The above strains are noted for the singular beauty and richness of the blooms, which are produced in great profu-

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Contains full particulars. Gratis and post-free to Customers. To Non-customers, price 25., post-free.

WORDSLEY, STOURBRIDGE

SEASON 1884.

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SEED MERCHANTS.

43 and 45, Corporation Street, Manchester,

NEW and SELECT VECETABLE SEEDS, &c.

DICKSON, BROWN & TAIT'S "KING OF TOMATOS,"

per Packet, 1s. 6d.



DICKSON, BROWN & TAIT'S "QUEEN OF TOMATOS,"

DICKSON, BROWN & TAIT'S "ECLIPSE" CAULIFLOWER, per Packet, 1s. 6d.

DICKSON, BROWN & TAIT'S "BEST OF ALL" MELON, per Packet, 1s.

DICKSON, BROWN & TAIT'S "NE PLUS ULTRA" MELON, per Packet, 15.

DICKSON, BROWN & TAIT'S "GIANT" CABBAGE LETTUCE, per Packet, 1s.

DICKSON, BROWN & TAIT'S "ALL THE YEAR ROUND" CABBAGE LETTUCE. per Packet, 1s.

DICKSON, BROWN & TAIT'S NEW EARLY ROUND ASHLEAF POTATO "MANCHESTER RIVAL."

per Peck, 3s. 6d.; per Bushel, 12s.

DICKSON, BROWN & TAIT'S "GARNETT'S SEEDLING" POTATO, per Peck, 3s. 6d.; per Bushel, 12s.

For full descriptions of the above New and Select Vegetables, see our Illustrated Vegetable and Flower Seed CATALOGUE, now Published, and Free on application.

NOTICE.—A Copy of our Illustrated Vegetable and Flower CATALOGUE has been Posted to all our Customers. Should any not have received it, please inform us and another Copy will be sent.

DICKSON, BROWN & TAIT,

MANCHESTER.

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JAMES VEITCH & SONS.

ROYAL EXOTIC NURSERY, CHELSEA, S.W.

NEW BEET, PRAGNELL'S EXHIBITION. A remarkably handsome and distinct variety, eminently suitable for exhibition, and one of the best for general purposes.

Per packet, 18. 6d.

BROCCOLL, Veltch's Self-protecting Autumn.
A most valuable Broccoli for autumn and early winter use.
Heads beautifully white, firm and compact, thoroughly protected by the foliage. Per packet, 1s.

NEW BRUSSLES SPROUTS, Veltch's Exhibition.
This grand variety is unequalled for exhibition or for general
use. The stems are entirely covered from top to bottom with
fine large sprouts, which are very firm and solid, remarkably
tender, delicate in flavour, and remain a long time fit for use.

Per packet, 1s. 6d.

CABBAGE, ELLAM'S EARLY SPRING.
A very early spring variety of dwarf, close, compact habit, forming firm solid hearts of excellent quality.

Per packet, 1s.

CAULIFLOWER, Vettoh's Extra Early Forcing.
First-class Certificate, Royal Horticultural Society,
Of dwarf compact habit, with short stems and small leaves;
comes into use earlier than any other variety. Highly recommended for forcing or very early use.

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NEW CABBAGE LETTUCE, Veitch's Perfect Gem. A most distinct, compact-growing variety, of a rich deep green colour, forming very early a close solid heart, beautifully crisp, juicy, and tender, and of excellent flavour. Per packet, 1s. 6d.

LETTUCE, VEITCE'S SUPERB WHITE COS.
A magnificent self-folding variety, growing to an immense size, of superior quality, very crisp and fine flavoured. Stands a long time before running to seed.

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First-class Gerificate Rayal Horticultural Society, Aug. 14, 1883.

The fruit can be grown to enormous size, is of handsome form, oval in shape, with a bright orange skin very evenly netted; flesh thick, very juicy, and of excellent flavour.

Per packet, 3s. 6d.

NEW TOMATO, Hackwood Park Prolific. First-class Certificate Royal Horticultural Society, Julya4, 183; An extremely prolific ow and early variety, producing huge clusters of handsome fruit of large size, which are remarkably smooth, even in form, and of a bright glowing scarlet colour. The flesh is firm and solid, of finest quality, and excellent flavour, Per packet, 18. 6d.

TURNIP, VEITCH'S RED GLOBE.
The finest Turnip for garden purposes, very handsome in shape, and of fine flavour.
Per ounce, 6d.

NEW POTATO, WELFORD PARK
KIDNEY

The best Seedling White Kidney Potato of 1893.

Awarded this season Two First-class Certificates by the Highest
Authorities, viz., by the

Royal Horricultural Society, August 30, 1883;
and by the

Committee of the International Potato Exhibition, Sept. 13 and

Awarded the 1st Price as the best Seedling White Kidney Potato
of the year, in competition with 22 older new varieties.

Per pound, 16, 6d.: ber 41b. 58, 64, pag. 71b, 85, 64.

Per pound, 1s. 6d.; per 4 lb , 5s. 6d.; per 7 lb., 8s. 6d.

IMPATIENS SULTANI.

First-class Certificate Royal Horticultural Society, August 22, 33; and Botanical Certificate, Royal Botanic Society, May 16,

183; and focusing and beautiful plant is remarkable for its profits most distinct and beautiful plant is remarkable for its profits and continuous flowering, and the georgeowness of its flowers, which are of a brilliant and effective rosy-scarlet colour. Decorative alike for the Stove, Greenhouse, Conservatory, Dinner-table, and for Summer Bedding.

Per packet, 18. 6d. and 28. 6d.

Per packet, 1s. 6d. and 2s. 6d.

NEW OYCLAMEN GIGANTEUM, Charming Bride.

First-class Certificate Royal Horticultural Society.

This superb new and distinct variety is of compact, rought

reperted for the property of the compact of

MYOSOTIS DISSITIFLORA ALBA

A true pure white form of the lovely M. dissitifiora. A most desirable acquisition for early spring gardening.

Per packet, 1s. 6d.

PRIMULA, VEITCH'S SUPERB STRAINS
Finest Fringed (Red, White and Mixed).
Each per packet, 2s. 6d.
These are the finest in cultivation, and were awarded a First-class Certificate by the Royal Horticultural Society for superior quality.

PRIMULA OBCONICA.

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A new, pretty, and interesting Primula, with flowers of a soft lilac shade of colour, flowering continuously and profusely from spring till autumn. Per packet, 2s. 6d.

For full Descriptions of above and other Choice Novelties and Specialities see SEED CATALOGUE for 1884, forwarded gratis and post-free on application.

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LARGEST ROSE GROUNDS IN ENGLAND.

CRANSTON'S NURSERIES.

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SPECIALITIES:-

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FRUIT TREES,
Apples, Pears, Plums, Cherries, Peaches, Nectarines, Apricots, &c., grown in every variety of form.

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CONIFERÆ, in great variety. STANDARD and ORNAMENTAL TREES, FLOWERING SHRUBS, &c.

CATALOGUES FREE ON APPLICATION,

CRANSTON'S NURSERY & SEED CO. (LIMITED), KING'S ACRE, HEREFORD.

HARRISONS' NEW EARLY "ECLIPSE"

A grand new Early Pea, introduced by us last season,

The haulm is of a peculiar light green colour, only a feet in height, the pods of a lively green and well filled, and is the heaviest cropper for an early variety we have ever seen. The seed is blue and similar in appearance to the "Kentish Invicta," but it is hardier and even earlier than that excellent variety,

Retail Price-Per Pint, 1s. 6d.; per Quart, 2s. 6d. Trade Price-Per doz. Pints, 12s.; per doz Quarts, 21s.

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Prom Mr. John Swift, Manchester. "October 24, 1883.—I consider your New Early Eclipse Pea to be the best early Pea I have ever grown, both for earliness, size of pods, and appearance."

From Messrs. Taber & Cullen, Rivenhall.
"October 25, 1883.—The New Pea, 'Early Eclipse,' we had
from you last season is a good early blue, and valuable for
podding, all coming in together."

Pounney, an coming in together.

From Mr. Samuell Taylor, Pershore.

"October 23, 1832.—I found your New Early Eclipse Peaver early and profile. Sown by the side of Kentish Invicta, they were ready to pick nearly a week before that variety, and I picked nearly 4 pots (40th, per pai) off the little patch of ground, and had &s. per pot for them; when the other early ones were ready the picke had dropped to 5x. I hope you will be able to spare the 4 bushels I spoke for in the summer."

"October 38, 1883.—Your New Early Eclipse Pen is the best early Pea I even had, it is a good cropper, very early, and gave me every satisfaction. I hope those you have sent me will prove as good."

"July 5, 1883.—I find your New Early Eclipse Pea an early and good cropping variety. When you are quoting the price per bushel for the coming year, I should like a quarters of the same stock of Pea."

The above Testimonials are only a few from the large number we have received.

Trade LIST Free on application.

HARRISON & SONS.

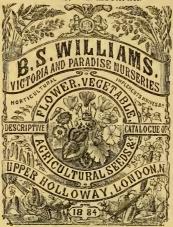
SEED GROWERS, LEICESTER.

FERNS A SPECIALITY.

EXOTIC and BRITISH FERNS and SELAGINELLAS.

suitable for STOVE and GRENHOUSE Cultivation, for OUTDOOR FERNERIES, and other purposes, in immense anumber and variety. SPECIAL LISTS, issued at intervals during the year, giving extremely low quotations, may be bad FREE on application.

W. & J. BIRKENHEAD. FERN NURSERY, SALE, MANCHESTER. Now Ready, Gratis and Post-free,



The above is now published. It contains upwards of 60 pages of Letter-press, and is copiously Illustrated with Engravings of all New and Choice Flower and Vegetable Seeds, with full Cultural Directions.

WHOLESALE SEED CATALOGUE.

We have now published our Wholesale CATALOGUE of Vegetable, Flower, and Agricultural Seeds, containing, also, all the best Nover, and Agricultural Seeds, per had on applica-tion. All our Regular Customers. It may be had on applica-tion. All our Regular Customers and the per had been a compared to the per seed of the per seed of the per seed of the us know. WATKINS & SIMPSON,

EXETER STREET, STRAND, W.C. Seed and Trial Grounds, Feltham and Twickenham, Middleser.

ANTHONY WATERER

Invites attention to the following LIST of well-grown and properly rooted NURSERY STOCK;—

STOCK:

HOLLIES, Common Green, 3, 4, 5, 6, 7, 8 to
Buntifolia, data.
Hodging, 3, 4, 5 to 8 feet.
Hodging, 3, 4, 5 to 8 feet.
Saw-leaved, ditto.
Scottica, 3 to 8 feet.
Vellow-berried, altealerase and others.
Variegated, of sorts, 5, 4, 5, 6, 8 to 10 ft.
In circumsteners.
Golden Queen, 3, 4, 5, 6, 7, 8 to 10 feet, bundreds of beautiful specimens.
Ferry & Weeping Holly, on straight stems, with beautiful heads, ten to fitteen years' growth, hundreds.
In new Golden Weeping, a large number of very beautiful BoX, Green and Variegated, 3, 4, 5, 6, to 7 feet, many thousands.

BOX, trees and YEWS, to to feet, thousands.
YEWS, Common, 34, 5, 6, to to feet, thousands.
Godourner, 34, 5, 6, to to feet, thousands.
Godourner, 35, 5, 6, to to feet, thousands.
Housands as Eyram to feet, the many thousands as Eyram thousands as Eyram to thousands as Eyram to thousands as Eyram to thousands and size unequalled. of variety and size unequalled.

CUPRESSUS ERECTA VIRIDIS, 3, 4, 5, 6, to 8 feet,

thousands. ,, Lawsoniana lutes, 3, 4, and 5 feet, hundreds of beautiful

, Lawsoniana luten, 3, 4, and 5 feet, hundreds of beautiful specimes.

THUIOPSIS DOLABRATA, 3, 4, and 5 feet, hundreds, RHODODENDRONS, many thousands, 3, 4, 5, 6, 7, 8, to 10 feet. The plants are covered with Euds, AZALEAS, Hardy, the finest varieties known, 2, 3, 4, and 5 feet bigh, thousands, JUNIER, SC, Chinese, 7, 8, and 10 feet bigh.

PICEA PINSAPO, 6:08 feet.

NORDMANNIANA, 6, 7, and 8 feet.

Knap Hill Nursery, Woking Station, Surrey.



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LITTLE BOOK

FOR 1884.

Not since 1878 have we been able to congratulate our Customers on such a favourable Seed-barvest as that just passed (1882). Seeds ripeded well, and the quality is excellent.

Prices in many instances are lower than we have known

them for some time.

We have many interesting novelties to introduce this Season, which are fully described in our LITTLE BOOK, or SELECT SEED LIST for 1834, which is now ready, and will be sent free by post on receipt of 12 Stamps, or Postal Order for One Shilling.

Fisher over for Open Communic.

It is a Book of 65 pages, containing a large number of illustrations and much interesting reading, useful and entertaining to all who are fono of their Gardens, and are desirous of emulating or excelling their neighbours in growing the desiron of the desirons of emulating or excelling their neighbours in growing the desiron of exempthic.

ACOMENT THE BEST OF EVERYTHING.

Il contains a List of cheap collections of the choicest
Vegetsible Seeds, which can be formarded by the Parcels
Post, and will be found indispensable to all who intend
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CHOICE VEGETABLES for Prizes at the forthcoming Summer and Advances Show. mer and Autumn Shows.

mer and Autumn Shows.

An Orora Shert, containing complete list of Wheeler's.

Choice Vegetable and Flower Seeds, with prices at which
they can be delivered carriage free, will be forwarded gratis
and post-free on application. (This is an epitome of our
Little Book, but without illustrations or descriptive matter,
and will be found useful and convenient for ordering seeds.)

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H. KRELAGE AND SON, NURSERY-MEN, SEEDSMEN, and FLORISTS, Haarlem, Holland. Largest collection of BULBOUS and TUBEROUS-ROOTED PLANTS in the world. Established 1814. CATALOGUES and special offers on application.

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NEW and DESCRIPTIVE CATALOGUES of the following can be had free on application:-

SEEDS for the KITCHEN, the FLOWER GARDEN, and the FARM.

ROSES, FRUIT TREES, CONIFERÆ, and all kinds of DECORATIVE SHRUBS

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GENERAL PLANT CATALOGUE in February.

THE ROYAL NURSERIES, SLOUGH.

FIFTIETH ANNIVERSARY



ALL WHO HAVE A GARDEN SHOULD DEMAND FROM

CHR, LORENZ, Seed Grower & Merchant, Seedsman to Her Majesty the Empress of Germany and Queen of Prussia,

" " His Majesty the King of Saxony,

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100-103, JOHN STREET, ERFURT, GERMANY,

ILLUSTRATED RETAIL CATALOGUE for OWNERS of GARDENS and AMATEURS of his all the world over famous FIRST-CLASS CONTINENTAL FLOWER and VEGETAFLE SEEDS, which he supplies, without exception, pat/fre, at much lower prices than any other firm.

CATALOGUE in English language on application gratis. The Seeds arrive within ten days after receipt of order.

NEW WHITE IPOMÆA, IPOMÆA THOMSONIANA.

IRELAND & THOMSON

Have the pleasure to announce that they will distribute this splendid novelty early in May, and are now booking orders which will be executed in rotation. For particulars and description, also drawing, see Gardeners' Chronicle for December ao.

Price, 21s. and 42s. each.

Price to Trade on application.

CRAIGLEITH NURSERY, COMELY BANK, EDINBURGH.

NEW EARLY RHUBARB, Charles Kershaw's "Paragon."

This is unquestionably the finest variety of Rhuberh ever offered; in mild seasons it is ready to pull of elong the first than twice the weight can be pulled from this tone than twice the weight can be pulled from this tone from any other sort. The colour is a splendid red, flavour excellent, and it has this qualification over all others, IT NEWER SEROS.

PRICE-Per Plant, 1s. 6d.; per Dozen, 15s. Price to the Trade on application.

For Testimouials and all other information, see back page of Gardeners' Chronicle for October 13. May be had of all the principal Nurserymen and Seed Merchants, or direct from

CHARLES KERSHAW THE SLEAD SYKE NURSERIES, BRIGHOUSE. ROSES (20 acres). - Well-rooted, many Note S. (20 acres).—Well-rooted, many shooted, truly named, of matured vigorous growth, and of the best kinds. Bushes, R. S. & Co.'s selection, 8s. per dozen, 6ss. per 100; packing and carriage free for cash with order. Standards, 1ss. per dozen, or no free for 1ss. These processing the LIST free on application.

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A NDRÉ LEROY'S Nurseries, at Angers, France, the largest and richest in Europe in Collections of FRUIT and ORNAMENTAL TREES, SRUBS, CANELLIAS, ROSES, SEEDLINGS, STOCK FRUIT TREES, &c. CATALOGUES sent on application. Freight from Angers to London, viá Hoofleur, about 21. 64, per 100 lb. Medal of Honour at the Universal Exhibition at Paris in 1758. O'ders must be addressed to Mesers. WATSON AND SCULL, 99, Lower Thames Street, London, E.C.

AING'S CHOICE HYBRIDISED SEED, all new and of unequalled quality. Sealed packets, free by post—single, 1s., s. & d. add 5s. † Gubbe, 2s. & d., s. & d. d. d. s. d. dubb, and 5s. TUBERS, mixed seedlings, by Parcels Post, 4s., 6s., 9s. and upwards per dozen. The Trade supplies and upwards per dozen. The Trade supplies. JOHN LAING AND CO., Seedsmen, Forest Hill, S.E.

N E W R A S P B E R R Y, "BAUNFORTH'S SEEDLING."
"Testimonial from Mr. THOMAS LAXINO, Bedford:—
"Enumforth's Seeding, Raspherry has again proved the best of all Red Raspherries tried at Cirtufor (14 varieties)."
Canes, 35t. per 100, 65. per dozen.
Canes, 35t. per 100, 65. per dozen.
Early orders respectfully solicited.
EDMUND PHILIP DIXON, The Yorkshire Seed Establishment, Hull.

HELLEBORUS NIGER MAXIMUS.-The large flowered Aberdeeo variety, true, 1s. 9d. each, 18s. per dozen, Post-paid or carriage-free for Cash with order.

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KELWAY AND SON'S CATALOGUE of Choice Seeds is now ready, and will be forwarded on application.

First-class Seeds Only.

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CATALOGUE has been Posted to their Customers
if uot received, please Write them for another copy. Post-five
to all applicants,
Highgate Nurseries, London, N.

APPLE TREES with MISTLETO grows ing on them, from 75. 64, to 215. each.
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EDS HAM'S "LATEST OF ALL"
BROCCOLI.

Mr. S. Ledsham, the raiser of this unequalled Broccoli, "which was awarded a First-class Certificate by the Royal Horticultural Society, May 9, 1882"—see Gardners' Chronicle for May 13, p. 645—has succeeded in harvesting this season a good supply of Seed of the above Broccoli, and is propagate to make Special Liberal Offers per pound or cwt. to the Trade, the appropriate of the Compagate of the Compagat

TRAINED FRUIT TREES.

MORELLO CHERRIES, APRICOTS, PEARS, &c.
Price per dozen or 100 on application to
WILLIAM FLETCHER, Ottersbaw Nursery, Chertsey,

Surplus Nursery Stock.

EDMUND PHILIP DIXON will be pleased to send Special Offer for any of the following NUR-SERY STOCK, which are all remarkably healthy, and of

LILY OF THE VALLEY.—Crowns for plant-ing in shrubbery borders, woodland walks, &c.—Covent Garden grower clearing ground—72. 6d. per bushel of about

WILLIAM FLETCHER has to offer:—
LARCH, twice transplanted, 2 to 4 feet; HAZEL,
2 to 4 feet; CHESTNUT, Spanish, 2 to 4 feet; HAZEL,
MANETTI STOCKS; WOOD'S GARDD STOCKS;
GENERAL JACQUENIN'OT [Downship Panes on application. The Nurseries, Ottenhaw, Chettsey.

A SPARAGUS for Forcing.—Strong crowns, which will produce a quantity of capital heads, 2s. per dozen, 252.64, per 100.

SEAKALE, famous forcing roots, 25.64, per dozen, 165. per 100.

NICHARD SMITH AND CO, Worcester.

Outdoor Flowers in Spring.

AISIES, Red, White, Rose, &c.; POLYANTHUS, Single PRIMSOSES in variety of colours,
WALLFLOWERS, CANTERBURY BELLS, od. per
dozen, 4- and 55, per 100. PANSIES and VIOLAS
(colours, separate), RARABY ALYSSUM, SILENE
dozen, 85, per 100. Or coassorted Spring-flowering Plants
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HEPATICAS, Blue and Red, Double PRIMROSES, White,
Liliac, of Sulphur, 3s. 6f. per dozen.
WM. CLIBERAN AND SON, Oldfield Nursery, Altrincham.

LACOUNTY CONTROL OF THE STORY OF STORY

1coc crowns.

SEAKALE, exceptionally fine forcing, and best planting.

Price on application, very cheap.

Seed CATALOGUE anow ready, free.

COLLINS BROS. ANO GABRIEL, 39, Waterloo Road,
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HERBACEOUS, ALPINE, and ROCK PLANTS.
Collections of 100 choice varieties ... 367.

" 50" " 175. 6d.
Packing fee and extra plants sent to compensate for carriage. Rimingham.

The Planting Season.

A MORRISON, The Nurseries,
Eligin, beg to draw the attention of inteading Planters to their extensive and well-grown stock of SCOTCH FIR and LARCH, of all sizes, from 1.yr. seedlings to 2 to 3 feet, all the produce of seed collected for them in the Forests in the North of Scotland, and taken out of cone on kines within their Nursery with the Company of their Stock being "True Native."

True Native."

R. AND A. M. also grow largely PINUS AUSTRIACA, LARICIO and MONTANA, NORWAY SPRUCE, ASH, ELM (Wych, OAK, SYCAMORE, and other FOREST TREES, ATTALOGUES and Prices on application.

R. AND A. MORRISON, The Nurseries, Elgin.

A Q UILEGIA GLANDULOSA

GRIGOR'S, guaranteed true).

Twelve Plants of this beautiful Columbine, to bloom next
season, free to any part of the United Kingdom, at 6s. per
dozen. Cash with order.

JOHN GRIOOR AND CO., The Nurseries, Forres, N. B.

CHOICE GARDEN SEEDS

AT VERY MODERATE PRICES.

CARRIAGE FREE.

A Descriptive CATALOGUE of which will be sent free on application.

THOMAS KENNEDY & CO.,

SEED and NURSERY ESTABLISHMENT,

DUMFRIES.

SEEDS of SUPERIOR QUALITY.

MESSRS. DICKSON & ROBINSON

Have the pleasure to announce that their

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VEGETABLE and FLOWER SEEDS, &c.,

Is now ready, and can be had, post-free, on application.

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and FLOWER SEEDS. GARDEN

THOMAS METHVEN & SONS

CATALOGUE of KITCHEN GARDEN and FLOWER SEEDS IMPLEMENTS, FRENCH HYBRID GLADIOLI, &c., for 1884, Is now ready, and may be had, post-free, on application.

EAST LOTHIAN INTERMEDIATE STOCK (true).—White, Purple, Scarlet, and New Crimson. In packets, 1s., 2s. 6d., and 5s. each colour.

WHITE WALL-LEAVED EAST LOTHIAN INTERMEDIATE STOCK -In packets, 25. 6d.

SEED WAREHOUSES:-15, PRINCES STREET, AND NURSERY GATE, LEITH WALK, EDINBURGH.

HUGH LOW AND CO. offer :-ACACIA ARMATA, well budded, extra fine, 75s. and 100s.

ADIANTUM CUNEATUM, 755, and 1005, per 100.
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Per 100.

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DEUTZIA GRACILIS, fine for potting for forcing, 25s. and

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evtra size, 2s. each. extra size, s.c. each.

LATANIA BORBONICA, well shaped sturdy plants, 150s.

per 100.
LAURUSTINUS, Freech White, well shaped plants in pots, finely hudded, 122, per dozen.
SOLANUMS, berried, 50; per 102.
PRIMULA, Double White Chinese, in flower, 125. and 185.

PELARGONIUMS, Zonal, Single and Double, in bud and flower, in 48-pots, 40s. per 100.
Clapton Nursery, Londou, E.

A BIES DOUGLASH GLAUCA,—An undunbted acquisition, having a great variety in babit and
shade of colon. More hardy than the common Douglast,
having withstood the severe winter of 1880 unscathed. Fine
healthy well-voted plants, 12 to 18 inches, 12n, per dozen; 18
to 24 inches, 181, per dozen; 2 to 3 feet, 241, per dozen.

DICEA CONCOLOR, the most ornamental of the species, superior in babit and colour to lasiocarpa; at 10 is inches, 44; per dozen.

Price LIST of Conifers on application.

MORRISON EROTHERS, Aberdeen.

New Seedling Potatos.

JAMES LYE has much pleasure in offering his new varieties, which, from his long experience, he can confidently recommend both for Main Crop and Show purposes. Fustclass Certificates, &c. Mr. R. Dean, Edmird, Royal South Fotalo Establishment; a base of the Royal South Fotalo Establishment; and the highest termed and other leading Fotato growers, speak in the highest term of their excellent qualities. Descriptive and Price LISTS on application to JAMES LYE, Gardener, Market Lavington, Devizes.

Gentlemen having Waste or Unprofitable Land
Should apply for
PAMPHLET on NUT TREES, Mr. COOPER, F.R.H.S, Calcot Gardens, Reading, Berks.

POSES IN POTS.—All the best New and Old English and Foreign sorts, from 18. to 36s, per dozen. These world-famed Roses cannot fail to give the greatest satisfaction. Descriptive LISTS on application. Descriptive LISTS on application.

WARF ROSES, splendidly rooted, the best sorts, 6s. per dozen, from ground; fifty for 2ss.

TEA ROSES, in pots, 1ss. per dozen, fifty for 5ss.

FINE CLIMBING PLANTS, Hardy, for Walls, Trellises,
Arbours, Rockeries, 8c., in twelve varieties, 6s. and 9s.

FINE HARDY HEATHS and other Dwarf American Plants, in variety, 4s. and 6s. per dozen.
PRETTY DWARF SHRUBS of various kinds, for Pots,
Boxes, Winter Bedding, &c., in variety, 4s. and 6s. per doz.
WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham.

To the Trade.

POR SALE, Double White PRIMULAS, good stuff, in 48-size pots. Price per 100 on application. Good TURF LOAM for Sale, cheap. Apply, A. WARSKITT, Waitham Cross, Herts.

KING'S MANUAL

UNRIVALLED GARDEN SEEDS.

POTATOS, &c.,

AT MODERATE PRICES,

With Prompt Dispatch.

POST-FREE SEVEN STAMPS.

GRATIS TO CUSTOMERS.

JOHN K. KING,

ROYAL SEEDSMAN,

COGGESHALL, ESSEX.

(ESTABLISHED A.D. 1793.)

Lilium auratam, Cypripedium japonicum, &c.
Several Rare ORCHIDS, &c.
THE NEW PLANT AND BULB COMPANY'S Special LIST, No. 65, contains a fine Selection for Spring Planting,
Lion Walk, Colchester.

TO TRADE. THE Dwarf-trained and Maiden Fruit Trees and Roses, of fine quality, grown on fresh land at Bush Hill.

APRICOTS, trained, 30s. and 36s, per dozen.

CHERRIES, in variety, trained, except May Duke and Morello, 21s. and 24s. per dozen.

PEACHES and NECTARINES, trained, £12 10s. p. 100. PEACHES, Dwarf Maiden, £3 15s. per 100.

PLUMS, trained, £7 10s., £8 15s., and £10 per 100. PLUMS, Dwarf Maiden, £2 10s. per 100.

ROSES, Standard and Half-standard, £3 10s. to £4 per

HUGH LOW & CO., CLAPTON NURSERY, LONDON, E. FOR SALE, by Private Treaty (in consequence of the residence being sold), 160 QUEEN PINES, forward in fruit. A low price will be taken to effect an immediate clearance. For price, apply to SMITH Ann GOLDSMITH, Land Agents, Fareham, Hants.

To the Trade.

MELON, BREADALBANE (New Hybrid, raised by Mr. Young, Tay mouth Castle).—A heautifully octed green-fleshed variety, weighing from 5 to 7 lb.; is a cross between High Cross Hybrid and Victory of Bath, possessing the hardy constitution of the former and the well-koown fruitfulness and fine flavour of the latter. Was awarded 1st Prize and First-class Certificate at the Royal Caledonian Horticultural Society's Show in July last.

Show in July last.

Per dozen packets 15s.

EAST LOTHIAN STOCK, Purple

""" Scarlet
White

"The above Stocks are firmed from pot plants.

IRELAND AND THOMSON, 20A, Waterloo Place, Ediaburgh.

To the Trade.

PEFORE PLACING YOUR ORDERS for this splendid new variety, please write for Special offer.

WM. KERSHAW, Airedale Nursery, Bingley, Paragon: Kershaw's New Early Rhuharb Paragon.

ENGLISH PEDIGREE ROSES.

BENNETT

HAS STILL A FEW OF HIS PEDIGREE ROSES TO OFFER, VIZ :-TEA-PRINCESS OF WALES-Dwarfs only.

HYBRID TEA-LADY MARY FITZWILLIAM—Standards only.

This is positively guaranteed to be a Hybrid Tea, having been seeded from Old Devoniensis × Victor Verdier, although some nurserymen, ignorant of its origin, class it as an H.P. Awarded Five First-class Certificates.

HYBRID TEA-DISTINCTION-Dwarfs and Standards. H.P.—EARL OF PEMBROKE—Dwarfs and Standards. H.P.—HEINRICH SCHULTHEIS—Dwarfs and Standards.

Standards, 3s., Dwarfs, 2s. each.

PRELIMINARY NOTICE.

H. BENNETT will place in commerce, in the Spring of this year, three of his PEDIGREE ROSES, of great beauty, viz.:—

MARY BENNETT, MRS. GEORGE DICKSON, GRACE DARLING.

Further particulars will appear in future Advertisements, and full descriptions will be ready the last week of February, which will be sent to Correspondents, and post-free to all Applicants.

PEDIGREE ROSE NURSERY, SHEPPERTON, MIDDLESEX. January 1, 1884.

THURSDAY NEXT.—(Sale No. 6559.)

ESTABLISHED AND TMPORTED

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT-January 10, at half-past 12 o'Clock precisely,

Established and Imported Orchids, comprising the following:

CATTLEYA TRIANÆ SPECIES, from the district beyond Popayan; MASDEVALLIA CROSSI, exceedingly rare; M. CUCULLATA, rare; M. MACRURA, M. SHUTTLE, WORTHII, M. TROCHILUS, M. HARRYANA and CHIMÆRA, ODONTOGLOSSUM CRISPUM (ALEXANDRÆ), O. PESCATOREI, O. SPECIES. O. PULCHELLUM, ONCIDIUM PAPILIO MAJUS, PAPHINIA CRISTATA, and ODONTOGLOSSUM ROEZLII, all in the best condition, from Messrs. SHUTTLEWORTH, CARDER & Co.

On view morning of Sale, and Catalogues had.

AUCTION ROOMS AND OFFICES, 38, KING STREET COVENT GARDEN, LONDON, W.C.

Very Fine Transplanted Trees.

A USTRIAN PINE, 2 to 2½ feet, 30.5 per 1000 per 1000

EAKALE and PARSLEY SEED, the growth of 1883; extra strong MANETTI STOCK, also Cuttings, for SALE. Apply to Mr. WILLIAM BISHOP, Hemsby, Great Yarmouth.

PECIAL OFFER. — PRIVET OVALI-FOLIUM, 1 to a feet, extra fine, bushy: PRIVET, Evergreen, extra atout and bushy, 2 to, feet; EEECH, 4 to 9 feet; SYCAMORE, 6 to 10 feet; LIMES, extra fine, 14 to 18 feet, all regularly transplaced. Price, &c., on application. E. R. DAVIS, Ycovil Nutscries, Yeovil.

Orchids a Speciality.

The stock at the Clapton Nursery is of such magnitude that, without seeing it, it is not easy to form an adequate conception of its unprecedented extent.

HUGH LOW & CO.

very cordially and respectfully solicit an inspection by all lovers of this interesting and beautiful class of plants, whether purchasers or not.

CLAPTON NURSERY, LONDON, E.

To the Trade.

TAMES JAMES CARTER, DUNNETT, AND BEALES Wholesale CATALOGUE of SEEDS, &c., has been Posted to their Customers; should it have miscarried another Copy will be sent on application to 237 and 238, High Holboro, London, W.C.

Special Trade Offer.

Special Trade outer.

Benum, true and good seed samples; or rails at £3 174. 6d, per Ton.

Suton's Fillbasket, good true seed; on rails at £4 per Ton.

Quotations for any other varieties upon application to.

FIDLER, Potato Grower, Reading.

Erica hyemalis, in flower.

HUGH LOW AND CO. offer the above, in

48-pots, at 75s. per 100; can be supplied by the 1000.
Clapton Nursery, Loodon, E.

JAMES GRAY,

DANVERS STREET HORTICULTURAL WORKS, CHELSEA, LONDON, S.W.,

CONSERVATORIES, VINERIES, ORCHID and PLANT HOUSES, &c. HOT-WATER APPARATUS for all purposes.

BOILERS and HOT-WATER CASTINGS of all kinds kept in Stock. BOILERS SET on the shortest notice by experienced workmen.

ABUNDANCE

We have much pleasure in introducing to your notice Messrs. BLISS & SON'S, of New York, NEW PEA, which bids fair to rival in popularity the "AMERICAN WONDER" introduced by the same firm.

Height, 15 to 18 inches; large dark green foliage. Pods 3½ in. long, containing six to eight large Peas of excellent quality. Second early, ripening one week after the earliest kinds. The most striking feature is its remost striking leature is to markable tendency for branch-ing directly from the roots, form-ing a veritable bush. Many ing a veritable bush, Many plants throw out six and more branches, each of which becomes literally covered with blossoms and pods in such abundance that the quantity produced by each would be considered a bountiful yield for an entire plant of many of the older varieties. Owing to this habit it should not stand closer than 6 inches apart in the rows, requiring only one-third the seed usually sown to produce the same result.

HALF-PINTS, SEALED, 2s. 6d. each.

×

BUSS'S SINGLE PLANT ABUNDANCE PEA FROM A PHOTOGRAPH

This sketch may appear exaggerated, but Messrs. Bliss have forwarded us a sample Vine, which, although damaged in transit, even now shows 67 pods, and they assure us that some have borne over 100.

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Gardeners' Chronicle.

SATURDAY, JANUARY 5, 1884.

THE NEW PLANTS OF 1883.

NE of the many signs of the advance of horticulture, and one which affords a pretty good test of its reality, is the constant influx of novelties, since they, of course, come in obedience to the law of demand and supply. Year after year our enterprising nurserymenimporters are chiefly traders now-find it to answer their purpose to have novelties to offer, and always at considerable cost, sometimes also at great risk to the agents employed, they continue to get them. If there were no spirited patrons of gardening pursuits, and horticulture were in a quiescent state, this would not be so; hence it is always a satisfaction to us to have a well filled muster-roll of new plants of the year, these being the class of novelties with which we have here more particularly to deal, and we think those of 1883 will bear favourable comparison with those of most of its predecessors. We shall commence our summary notice of the more important acquisitions of the year with the aristocracy of the floral kingdom-

THE ORCHIDS.

There is no hesitation about what plant is to occupy the premier position-the post of honour. By universal consent it would be accorded to Vanda Sanderiana (Gardeners' Chronicle, xx., 440, figs. 67,68), which has bloomed in this country since our reference to it twelve months ago, and which Professor Reichenbach has described in our pages as "the grandest novelty introduced for years"—an opinion which those who have seen its gorgeous blossoms will endorse, and those who have not seen will assent to as soon as the opportunity of doing so offers. Imagine a dense branched tuft of an evergreen epiphyte, with the usual recurved, channeled, obliquelytipped leaves of a Vanda, and from their axils the racemes of 8-12 flowers, each measuring nearly 5 inches across, the flowers flat, in the way of those of Odontoglossum vexillarium, and the upper sepal and the upper half of the petals of the same bluish-pink colour, while the larger lower sepals are of a bright greenish-yellow, longitudinally and transversely marked with crimson-red lines, forming a close squarish series of reticulations; the small brownish-crimson recurved lip serves as a foil to the other colours. This plant, which comes from the Philippine Islands, and was first flowered in Europe by W. Lee, Esq., will not easily be dethroned from its A 1 position. Another handsome form of the same genus, Vanda suavis Schröderiana, has made its appearance; it differs from the type, which is one of our finest Eastern Orchids, by having the sepals and petals of a pure unspotted lemon-yellow, and the lip and column pure white; and this is an abundantly distinct and a charmingly beautiful addition to our collections. A very high position must be given to Acrides Lawrencie, a grand new Eastern form, related to A. odoratum, and for the original plant of which the sum of 235 guineas was obtained, at a public auction sale. It produces long racemes of thirty or more levely blossoms as long as those of A. crispum, white changing to yellowish, and tipped with rosy-purple, the sepals and petals being cuneate-oblong, the lip with high oblong-dolabriform side to lobes, and the centre lobe with two purple lines running back to the mouth of the conical incurved spur. The name is given in compliment to Lady

Phalænopsis Sanderiana hears a very high character, and is no doubt a very fine thing. is intermediate between that of P. amabilis and P. Schilleriana, and the plant has elongate-oblong green or mottled leaves and panicled flowers, roundish in outline, 4 inches in diameter, the sepals and petals varying in different forms from whitish-rose to rosepurple, the lip white stained with yellow, and marked with cinnamon or purple stripes, and its tendrils assuming an anchor-like form. It appears to have been first flowered by Sir N. M. de Rothschild, having been introduced from the East by Messrs. Sander & Co. P. lencorrhoda alba is a chaste and delicate form of this rare species, which has slightly mottled oblong leaves and drooping spikes of handsome flowers, which are of a pure white, except that the lower side of the base of the sepals is spotted with purple, and the upper side of the lateral lobes of the lip marked with dots and streaks of a deeper rosy-purple; the cirrhi of the lip are prominently developed. It won for Messrs. Low class Certificate in the early part of last year, when exhibited at South Kensington.

Turning to another magnificent group-the Cattleyas-we find several additions and acquisitions. First, there is Cattleya nobilior (fig. 120, p. 729 of our last volume), a dwarf species allied to C. Walkeriana, but larger flowered; the flowers of a hright magenta-rose colour, the lip white on the throat and disc, with the front lobe edged and tipped with rose. This Brazilian plant was introduced through the Compagnie Continentale d'Horticulture. Then Mr. Beckett's C. superha splendens is a plant of extraordinary heauty, its colours being intensely rich deep rosy-purple, with a lip of rosyviolet, flushed with maroon, and having a velvety lustre on the surface, which adds very much to its attractiveness. The C. Sanderiana referred to last year appears to be a form of C. gigas-C. gigas Sanderiana-and is a superh form, the glowing purple of the lip, and the contrast with the two well defined yellow blotches towards the mouth of the tube being most effective. Other fine Cattleyas which have been offered during the year are-C. Trianæ formosa, C. Mendelii selbornensis, C. Warneri sudburyensis, and C. Mossiæ Hardyana, the latter a beautifully striate or mottled flower, which has proved to be constant in the production of its curious streaked or particoloured flowers. Our French neighbours are beginning to turn their attention to the cross-breeding of Orchids, and a very pretty hybrid, named C. calummata (not calumniata), recently figured in the Revue Horticole, has been obtained by M. A. Bleu by crossing C. amethystina with C. Aclandiæ (not Acklandiæ, as often written). It is of dwarfish habit, with rather large flowers resembliog Aclandiæ in form, the sepals and petals white, slightly flushed with pink and green, and heavily spotted with violet, the lip with the lateral lobes white and spreading, and the prominent wedge-shaped middle lobe of a rich velvety purple-crimson.

Amongst the Lælias we have the delicate and charming L. amanda, with large pallid blush flowers traversed by purple veios, the lip being more heavily marked, and having the few stronger central veins parallel, the rest being divergent, and variously netted, and extended to the crispulate margin. L. Wyattiana, a lovely Orchid, was imported with a batch of the short-bulbed form of L. purpursata; it has large flowers, with the sepals and petals white, and the lip fredy undulated in front, with its lateral lobes light yellow, and its front lobe of a fine light purple, veined with dark purple. Then we have the L. anceps Hilliana, which has pure white sepals and petals, the lip light purple and bliobed in the anterior part, marked with strong radiating veins, and a hright orange disc, and is a charming variety, disputing the palm for heauty with the superb anceps Dawsoni itself.

To another popular group, the Masdevallias, but few additions of importance have been made, and these rather in the form of new varieties than of species. One, however, M. Schlimii, which has been flowered in this country by Sir Trevor Lawrence, appears to he an exception, being regarded even in the imperfect manner in which it has as yet bloomed, as a promising plant, and having won its First-class Certificate. The leaves in the wild specimen exceed a foot in length, and the plant produces a raceme of six or eight flowers, which issue one above the other from sheathing bracts; the flowers have a short cup, with spreading sepals, the two lower oblong, the upper shorter, all having loog yellow tails, and the broader

portions being yellow, closely dotted over with fine reddish-brown spots, while the petals and column are white, and the lip yellow. The brilliant M. Harryana, which is very prolific of varieties, affords two splendid and distinct forms in M. H. atrosanguinea and M. H. miniata; the former is of a glowing tiot of crimson flushed, with magenta, which being well contrasted with the orange-yellow of the tube, is very charming. Not a whit less charming is the latter, which has flowers of a bright vermilion-red flushed with scarlet, the orange-yellow tube here also forming a yellow eye to the bright and beautiful flowers.

Of the favourite and deservedly favoured Odontoglossum crispum (Alexandræ) heautifully spotted forms continue to appear, some of the districts ransacked for them appearing to yield a hetter class of forms than others. One of the grandest spotted forms is that called O. crispum Cooksoni, on which the flowers are spotted throughout with hold blotches of rich dark brown, the colour forming a strong contrast to that of A. crispum Stevensii in which the spotting, though ahundant, is of a very pale hue of brown. O. crispum Marianæ, and O. crispum reginæ are two other splendidly spotted sorts. Some forms of this species, possibly hybridised forms, are giving us an approach to a yellow ground colour; of these, O. crispum aureum magnificum, and O. crispum Scottii, with noble flowers having a creamy-yellow ground, have been exhibited. In some cases, doubtless, this yellowish hue is due to the stage of development at which the flower has arrived. O. Pescatorei is also yielding some strikingly handsome varieties. Besides the charming O. P. Veitchianum noticed last year, we have now an O. P. aurantiacum in which the yellow at the hase of the lip is replaced by deep orange; and an Schröderianum, which is in the way of Veitchianum, and scarcely second to it in beauty, but which differs in having the markings of a more decided purple hue, and not extended so far over the segments of the perianth. A new and handsome Odontoglot is O. eugenes, which is supposed to be a natural hybrid between O. Pescatorei and O. triumphans, and in which the sepals and petals are orange-yellow, spotted with chestnut-brown, the lip being white, spotted with brown, and having a yellow blotch on the disc; it is a New Grenadan plant, which has found its way into the now famous collection at Trentham.

A splendid form of Oncidium Papilio, named Eckhardti, with flowers which in their size are very much beyond those of the ordinary type—twice the size—and which are consequently much more showy and attractive, has been figured recently in the Illustration Horticole. In this new form the three erect narrow linear sepals, 5 inches in length, and the lip 2½ inches broad, clear yellow in the centre, with a half inch border of bright brownish-red, are very attractive features of the flower.

Of Dendrohes we may particularise Dendrohium Wardianum giganteum, which is remarkable alike for its bold habit of growth and its enormous and richly-coloured flowers; and we must note of the more recently introduced species, D. Dearil, that it is of very free-blooming habit, with largish white flowers, marked only by a small green spot in the centre; it is an Orchid which, as it becomes better known, will certainly become more popular, as it is proving itself to be more useful. This is naturally a white-flowered species, but it is singular to notice that white-flowered varieties of many choice Orchids are turning up, sometimes where least expected, and they are always great favourites with cultivators, who seem to be fascinated by the delicacy of their flowers.

We have two or three new Calanthes of considerable merit with which to credit the past year. They have come from Cochin China, and are nearly allied to C. vestita, if indeed they should not be regarded as varieties of that highly ornamental plant, which they also resemble in flowering from the leafless pseudobulbs, and in their tall bracteate many-flowered erect or nodding scapes. In C. Regnieri the flowers are about 2 inches across, with the sepals white, the petals white, with a faint rosy central stripe, and the three-lobed lip, the front lobe of which is emarginate, of a lovely rose-pink, having a deep crimson central spot. In C. Stevensii the sepals, petals, and lip are all white, the latter marked by a rosy-purple central In C. Williamsii, a new introduction, the dorsal sepal is white, the base of the lateral ones white on the upper side, and pinkish-rose on the lower; the petals are white, hordered with rosy-pink, and pencilled with the same colour in the lower half, and the lip is entirely of a deep rose-colour, with the discal region of a much deeper rose.

Perhaps there is no more remarkable species to be recorded than Paphinia grandis, the flowers of which, naturally spreading out, measure 7 inches both in width and depth; the sepals and petals are $3\frac{1}{2}$ inches long, and 1½ inch broad; the dorsal sepal, which is oblong-lanceolate, has the lower half yellowish-white, with narrow, irregular, transverse bands of chocolatepurple, the upper part being wholly of this chocolatepurple hue; the lateral sepals are subfalcate, and marked in a similar way, but less fully, and less regularly handed; the ovate acuminate petals are narrowed to the base, and marked like the dorsal sepal, except that the hands are more concentric, and are small at the base, larger upwards; the lip is most oddly shaped, having a blackish-purple claw, attached to a cordate disc of lighter chocolate colour, with a cream coloured centre, the point of the heart forming another narrowed isthmus, beyond which are two spreading recurved filiform lohes of blackish-purple, and beyond all a roundish creamy white terminal lohe, which is covered with thread-like processes. Its gigantic size and the remarkable form of its lip mark this out as a flower never to he forgotten. Not quite so pro-digious, but reaching an expansion of 5½ inches, is the Batemannia Wallisii major, as flowered for the first time by Sir T. Lawrence, so that the chances are that when better established it may more closely rival the Paphinia. In this Batemannia the sepals are ovatelanceolate, acuminate, of a rich reddish-brown, fleshy, with a surface appearing to he tessellated from its veiny-like unevenness; the petals are similar in colour, white at the base, with a central white spot on each side of the column; the lip is ovate-acuminate, appearing of a darker brown from its reticulate markings of blackish-purple, and it has a claw onefourth of an inch long, hearing in front an erect crest of numerous white filamentous processes. Anguloa eburnea is another novelty amongst the large-flowered sorts; it is in the way of A. Clowesii, but white-flowered instead of yellow, and was important enough to win a First-class Certificate in September last at South Kensington. Lycaste Harrisoniæ eburnea is an Orchid likely to find favour with growers, its ivory-white waxy flowers showing out very distinctly. They are of the typical form, full-sized, the sepals and petals white, and the erect lateral lohes of the lip yellow, closely veined with forked lines of reddish-purple, the front lobe being white, with a few finer purple veins at the It is a really good thing, and quite different from Lycaste Harrisoniæ alba.

We had intended to have said a few words in commendation of Messrs. Veitch's splendid new hybrid Cypripediums of which C. Seden is the parent, three of which were shown at a recent meeting at South Kensington, and carried first-class awards by acclamation. We allude to C. cardinale, C. calurum, and C. Schüderæ. Mr. O'Brien has, however, treated of them so effectually in a recent number, that to economise space we here forbear. We however endorse every word he has written in their praise. They are a wonderful advance over any of the natural forms known, and show at how great an advantage the cultivator who has the riches of our Orchid-houses to draw upon works in the modern creation of new species, for, for aught we know, they may prove to be as good species as nine-tenths, if not ten-tenths of those which are concocted by herbatum botanists.

We must not close these notes on new Orchids without referring to two magnificently cultivated examples of an old one which have bloomed during the past year. We allude (1) to the specimen of Renanthera (Vaada) Lowii bloomed by M. Bergman, in the collection of Baron Rothschild at Ferrières, which had eleven flower-stems, giving a total length of 110 feet, and bearing 280 blossoms (see p. 656 of our last volume); and (2) to that bloomed by M. Skope e at Pechau, in the collection of Baron Hruby, which bore twenty-two spikes of its very remarkable blossoms. T. Moore.

(To be continued.)

BEDDING SANIFAGES AT CHISWICK.— Some of the close-growing species and varieties at Chiswick are very effective just now, presenting cheerful patches of bright green colour, clothing the grey rockwork at the west end of the large vinery. There are several forms, all close-growing and spreading. They have two seasons of acceptable service—when they are in flower, and in winter, when their foliage is pleasant to the eye.

New Handen Plants.

ODONTOGLOSSUM DORMANIANUM, n. sp.*

FOR a long while I have been puzzled by this plant which stands as a kind of connecting link between the old Odontoglossums crocidipterum, blandum, and nævium, Rchb. f., that neogranadian fine type with the clearest colours, the single raceme, the velvety lip with the two calli usually with the longest tooth in front. Dr. Lindley's nævium is a mixture of gloriosum, my nævium, and Oncidium nigratum. The bulbs and leaves appear to afford good characters. I have my reasons for believing more in the leaves than in the bulbs. The leaves of Odontoglossum Dormanianum are always very narrow and short, those of O. crocidipterum are much longer and broader. The bulbs appear very distinct. The bulb of Odontoglossum crocidipterum is oblong, blunt, ancipitous, narrower at the top, with few furrows, and several transverse impressions, which are deeper, but smaller, than those which we know in Odon toglossum nævium. The typical bulb of Odontoglossum Dormanianum is elliptical, blunt, ancipitous, nearly as wide at the top as at the base, covered with grooves and wrinkles, quite like the margins of certain undulate, marginated, epidermoid cellules. You may discover a very few lurrows, but they are not straight. Mr. Sander sent me quite lately a bulb that is much less wrinkled; is it only a younger one? Mr. Day remarks, in Gardeners' Chronicle, 1871, p. 1129, about Odontoglossum crocidipterum that the bulbs are nearly elliptical, oot tapering to the apex as most do, shorter and rather blunter at the edges than in most other Odontoglots. In age the bulbs shrivel and wrinkle all over irregularly, and never get sulcated in the grooves as the other. Such an acute observer as Mr. Day certainly knew what he wrote about. His peduncle, exactly labelled with "Day, 1871," as well as the leaf, are quite those of Odontoglossum crocidipterum. O. crocidipterum appears to have always a one-sided second raceme, while the inflorescence of our proposed novelty bears its flowers turned to all sides. The flowers of the older species are larger, have narrower and longer sepals and petals, lightest ochre-coloured, usually with sepia-brown spots, a brown tip to the lip, which is yellowish-white at the superior part.

Those organs are far more like those of Odontoglossum nævium and blandum in our novelty. Their colour is usually white, or whitish, rarely of the lightest ochre, and the numerous spots are darker, making a more elegant impression. The base of the lip is in some flowers of the purest yellow, and marked sometimes with a few red stripes. The tip of the lip is usually adorned with a larger blotch. The column is freckled at some places with brown, and the wings of the column, which are less fimbriate than in crocidipterum, are lightest sulphurine. Sepals and petals are shorter and broader than in Odontoglossum crocidipterum. I have a wild specimen of this from Mr. Sander, and a wild crocidipterum from poor Bruchmuller.

My ardent wish to see fresh materials of Odontoglossum crocidipterum for comparison was most liberally fulfilled by Sir Trevor Lawrence, who sent me a fresh bulb with leaves, and a fine inflorescence of his "best varieties," so that there would appear to be various varieties at Box Hill. If I remember well I had two or three times a variety with very pallid blotches.

The species is dedicated to Mr. C. Dorman, The Firs, Lawrie Park, Sydenham, London, S.E., one of our most iotelligent and ardent orchidists, and my excellent correspondent. H. G. Rehb, f.

OBERONIA CYLINDRICA, Lindl,

A very fine specimen, a well-grown plant, was kindly sent by Mr. O. O. Wrigley, Bridge Hall, Bury, Lancashire, imported from Manilla. I believe it has not been seen alive in Europe since 1840, when it

flowered at Hackney, imported from Manilla by Messrs. Loddiges, and described by Dr. Lindley in Bot. Reg. 1840, Misc. 23, p. 20.

It is interesting to see that the original note has some superiority over what is said in Folixa Orchidacca, viiii., Oberonia No. 2. "Bracteis serratis" being much better expressed by "bracteis subcilitatis." A very just remark of Dr. Lindley, omitted in Folia, is this:—"Each flower appears to consist of a labellum only, the sepals and petals being so closely turned back as to be unobserved until carefully looked for." The inflorescence is bent down, just as in Dr. Lindley's herbarium specimen. This may be typical. H. G. Rohb. f.

ISMENE ANDREANA, Baker.*

This is a very fine new species of Ismeoe, which was discovered by M. Edouard André in his expedition to the Andes in 1876, of which he brought home bulbs which have just flowered in his greenhouse at Lacroix in Touraine. Of species already known the only one that approaches it closely is I. teouifolia, Baker, in Bot. Mag., t. 6397. This has the same slender, one-flowered scape and narrow leaves, but in the present plant the perianth tube, segments and corona are all considerably larger, and the marginal lobes of the corona are much smaller and not toothed. It was found on the banks of the Rio Ambocas, in Ecuador, at an elevation above sea-level of 2500 metres, and bears in M. André's herbarium the number 4546. For drawing up this description M. André has kindly sent me not only the flower and leaves of the cultivated plant, but also his two original wild examples, with the notes he made from the fresh plant at the time of gathering it.

Bulb as large as an Apple, with pale brown membranous tunics. Leaves several to a stem, cotemporary with the flower, lloear, pale green, glabrous, 12-15 inches long, under I inch broad. Peduncle sleader, one-flowered, shorter than the leaves. Spathevalves three, linear, white, membranous, 2 inches Ovary oblong-trigonous, sessile, 1-3 inch long; perianth-tube green, cylindrical, erect, 41-5 inches long, curved at the top; limb white; segments linear, 31-4 inches long. Corona broadly funnelshaped, nearly 3 inches long, 3-4 inches broad at the throat, white, with green stripes, the marginal processes rounded, not toothed, 1-1 inch long. portion of the filament abruptly reflexed, I inch long; anthers yellow, linear, versatile, & inch long. Curved style exserted about an inch from the corona, green; stigma capitate. J. G. Baker.

INSTITUTE OF PAINTERS IN OIL COLOURS.

THE first exhibition of the works of this Society is now open in the newly erected building almost oppo-site Burlington House, Piccadilly. There are nearly 800 pictures in the three rooms, and although many of these works are far from being of a high class, yet there are many really fine works upon the walls, and some excellent examples of flower, fruit, and landscape painting. The pictures (as is generally the case in the Academy) are much too crowded, and it is wearisome and painful to pass over the many works which call for no special notice in the search for the more carefully studied and better executed amples. The figure subjects we must pass over with mere mention. There is one small and admirable work by L. Alma-Tadema; another by Mrs. Alma-Tadema; one work by R. W. Macbeth; one by F. Barnard (whose name is omitted in the index of names); two trifles by R. Caldecott; two works by W. Small; one by R. C. Woodville, and various other figure subjects by less known men. The usual imitations of the works of L. Alma-Tadema are on the walls-imitations of Roman people, imitations of imitated marble, imitations of L. Alma-Tadema's classic architecture, furniture, and costume. The difference between the works of the master and his imitators is just as great as between Madame Tussaud's waxworks and Phideas' sculptures on the Parthenon. There is plenty of history belonging to the Saxon, Norman, and Mediæval times of this country, and plenty of architecture, furrilure, and costume available for any artist disposed to strike out in a new line. Every one is satisfied with L. Alma-Tadema's "Rome;" if other artists must give us Romans and Roman things, let them give them according to their own ideas, and not as transparent copies from the one acknowledged great master. H. Fantin, the famous flower painter, is at his best in six Roses and twelve Poppies. These are two of the best examples we have yet seen of this artist's work. Near these pictures are two other works, both of a high class, viz., 4, "Black Diamonds," W. L. Wylie—black coal-barges under a brilliantly coloured sky; and, 7, "Waves Breaking by Moonlight," A. Severn.

Most of the flower subjects in this exhibition are well done; and the "Single Dahlias," 39, by Miss C. M. Parsons, is no exception. "Azaleas," 41, Catherine M. Wood, is also well done. 79, "Empress of India Chrysanthemuns," Charles Low, is also a good picture. 122, "The Daylight Dies," is an excellent picture by the well-known landscape artist, Alfred Parsons. 160, "Roses and Lilles," by Mrs. M. B. Miller, is a good painting of orange-coloured Lilles and Tea-scented Roses contrasted with a plate of deep blue colour. 223, "Marigold and Poppies," is a good work by T. R. Way, 203, "Treasure Trove," Briton Rivière, R.A., is an admirable and dryly humorous picture of 60gs. 598, "Autumn Gatherius," is a good picture of Pomegranate, Pears and Apples with Ivy. 608 is a good work of China Asters, by Adā Bell. 650 is one of Henry Moore's fine works—"Summer-time, Coast of Cornwall."

The gallery will well repay a visit, for there is an unusual number of good flower, garden, and landscape pictures. It would be well if, another season, a smaller number of pictures could be placed upon the walls, the less excellent pictures being altogether elimioated.

A LONDON MARKET GARDEN.

To those interested in gardening pursuits, and others who are not, Covent Garden has always been looked on as one of the sights of London, and this in spite of its ridiculously inadequate accommo-dation, for if there is one place in existence more than another where continually each morning may be seen several thousand people struggling with the impossible task of squeezing four times the amount of material into a given space that the said space can be made to hold, it is Covent Garden Market. Under the disadvantage of a confusion that looks inextricable, with the untold thousands of tons of vegetables and fruit and flowers piled and heaped together in a way that does not admit of half the quantity being noticed, enough is to be seen to excite wonder in the minds of those unacquainted with the market gardens round London as to where it is al Especially is this the case in the spring and summer months during the height of the season, when Rhubarb, Cabbages, Broccoli, Cauliflowers, Peas, Beans, Turnips, Carrots, Lettuce, and salad of all kinds, with Strawberries, Gooseberries, Currants, and other fruit, pour into the market in an endless stream of waggons and vans, that keep up a heavy rumble through the nights on the various roads leading from the country towards London. The vast quantities of garden produce that regularly flow to this centre need excite little surprise when it is remembered that in addition to supplying the 4,000,000 of people within the metropolis no inconsiderable quantity passes through the market to the leading provincial towns.

There is an extensive tract of level land, beginning at Tottenham, and extending through Edmonton and Enfield, in the direction of Waltham and Cheshunt, forming a wide valley, with a deep rich alluvial soil of the right texture, neither too light nor too heavy. Under this, at a depth of 5 or 6 feet, is a thick bed of clean shingly gavel, iosuriog perfect natural drainage, but down to which, from the character of the soil, the water does not pass so quickly as to carry with it the manurial elements from the surface, or to leave it deficient in moisture. The valley collectively may be described as a sort of half farm, half market garden, gradually becoming less of the former and more of the latter. Many of these gardens are of large size, and, as those at all acquainted with market garden work will suppose, very well done. In a well man-

Odnitoglossum Dormanianum, p. sp.—Aff. Odontoglosso occivo, Rchb. f. Pseudobulbo bumii ancipiti elliptico acolato usculo: speame quaquaverso densiusculo: speame servici sepame ancienti sumicio accidita culturio colori speame ancienti sumicio accidita culturio della culturi

^{*} Ismene Andreana, Baker.—Bulbo magno globeso; foliis linearibus synanthis pedalibus glabris; scapo gracili unifloro foliis breviori; spathæ valvis linearibus membranaceis; ovario sessili, oblongo-trigono; perianthii tubo cyliodrato 4½—5 poli. longo-tercto picie cerruo, limbi albi segmentis linearibus 3½—4 poli. longis; corona late infundibulari viridi vittato lobis marginalibus brevibus rotundatis haud dentatis; filamentum parte libero reflexo poliicari; antheris 'linearibus, stylo exserto, stigmate capitato.

aged market garden there is at all seasons of the year something worth seeing, but to give a fair idea of the work carried out, and the crops obtained, perhaps the best time is about the end of June, when these pales were taken.

The late Mr. Mitchell, father of the present owner, Mr. William Mitchell, began at Broadlands about 1839 with some 40 acres, which have from time to time since increased until now there are about 450 acres under cultivation. Some 25 acres are occupied with Pears and Apples, the rows of which stand far enough apart to admit of Gooseberries or Currants being grown between them, with, in some cases, Rhubarb. Of Pears, Williams' Bon Chrétien, Brown Beurré, and Hessle are the principal; Apples are confined mainly to Keswick Codlin, Manx Codlin, Gloria Mundi, and Monster Reinette, the last a large white cooking sort and a good keeper. The Pears were carrying a moderate crop; Apples plentiful. Only one variety of Gooseberry is grown-a large, long fruited, white kind, without a name, that I believe the late Mr. Mitchell picked up many years ago in the West of England. It is a good grower and an enormous bearer; the crop, as well as the Currants, was very

This Gooseberry rarely fails to yield abundantly, appearing to be more hardy than other sorts. Plums to some extent are grown along with the Apples and Pears, and a large breadth alone, except the usual bush fruit: between Victoria and Pond's Seedling are the principal varieties.

Raspberries are largely grown-a prolific red kind that has been long here is the only sort depended on. The land is perfectly adapted to Strawberries. Last year 27 acres were in bearing, consisting nearly all of one sort-Sir Joseph Paxton-which, being a heavy cropper and carrying well, is best liked. The rows are far enough apart to give plenty of room for cleaning and gathering; stable litter used to be employed for mulching, but now clean Barley straw alone is put io. The crop was very heavy. The young plantations of Strawberries are always made amongst Onions, of which there were last year about 20 acres. The Onions (White Port) usually follow Cabbages, the land being ploughed-up deeply in autumn, and left to mellow through the winter. A heavy dressing of manure is then put on and harrowed in and the Onion seed sown broadcast about the end of February or beginning of March, when the Strawberries, consisting of last year's runners, taken up from the bearing beds, are at once planted. Nothing could exceed the promising condition of the long rows of plants through this 20-acre piece. The thinning and weeding of the Onions is done by piece work, £10 per acre being the price paid for the work. The crop this season looked well, but was not quite so even as could have been wished for. Mr. Mitchell grows his own Onion seed, 2 or 3 acres at a time, about every other year.

Of Broad Beans there were some 7 acres by themselves, and nearly the same extent in alternate rows with Peas; the Pea most grown is Laxton's Supreme. The Beans and Peas were as even and fine a crop as could be imagined: the Beans are cleared off as soon as picked, leaving more room for the Peas, the rows of which are about a yard apart. Fifteen acres were occupied with Scarlet Runner Beans in rows a yard asunder: these are grown without sticks, the pnints pinched out so as to keep them dwarf; the plants were strong and vigorous, promising an abundant yield. Near these was a grand piece of Oats, about 15 acres, as free from weeds as the Onion ground; here, also, was about half an acre of Broccoli for seed -Mitchell's Late White, an old, well-known variety, hardy, and in every way a sort that may be depended on. The stumps of this Broccoli that had occupied some 8 acres were just cleared off, and the ground planted with Wallflowers, a noted deep red strain grown here very early. The plants were put in 12 inches apart in the row, and 18 inches between the rows.

At this point were 8 or 10 acres of Rhubarb—Mitchell's Early Albert, an excellent sort raised here, and which has been tried against the different kinds that bave been sent out with a character of being early. Side by side with St. Martin's Early the Albert is eight days in advance—an important consideration in market work. Grey Eagle is here looked on as the best favoured of all the varieties of Rhubarb: it is a medium-sized sort. The Early Albert and Victoria are the kinds grown for early work; some 8 acres are covered early in the winter

with 6 inches of straw, which brings it in considerably sooner than that left uncovered.

Last year's crop of Potatos occupied about 15 acres: Champion, Magnum Bonum, and Schnolmaster, are the sorts grown, and they looked very promising. Great attention is paid to Cabbages, of which there were breadths in various stages in different parts of the grounds; there were dozens of acres without a plant amongst them that was not true to the variety. During the season the crops are gone over, and a selection of the best marked; when cut the stumps are taken up and planted together for seed. About half an acre of these selected stools are grown on for seed each year. In one place a piece of several acres had I een cleared and again planted with Cabbages; these were from spring-sown seed. Another breadth of 14 acres had been put in after winter Tares, and a space something less was in course of being marketed-an even and weighty crop. Each year a piece of from 6 to 8 acres is grown especially so as to be first in the market, which I understand Mr. Mitchell generally succeeds in by as much as two or three weeks. As may be supposed, these are sent in before they are near the size the later crops are let to grow to before cutting, consequently they are planted closer. I understand that a thousand dozen of this early crop goes to one waggonload. I saw about 6 acres the past spring just as they were heading, and they were nearly a month earlier than any met with elsewhere. From this it would be supposed that some variety with a character for extraordinary earliness was grown, but such is not the case, for after trying the various sorts that from time to time have appeared, Enfield Market is the only kind grown. Mr. Mitchell finds that with his time of sowing and after-treatment it will beat any other variety. Sown as early as the Enfield Market the other reputed early sorts would every plant bolt. Six or seven acres of Cos Lettuce, which for weight and the even description of the crop it would be difficult to surpass, were just coming in.

Some 16 acres of Brussels Sprouts, from autumnsown seed, were at this early period 15 inches high. These were intended to come in early in the autumn, and were planted about 2 feet apart in the rows, which were 2 feet 6 inches asunder. Ten or 12 acres of Savoys had been recently planted. About 8 acres of red Clover had just been cut, with more to follow, and 4 or 5 acres of spring Tares—all heavy crops. Another large piece of Tares was following Wallflowers cleared off in spring.

Of Parsley one might have supposed there was enough to furnish sauce, and to do the garnishing, for half London. Some 6 acres are grown in rows between the lines of Gooseberries and Currants that occupy a space in addition to those amongst the larger fruit trees, and 4 acres more in the open. Sage occupies some 2 acres, and a similar extent of Asparagus is grown in rows 3 to 4 feet apart. There is half an acre of Souvenir de Malmaison Rose, and as much of Sénateur Vaisse and Gloire de Dijon, the latter in immense bushes, with stems nearly as thick as a man's wrist, yielding flowers in such size and quantity as I have not before seen equalled.

It must not be supposed that because so few varieties are grown of any particular thing—often, as will be seen, only a single sort—that it is through a partiality for old favourites, or in ignorance of what in the shape of new varieties is in existence, but simply that after all the so-called improved varieties that make their appearance have been tried they are found not equal to the kinds grown.

There are two things apparent in a well managed London market garden—the cleanly condition of the ground, and the immense amount of manure used. Through the large extent of different crops here scarcely a weed was to be seen; everything vegetable way is grown in rows, that admit of horsehoeing, which, so long as a weed appears, is kept constantly going, with hand hoes to finish the work. Manure is used in vast quantities, much of it from the tram stables, where compressed moss is used for bedding the horses; none where sawdust is employed, neither is the sawdust manure liked. But there are other sources from which the most powerful of fertilising materials are obtained. The London police stations supply Mr. Mitchell, by contract, with the carcases of the stray curs that are unfortunate enough to be taken in charge by Her Majesty's representatives of law and order, and which, after their speedy dispatch by strychnine, are carted to Broadlands at the rate of 1000a week (!) during the summer months,

They are put in between thick layers of hot fermenting stable manure, which material is laid thickly round and on the top, so as to keep down the smell that would otherwise arise; here they lie until fully decomposed, when the whole, bones and all, are carted on and plouped into the land.

From what has already been said, it will be seen that horse-power is more used in the cultivation than manual labour; to favour this the land is laid out in long stretches, but, nevertheless, a great deal of hand labour is required, even in picking the various crops. Much of this is done by women, of whom, during the busy season, from fifty to sixty are employed, mostly well trained active hands. The work is nearly all done by the piece; with some kinds of crops the best hands can earn as much as 7s. 6d. per day, working from about five in the morning until six in the evening. T. B.

SEEDSMEN'S NOVELTIES.

EVERY New Year, as our advertising columns show, come long lists of novelties offered in commerce by our enterprising seedsmen, most of whom, possessing that essential business faculty, sharpness, are keenly alive to the necessity of keeping pace, not only with the times, but also with the requirements of horticulture, As regularly also comes from some one or more of the many horticultural growlers or slow-coaches found in life a wail over the additions thus made to our already large lists of garden products, and because there is thus thrown upon these growlers, though only if they please, the necessity of selecting from the apparently enlarged lists the best, they burst out into a bitter cry against novelties. Just as though all things found in a trade list were not novelties at some time or another. Perhaps some of these growlers find in the "novelty lists" useful pegs upon which at a dull season to hang a sermon that might be more correctly described as a snarl. If no one notices their diatribes they have at least been enabled to let off a little spleen, and to pose in their favourite posture as garden purists, However, these individuals are very small fry indeed, and their wails over the formidable expansion of trade lists will be about as impotent as Mrs. Partington's broom. we doubt very much whether seed lists especially are, after all, so very largely growing. 'Tis true, novelties are being constantly added, and we have no doubt in the honest conviction on the part of the vendor that they are distinct improvements upon some older kind. Thus, when old kinds are superseded they die a natural death, and disappear from the lists; whilst if retained it is certain that they are asked for, and therefore are trade pecessities. growler is too apt to think that because he does not want some kind or other no one else does; but those behind the trade scenes know that the diversity of opinion which exists with regard to the merits of this or that kind or sort is remarkable, hardly any two gardeners being of the same mind. Novelties may not always be improvements, though, doubtless, honestly believed to be so; still, many are, as our existing stocks show; for, let the slow-coaches say what they may, we are, in the matter of quality, fertility, and general excellence, in many thiogs miles ahead of the previous generation of gardeners.

DINNER-TABLE DECORATING.

In this, the busy season of hunting and shooting parties, the resources of a great many gardens, and their responsible chief, are frequently taxed to the uttermost, not, it may be said, in one single department, but in all; and in none probably is the strain greater than in the one devoted to the growing of plants, both ornamental - foliaged and flowering - the demand for these, as many of your practical readers are aware, being greater at the present day than at any previous time of their lives. This, we may say, is in the highest degree encouraging, and for more reasons than one, it is sincerely to be hoped such a state of things may be long-lived. The art of table decorating is particularly agreeable and pleasing to the man of refined taste, inasmuch as it affords him an ample supply of healthy food-if we may use the term-for his imaginative faculties to work upon, and presents him with opportunities of expressing himself by deeds (i.e., so far as floral decorating is concerned), much better than he might be able to do orally or in writing.

To excel in the art, two things are absolutely necessary, viz., good taste, and sufficient material to work with; the first of these cannot be acquired by reading, or by attempts to imitate the work of others, neither can we say how it is to be obtained. We can only define it as a gift and an innate quality possessed by some and not by others. As regards material there is an abundance well adapted for the purpose, both of British and exotic. Those who can command a good supply of the latter have undoubtedly a great advantage over those who cannot, for, by its use, the most elegant, chaste, and telling floral effects and combinations are produced, such indeed as cannot be had-no matter how skilful the operator-with our own native plants, notwithstanding the fact that there are many subjects amongst the latter which are well nigh indispensable to a well decorated dinner-table. For convenience we may say there are three distinct systems of table decorating, strictly speaking-viz. (for want of better names), heavy, light, and medium-each of which affords endless scope for enthusiasts in the art to display their taste and abilities. To carry out the first named in its entirety plants, flowering and ornamental-foliaged, must predominate; cut flowers, leaves and grasses answering for the second; whilst the last named is simply a combination of the other two.

The most common plan of employing plants for decorative purposes is that of putting them in vases and other ornaments, singly, and covering over the soil with moss. In many places, it is true, owing to the limited number of plants grown, this is by far the best course to take; but where matters are left to choice more than to force of circumstances, a decided preference should he given for arranging them in pyramidal groups on circular boards, varying in diameter from 12 to 24 inches. When it is men tioned that eleven such groups would be required for a table large enough to dine twenty-four personsthree large ones along the centre, with four of the small ones down each side-it will at once be seen that an extensive and varied collection of plants must be available for the purpose; otherwise such work, owing to the fact of the great majority of plants having to be turned out of their pots, and, in some cases, the roots and soil having to be slightly reduced, would soon tell its own tale, and result in a state of things the reverse of healthful and vigorous. In the arranging and making up of groups, some little tact and skill, as well as taste, are required on the part of the operator, for unless he has previously studied and fully matured his plans, so as to enable him to see the effect and completion of his work in his mind's eye before it has been begun, there will frequently be both loss of time and labour, and much pulling to pieces and putting together again; it therefore becomes a matter of the highest importance, never to attempt the decorating of a dinner-table in a haphazard or chance fashion, but always go to work with a definite object in view: this we would strongly impress upon the minds of beginners.

For the benefit of those who have not hitherto had any experience in this style of decorating, we will arrange a mixed group in writing, so to speak. As a centre plant take some Fern or Palm of graceful habit, say Cocos Weddelliana: this must not exceed in height 3 feet, better 2 feet; next to this place two plants of Dracæna Cooperi, and two Croton angustifolius, with single stems and well coloured foliage, the points of these to lean slightly outwards, securing them in their positions by wedging a little damp moss about their roots. Four flowering plants are now wanted, and may consist of two each of Lycaste Skinneri and Odontoglossum crispum, the spikes of the latter to be tied into their proper position to neat short stakes, the outside row of plants to be of Adiantum cuncatum and panicum variegatum. by arranging a row of Fern fronds round the edge of the board, half their length resting on the cloth. only now remains to be said that all roots and soil must be covered over with a layer of green, neatlooking moss. We have here a group which has taken something over a dozen plants to form, but whatever time and labour have been expended upon it is more than counterbalanced by the grand effect and noble appearance it has when placed in position on the table.

By way of a change—a very necessary and desirable thing in decorating—only one species or variety, as the case may be, should be used in each individual group. Say, for instance, we have a table requiring eleven, the centre one of the three largest

may be made up of Dracæna Cooperi or D. terminalis, and the next two of Croton angustifolius; of the eight small ones four may consist of young plants of Adiantum farleyense, these to be placed at the corners, and the next four, which must be placed midway between the large ones and slightly outside of the same line, may be made up of either scarlet or white Bouvardias, or of some other choice flowering subject. To complete the arrangement, each group-A. farleyense excepted - should be fringed round with either Selaginella Kraussiana or Isolepis gracilis, and round the three large ones eighteen, or say six to each, small globular glasses of cut flowers and leaves may be placed. It seems hardly necessary to add that a dinner-table decorated in this fashion requires, on the part of those who are responsible, an abund ance of time and patience. Moreover, all groups should be made up in the gardens, and taken direct from thence to the dining-room, to avoid making litter and dirt contingent upon such work where i is not wanted. In direct contrast to the above system is that of cut flowers, leaves, and grasses; the latter to be cut late in the summer months, and dried in the sun-Glyceria fluitans, Carex paludosa, Trisetum flavescens, Holcus mollis, Poa pratensis, Phalaris arundinacea, and Bromus sterilis being amongst the most useful for the purpose. For the dressing-up of epergnes, trumpet-shaped glasses, shallow dishes, and other ornaments, no specific rules can be laid down, so much depends upon individual taste, material at hand, and other circumstances. Notwithstanding this fact, however, there is in the minds of many an ideal standard of excellence which is indescribable in

One golden rule to observe, at all events, is, stringently avoid overcrowding, and everything pertaining to stiffness and formality. We have frequently seen epergnes made up with the most chaste and beautiful Orchids and other flowers literally spoiled through this fault alone. Although we write this in condemnation of overcrowding, we would at the same time counsel the inexperienced against the other extreme; it looks equally had to see anything with a niggardly appearance; such work invariably gives one the idea that "you would if you could," and that there is a lack of material at hand. From the foregoing it is obvious that the "happy medium" is the point never to be lost sight of. A due regard to the proper blending of colours must always be borne in mind, and all excesses in the using of Fern fronds dried grasses, and sprays of climbers must be rigor-ously guarded against. It is only by a judicious use of material, so that one kind shall not predominate over the others, that the best results are accomplished.

When cut flowers form the chief feature, a row of highly coloured leaves of Berberis aquifolia or of the common Bramble laid on the cloth in an unbroken line round the table, will be found to add greatly to the effect, so also will Selaginella Kraussiana arranged in the same way round the dessert dishes. The employment of leaves of various kinds in this way has now become very popular in many places, and in our opinion deservedly so. Where decorating is taken up in earnest and carried out thoroughly, a complete set of shallow tin troughs, made of various shapes and sizes, should be looked upon as a sine qua non, These are filled to their rims with moist sand, and dressed with leaves and cut flowers. Trusses of pink and scarlet Pelargoniums are admirably adapted for this purpose, and when the tins are arranged on the table so as to form various geometrical designs-as they always should do-the effect produced is very striking, and the appearance both pleasing and interesting.

As an arrangement of this kind might prove too formal and monotonous for those who are inclined to be fastidious, something by way of a relief should be introduced. This may easily be afforded by placing at a distance of 3 or 4 feet from each other down the middle of the table a few mounds, made up as follows: -On a 24-inch circular board place an inverted 4-inch pot, on this stand a small well-grown plant of some kind with dark coloured foliage-Aralia Veitchii would be a suitable subject. From the edge of the board to the base of the plant fill in with newly gathered green moss, such as may be found growing under trees in almost every plantation; the surface must be made smooth and even, with a gradual slope from top to bottom; face over with Selaginella denticulata, in which arrange a few cut flowers and Maidenhair Fern. Eucharis amazonica and Gar-denias always look well on a green surface, and are eminently suited for this purpose; coloured berries of

various kinds may also be used; hips and haws are now plentiful, amongst the latter those of Cratægus Azarolus are the most showy: when these are arranged, as they easily may be, into different geometrical figures and designs, they are certainly very attractive, and ought to have a more extended use than they have. A row of Fern fronds placed round the edge of the board will complete the mound. To further enhance the effect of the latter when placed on the table, arches may be made to span from one to the other; these are best made of wire or of long Bramble shoots, round which should be entwined some flowering or ornamental creeper, such as Lapageria alba and rosea, or Cissus discolor. As indoor floral decoration has made great progress during the last few years, and is annually growing in importance, the younger members of the fraternity would do well to bear in mind that in many of the best places proficiency in this branch of gardening is now a very necessary qualification, and one which demands their close study and attention. J. Horsefield, Heylesbury.

GARDENIAS.

FEW flowers are more popular or held in greater esteem than those of the Gardenia, and well they deserve the position they occupy, for besides being well formed and of exceeding purity, they exhale a most delicious perfome, and these qualities reoder them of great value for "buttonholes" or for working up in bouquets. What adds to the value of Gardenias is that they may be had in bloom nearly, or quite, the whole year, as all that is necessary to get them at different seasons is to have a fair stock of plants, with plenty of heat, so that they may be grown on and rested as occasion requires.

As it is best to start at the beginning, I may as well commence with their propagation, which is very easy, provided one has only a nice healthy plant at hand from which to take cuttings. These should be made from the young half-ripe shoots, taken off about 4 inches long. After being trimmed and prepared in the ordinary way by the removal of the lower leaves, and cutting off the base close to a joint, the cuttings should be inserted round the edge of a pot that has been drained and filled with a mixture of peat and sharp sand. The pot containing the cuttings should then be plunged in another a size larger, so as to admit of its being covered with a bell-glass, and if then plunged or stood in strong moist heat in a stove the cuttings will soon strike and he ready for potting singly in the same kind of soil as before. To give them a start and encourage fresh roots a propagating-box or handlight will be found good for them for a week, when any light shelf in a hothouse will suit them; but if they can be accommodated in a Cucumber-frame or a tan or dung-bed so much the better, as there the atmospheric conditions are just what they want, and under the genial moisture their growth will be rapid and strong.

As soon as they have filled their pots with roots, the plants should at once be shifted into others, using good fibry peat and sand, as before. Although peat is best for Gardenias it is not essential, as they do very well in leaf-soil or light fibry loam, or the two mixed, as also loam and peat, but whichever is used it is important to have free and good drainage, that water, when given, may pass quickly off and not sour the ball. If the plants are required for flowering during the winter, they cannot well be too liberally treated in summer, and the thing then is to push them on quickly by shutting up early, before doing which they should be heavily syringed and the walls and surface of the pit or frame they are in wetted, so as to render the atmosphere healthy and moist. continuing this treatment daily during sunny weather, and keeping the plants plunged in warm leaves or tan, they will have attained a large size by the autumn, when to give them a rest the syrioging should be discontinued, and the plants kept cooler by having more air and exposure. This will harden and ripen up the young growth on which the flower-buds form. To get these to open during winter all that is requisite is to subject the plants to stronger heat, and if they can be plunged where they can enjoy a temperature of about 75° at the root there will be no difficulty in inducing the blooms to expand. In cutting great care should be taken not to remove more of the wood with the flower than is absolutely necessary, as otherwise buds are sacrificed, and rather than destroy these in that way it is better to mount the flowers, which may easily and quickly be done by the use of a little fine-drawn wire and moss.

When the plants go out of bloom they should for a time he kept drier at the roots, so as to rest them, when, if they are as large as is wanted, they may be pruned-in a bit and thinned by the removal of any weak shoots, and after this is done shaken partly out, and then re-potted in the same sized pots as before, This done the thing to be aimed at is to get them to break strongly again, which they will do if plunged in mild bottom-heat and kept syringed with tepid in the way already touched on above. Another plan of growing Gardenias-and it is a very excellent one -is that of planting them out; and any one having the convenience for doiog this will find that they will meet with much better results, as the plants, having such an increased root-run and so much more liberty, grow far stronger, and are therefore able to produce many more flowers. When planted-out, a moderately narrow bed or border with a pipe under is the best position for them, but failing this a few bricks may be laid roughly round on the floor of the house and the inner space then filled with rough peat and sand and the plants planted therein. By elevating them in this way, they will be in a more favourable position nearer the glass, and air will pass readily under the

Whether planted-out or in pots, Gardenias are much benefited by weak liquid-manure when growing and blooming, the best being soot-water, and if this is perfectly clear it is not only an excellent stimulant to the roots, but is of great value for syringing over the tops, as it is an excellent antidote against mealybug, which is the most trying and troublesome of all insect pests that affect the Gardenia. For destroying these parasites there is no known remedy equal to paraffin oil, which, if used in the proportion of a wineglassful to 4 gallons of water, and this applied at a temperature of 90°, dissolves the bugs and does no harm to the plants. To prevent any risk of this, it is always advisable to give a good heavy syrioging about half an hour after, so as to thoroughly wash it off and away, and if the plants are in pots it is advisable before using the paraffio to lay them on their sides and so keep it out of the soil. By doing this, not only is it safer, but the plants may be got at better, as they may be assailed at the heads and points of the shoots and under the leaves, and any insects or ex creta from them can be rinsed off and the foliage left clean. J. Sheppard.

WEATHER PRECAUTIONS.

LITTLE capital is needed to set up in the business of weather prophet, and if one happens to fail, as is more likely than not, there are no heavy accounts to settle. Uncertain as we ever are in this part of the world as to what the next forty-eight hours may bring, it still requires no foresight into the future to predict with all but certainty that such weather as we have had almost wholly through the autumn, and especially up to the close of the year, will not continue. With the grass green and growing, Primroses in flower, bulbs coming through the soil, Roses with young growth on them an inch long, and scores of other things that we expect to find at this time quite at rest, all more or less growing and tender, it behoves every one who has a garden to be prepared with the means of warding off the effects of severe frost should the Icy King put in his appearance, for surely many things were never in a worse condition to bear a very low temperature, such as it is possible we may yet have. With many plants that can ill be spared, a little protection often makes all the difference between destruction and little or no

Large specimens of Pampas-grass that have taken years to bring to an effective size, if left to them-selves in exceptionally severe frosts are frequently killed, whereas if the little trouble of tying up their heads and putting some straw round them had been taken they would have escaped. A few barrowfuls of leaf-mould, peat, or ashes, put round the collars of a border of favourite herbaceous plants will usually see them through a severe time, when in the absence of one or other of these inexpensive materials there may be nothing left but dead roots and lamentations. A bed of Spinach or young Cabbages, or a quarter of Broccoli, may often be saved by laying a few Peasticks thinly over them, with a thin scattering of Gorse or Fern, Pea-haulm or branches of evergreens on the Pea-sticks. A few boards in front of the Lettuce intended for spring at the foot of a wall will frequently keep them all right, and make a good deal of difference in the salad supply. The same holds good with many other things, the destruction of which, when it occurs, causes so much inconvenience, and which by a little torethought and keeping the weather-eye open may often be avoided. One important thing is to keep such protecting materials as dry as can be, in which condition they are so much more effectual.

ORCHID CULTIVATION FOR AMATEURS.

ORCHIDS were never so popular, never so generally grown as at the present time, and at no other period since their first introduction to our gardens have amateurs been more anxious for practical information as to their culture than they are at this moment. As to the Orchids themselves, we now-a-days find them everywhere-in plant-stoves, warm greenhouses, and in conservatories, in cold frames during hot weather, and even outdoor cultivation during the summer months has recently been advocated, and under certain conditions practised by Messrs, Backhouse, Smee, and others with some success. What is of especial interest, however, is the lact that many of the most beautiful of all Orchids succeed equally well under quite a variety of cultural conditions, in plant-houses of various aspects and of different structure or of temperature. Indeed, while well aware that separate and properly constructed "Orchid-houses" are undoubtedly best suited for, and most likely to aid us in attaining perfection in Orchid culture, yet we cannot shut our eyes to the fact that specimens of many Orchids of remarkable excellence are to be met with growing in vineries, Peach-houses, Melon and Cucumber pits, and even in warm greenhouses throughout the country. of the best grown plants of Cattleya Dowiana I ever saw was grown in a span-roofed stove house, mainly devoted to the culture of Dracænas and other table plants. The finest of Disas may be grown in a greenhouse from which frost is excluded during winter, and in a cold frame or pit during the summer months.

We must, however, have something besides houses of the right temperature, and that something must be cultivators (be they amateurs or professional gardeners) who have some sympathy with (or, better still, a "bit of a craze" for) the plants they wish to grow. No mere written directions will compensate for cultural watchfulness, or for care and keen observation. It is not sufficient to knownames and native countries, but either master or man (if both, so much the better) must be a keen observer of each individual plant in the whole collection, be it large or small. This was the main secret of poor Spyers' success; no Orchid grower I ever knew had such an intimate knowledge of the behaviour of Orchids under different conditions, and of their individual wants at different times and seasons; and his Calendar, written in these pages, in 1879, remains one of the most remarkable and trustworthy guides on Orchid-growing ever penned, and as such should be constantly referred to by amateurs and others most interested.

The best and most careful of Orchid growers, I notice, are often men who have "sown their wild onts," by which I mean men who have started with "a bit of a craze" about florists' flowers, stove and greenhouse plants for exhibition, or even "hedding out plants!" Success in plant-culture rarely comes except as the result of experience, and not a few failures; hence the names of some of our most successful modern Orchid growers are also the names of men who commenced life with some other 'bee in their bonnets' than a liking for the Orchids they now cultivate so well.

The whole progress of Orchid culture in our gardens reminds us of the swing of a pendulum. At first the main tendency was towards high temperatures; then came the reaction, and the day of "cool treatment;" but at the present time our pendulum oscillates less erratically, and we have reached a "happy medium," under which "the happiness of the greatest number" of Orchids is secured. The various cultural conditions and surroundings are more in unison; all barsh extremes are avoided. Heat, air, light, and moisture are regulated more equally; they work more effectually, and so the general sum of Orchid culture reaches to-day a grand total it never reached before. We have in force now what may be called the temperate system of Orchid culture, the plan under which most Orchids are found to succeed, and now carried out by many of the best of modern

cultivators. If I were asked to point to any one collection as illustrative of the temperate plan it is my purpose to advocate and to describe more in detail in future papers, it would be that of Dr. Paterson, at the Bridge of Allan. The worthy Doctor is an amateur of the first water, and is, I believe, his own Orchid grower, his collection being as remarkable for its variety as for its healthy and floriferous growth. Some idea of its extent and condition may be formed when we remember that in the autumn of 1882 the surplus plants contained in it-many of them fine specimens -realised £800 at a public auction in Edioburgh. Practically this collection has been cultivated with its owner's own hands, aided by members of his own family, and by a "lady help," in the form of an old woman who damps down the houses or attends to the ventilation and stoking necessary. The remarkable success achieved by Dr. Paterson ought to be of some encouragement to other amateur Orchid growers; at any rate, future papers will embody an attempt on my own part to show as plainly as possible how others may go and do likewise. F. W. B.

(To be continued.)

CLOVER AND GRASS SEEDS.

FROM the annual circular just issued by Messrs. Hurst & Son, of Houndsditch, we learn that of English red Clover and Cow-grass there has been quite an average yield; but it is feared the greater portion of the sample will lack colour and boldness of grain; the stocks saved from the first cut-generally termed maiden seeds-show the best colour, and will no doubt command good prices. The produce of the second cut, excepting those few lots that were secured before the showery weather of last summer, will be brown and not well matured. There promises to be a strong competition on the part of fine Continental seeds, and so English red Clover will he had at very moderate prices. Good gennine pedigree Cow-grass is not plentiful. The crops of foreign red Clover, both in France and Germany, have proved large, considerably above the average in both countries, and the samples generally are very fine. seed obtained in the North of France, which, next to home-grown, always commands the highest price in the English markets, is very fine this season, well matured and cleaner than usual. There are conflicting reports as to the character of the American crop; it is believed to be not up to the average; but there are such good crops in Europe, that the quantity of American seed usually taken will not be required, and as the quality is reported to be by no means good, it is expected that present prices will recede somewhat. The smallest crop of white Clover for many years is reported from Germany, consequently prices have gone up to a very high figure; it is, however, very difficult to get a de-finite idea of the crop until the middle of January. The area of production is very large, and threshing does not take place until frost sets in; but it is not unusual to have larger crops of white Clover than were anticipated. Alsike is not a large crop, but some parcels of very fine quality have come to hand. Of Trefoil there are large crops, both in this country and in France, but of poor quality. The French samples from the chalk districts show the best colour, and are commanding prices equal to home-grown. Of Lucerne there is a medium crop of fair quality. French Giant Sainfoin is reported a short crop, but prices are reasonable. In some districts English Giant Sainfoin has yielded well. The French crop of Italian Rye-grass is large, but the quality varies, so much of it being evidently damaged by raio that really fine samples are scarce. Low prices are ruling at present, but it is expected that before the end of the season they will materially advance. The English crop is an average one, the Irish crop a large one, consequently prices rule low. Both in Scotland and Ireland large crops of perennial Rye-grasses have been secured in good condition. Unfortunately, owing to the wet season, the objectionable Holcus has become very much intermixed with all perennial grasses, and the cost incurred in separating it adds considerably to the prices of higher weights, while very few of the lower weights can have it entirely separated from them. As prices are generally very low it is recommended that only the best double-machined samples be secured. Natural grasses are very scarce and dear, excepting Timothy, which

is good and plentiful, and which seems to be steadily working its way into favour as a forage grass in this country. In America it is the most important grass they have. Of other seeds white Mustard is a fair average crop—samples medium, and prices low. Rape is much below the average, of poor quality generally, and good samples now command high prices.

FORESTRY.

TREES AND RAINFALL.—More has probably been said and written upon this subject of late than upon any other connected with forestry, nor is this to be won-

have an affinity for, and draw towards them the vapour from the passing clouds. It now may just as well be affirmed that a pane of glass, a sheet of galvanised iron, or a board of varnished wood, attract moisture hecause we find streams of water running from them when breathed upon in cold or frosty weather. Condensation of vapour is one thing and the attracting it quite another, and very different thing; yet, from the circumstance of not discriminating between the two different phenomena, much has been made to pass current for fact in connection with the subject that should more properly be classed as pure fiction. By way of proof—and I am persuaded any amount can be adduced to show that there is really no special condition between trees and rainfall—the following are given as preliminary examples. Some of

FIG. 1.-THE CORSICAN PINE, P. LARICIO. (SER P. 18.)

dered at when we consider the immense importance of the theme and its far-spreading consequences. It is perhaps more interesting than instructive to hear some of the various theories advanced and methods of reasoning adopted to prove and substantiate them. It is more stoutly maintained than satisfactorily proved by various theorists that trees, woods and forests attract rain and moisture, but that woods and forests do in some way, whether explained or not, improve and ameliorate the climate of a country is evident. That such is the case few if any will dispute or gainsay, but some of the arguments employed to prove and establish this as a fact would be quite inadmissible in proving any other. For example, it is maintained that since by the one fact, that vapour is condensed upon the leaves and branches of trees, and is experienced falling in drops as we pass under them, that therefore the trees

the most bare and treeless districts of Scotland, such as Eskdale Moor, in Dumfriessbire, and the whole of the Cheviot range on the border between England and Scotland, as well as that of the Grampians, are proverbial for rainfall, snow, and Scotch mists. And on the other hand the district including the lower part of Morayshire, to the west, south, and east of the town of Forres, and on through the lower part of Banfishire, though densely wooded, more so probably than any similar area in Great Britain, is yet drier, and less rain falls there than in many districts in the United Kingdom. It may be said, and that truly, that areas so comparatively small as those mentioned can have no appreciable influence in attracting or repelling rain, but if this be admitted then it is to be feared that in an island so so small as ours we can neither afford to plant sufficient areas to produce the desired effects of attracting

rain, nor effect such clearances of trees as to ward it

Some who are very strong believers in the great affinity trees have for rain, can see through their own medium the tops of the trees tapping the passing cloud and the watery elements streaming forth.

Hot and dry seasons in our naturally cold and damp climate are less frequent than is often desirable—for as is pretty well proven cold and wet do more harm in this country than heat and drought. When, however, excessive and hurtful droughts do occur, there is at once a cryraised, loud and plaintive, not to Providence to send rain, but to landed proprietors to plant trees that their magnetic influence may attract rain from the cloud whether it contains vapour or no!

If, however, we have more cold and wet seasons than dry and warm ones, and trees have the supposed influence of producing or procuring rain, in that case instead of planting we should require to cut down, and clear off much of our present woods and plantations.

Although trees, plantations, woods, and forests, have no perceptible influence in producing rain, and the clearing of them no appreciable effect in producing dry weather, yet they have their beneficial and ameliorating influences in a cultivated and civilised country, and what these influences are, and how they are produced, the writer will endeavour to show in a succeeding paper. C. Y. Michie, Cullen House, Cullen, Banf.

FOREST WORK FOR JANUARY.—Press on general planting operations during favourable weather on ground that is either naturally dry or which has been previously well drained. For the most exposed situations select strong well-grown plants, and be careful in planting to direct the best and strongest roots to the most exposed or windy aspect. This is more practicable in pit-planting, but not so readily attended to where notch-planting is pursued. Examine carefully those plantations formed during the autumn, and put firm and in an upright position all plants that have been swayed or knocked about with the wind. In the nursery dig over or trench up plots as they become vacant, and top-dress and otherwise prepare for the succeeding crop.

Nursery ground that has been frequently cropped with forest trees should be heavily manured, and planted with green crop, which will much improve the quality of the soil, and leave it in good condition for seedling forest plants.

A coating of fresh clean earth applied to nursery borders in early winter will be found highly beneficial, and is specially valuable where the ground is limited, and required for immediate refilling.

Continue the thinning of plantations, and cutting and removing of heavy timber in the park or policy grounds. Remove dead or broken branches, especially those alongside walks or drives, as in such places they are often a source of annoyance, as well as dread, to passengers. Complete the pruning and dressing of hedges, and plant up gaps with strong well-rooted Quicks. As the Hawthorn is one of our first plants to break into bud, it should be planted early in the season—indeed, autumn-formed hedges always succeed best, and have a considerable advantage over those formed later on.

The weather has been extremely mild for the season, and already many plants are pushing into bud. A few days ago 1 saw the Broad Bean in full flower, and in the nursery many plants seem to have lost reckoning as regards their flowering season.

Collect all kinds of Fir cones as they become ripe, and store away in a dry airy loft until the sowing season. I cannot remember having seen so plentiful a crop of cones on the new and rarer Coniferæ as this season, and for berries—especially the Holly—they are extra abundant [not so near London]. Towards the end of the month, during open weather and in dry soils, seeds of Beech, Plane, Ash, &c., may be sown.

Prepare heds for seed-sowing next month by digging roughly over, and exposing to the ameliorating influence of the weather. Overhaul and repair fences of all kinds, tree-guards, and rabhit-proof

Gravel and repair walks and carriage-drives; and, as time permits, ground work operations of all kinds, such as levelling, excavating, turf-laying, and road making, may be proceeded with. A. D. Webster, Penrhyn Castle, North Wales,

Prehid Potes and Pleanings.

ORCHIDS AT ST. ALBANS -At Messrs. F. Sander & Co.'s new Orchid nursery house after house has been completed in such rapid succession that it has become a very extensive place, and still three more very large houses are in the course of building. The whole place being worked to a plan, an opportunity is afforded of making it as complete as possible, and up to the latest conceived ideas in every respect-a chance which never presents itself where already existing houses have to be adapted, rearranged, or added to. The houses are all spans, varying from 240 to 300 feet in length, and from 20 to 30 feet in width, each of them being separated from the other by a wide walk between. The houses run from north to south, and are all joined together and protected on the north end by a broad lean-to corridor at the one end, and a spacious and well-fitted shed for potting and other work at the other, so that the visitor can go the whole round of the houses without once going into the open air. Great provision has been made for the storage of rain-water in each house, and in many of the details of veotilation and other matters an amount of skilful economy has been exhibited which might well be copied by others who are about to build. The bottom ventilation of most of the houses is capitally arranged, and will no doubt be greatly fancied by all Orchid growers, as it renders the exhaustion of the pure air in pure air the houses impossible. It is arranged thus :- In the brickwork midway between the ground line and the staging a 41 inch opening (the size of a brick-end) at intervals of 9 inches, is left on the same course of bricks right round the house, so that it is quite perforated to the open air with small openings which equalise the inlet of air and prevents those currents which must occur where large bottom ventilators are put in at wide intervals. There is no means of shutting off this bottom ventilation, neither is it desirable to do so, but in order to qualify the temperature of the air let in, in cold weather, each opening is blocked at the inside end with a brick cut wedge-shaped, thus forcing the air to ascend to a hot-water pipe which runs close to the air openings all round the house. When we consider that the bulk of the Orchids which die are smothered for want of that pure air which they require quite as much at night as by day, this plan of bottom ventilation should recommend itself to all. The rough concrete sides to the beds in the houses, instead of brick, form another noteworthy feature, as it is cheaper than brick and more efficacious in giving off moisture. The fine new Vanda-house is nearly finished; it is 180 feet long and 31 feet wide, the woodwork is of Pitch Pine, oiled and varnished, but not painted, and the fine structure has many improvements which may better be noted when the staging is finished.

All the finished houses are full to overflowing with great quantities of good things, and all in the best of The specimen Cattleya-house (240 feet by 31 feet) contains quantities of specimens of Lælis elegans, with from fifty to three hundred pseudobulbs each-a size hitherto unheard of-Cattleya Percivaliana showing between them over 1000 sheaths with buds up, and soon to prove for itself that it is worthy to class with our favourites; immense plants of C Trianze, also with plenty of buds; numbers of good C. Mendelii, C. Mossize, C. Gaskelliana, C. amethystoglossa, and C. gigas Sanderiana, as well as many fine masses of Lælia purpurata, L. autumnalis atrorubens, and other good things. Then follows another long Cattleya-house for smaller plants, and after that the specimen Odontoglossum-house, filled with over 20,000 very stout and vigorous O. Alexandræ and its hybrids. Alongside are three more houses of O. Alexandræ, so that a total of over 100,000 plants of that kind alone is attained, and all are stated be from the right quarter-a statement which the excellence of the flowers of those in bloom well bears out. The last house is filled with many thousands of O. Pescatorei, O. Rossii majus, &c. Among remarkable plants in bloom are a magnificent form of Oncidium unguiculatum, with the sepals of a clear purplishclares, and the petals prettily blotched with the same colour. The lip is large, and bright yellow, indeed much finer in every respect than the ordinary form; the spike has four branches, which are each again branched. A very fine hybrid Odontoglossum of the O. Wilckeanum section, some distinct pink and spotted O. crispum, a fine white form of L. purpurata, with violet lip margined with white, a new Saccolabium of the S. giganteum class, and the bristling spikes of many white forms of Lælia anceps may be noted. Here also the entire stock of the new hybrid Cattleya calummata (Bleui) will be found. The old nursery is occupied by the Masdevallias, improved plants and things under observation, and it is as full as ever of good things.

CATTLEYA LUTEOLA. - The clear yellow flowers of this epiphytal Orchid present a colour that is of rare occurrence either in this genus or the allied Lælia. It was introduced from Brazil in 1853, and described in the Gardeners' Chronicle, p. 774, for that year. The nearest approach in colour then was seen in Lelia flava, a plant at once distinguishable by its tall racemose peduocle. Lælia xanthioa, introduced six years afterwards from the same country, resembles it very closely, but may be recognised at sight by its being proportionately larger in all its parts, stalked pseudobulbs, and by having a white labellum slightly tinged with yellow on the lower part. C. luteola flowers more freely, and the labellum is of a deeper yellow, marked internally on the sides with a large purple blotch, and white only on the margin. It seems to be known in some gardens under the name of C. Holfordi. A well flowered specimen has lasted for many weeks in the Cattleya-house at Kew.

CYPRIFEDIUM ROBELINI.—This is not one of my own discoveries, but comes from the Philippine Islands, and I give here only the communication which I have from its discoverer, M. Rocbelin. The plants are to be found near the sea, growing on stones, without any shade. The strongest and most compact plants are those which are exposed entirely to the full sun. During their growth they require very much water. M. Roebelin states that be collected this splendid new species on a small island where neither he nor any other collector had ever been before, and which is several degrees distant from the locality of the old C. lævigatum. R. Ffau, Chisveick.

Che Titchen Garden.

ORDERING SEEDS .- Now that the time for ordering the annual supply of seeds has arrived, and with it a goodly number of trade catalogues, it may not be inopportune to indicate a few of the leading sorts which are indispensable in every establishment. Therefore, with catalogue in hand, let us repair to the seed-room and examine the contents of the individual drawers, entering, as the inspection of the stock of seeds remaining in store proceeds, in the catalogue or order sheet, the quantities required:—Asparagus: Connover's Colossal. Broad Beans: Carter's Leviathan and Taylor's Broad Windsor; and in the dwarf and tall sections, Canadian Wonder and Champion Runners. Beet: the Pine-apple Short-top variety may be depended upon as possessing all the essential points of this esteemed root. Broccoli—spring varieties: Brimstone, Chappell's Cream, Frogmore Protecting, Carter's Champion, Cooling's Matchless, Model, and Cattell's Eclipse; for autumn use, Veitch's Self-protecting, Grange's Early White Cape and Early Purple Cape; and lor the present season, Snow's Winter White, Backhouse's Winter White and Early Penzance. Borecole or Kale: Cottagers Dwarf Curled and Scotch. Brussels Sprouts : Aigburth Selected, and Scrymger's Giant. Cabbages: Wheeler's Imperial, Carter's Early Heartwell, and Gilbert's Chou de Burghley, and the Rosette Colewort. Savoys: Drumhead, Dwarf Green Curled, and Early Ulm. Carrots: Altringham and Long Red Surrey are among the best long, and Early Nantes and James' Intermediate the best short-horn varieties. Of Canliflowers the Early London, Dean's Snowball, Walcheren, and Veitch's Autumn Giant, are unquestionably the four best. Celery: Leicester Red and Turner's Incomparable White are excellent varieties.
Capsicums: the Chili, or Cayenne, and Long Red. Endive: Batavian Broad-leaved and the Green and Moss Curled varieties. Leeks: Musselburgh and Carentan. Cabbage Lettuce: All the Vear Round and Grand Admiral for summer, and Hammersmith Hardy and Stanstead Park for winter and spring use. Cos Lettucy: Paris Green and Paris White for summer, and Hicks' Hardy White and Cooling's Leviathan for winter and spring cultivation. Opions for spring sowing: any good strain of the White Spanish. and for long-keeping qualities, James' Keeping, Danvers' Yellow, and Deptford, should be included; for autumn sowing : the Queen, Early White Naples, and Red Flat Tripoli. Early Peas: American Wonder and Sutton's Bijou, from 12 to 15 inches high, are good varieties for early work, either planted in shallow pits or grown in pots; and for the same purpose for sowing or transplanting out-of-doors, Laxton's Earliest of All, Day's Early Sunrise, Ringleader, and William I.; as second early and mid-season varieties we would recommend Laxton's Supreme, John Bull (3 feet high, and having from ten to thirteen Peas in a pod), Laxton's Evolution (a fine new Pea, from 3 to 4 feet high, of the Pride of the Market type), Carter's Stratagem, and Telephone; and the late section should include Veitch's Perfection and Ne Plus Ultra-the latter, in our experience, the best late Pea in cultivation. Potatos-Kidneys: Hammersmith, Woodstock, and International; Round varieties: Champion, Schoolmaster, and Reading Russet. Turnips: Early Purple-top, Munich, Early Snowball, and Carter's Jersey Lily. Tomatos: the Stam-fordian and Acme for cultivation under glass, and the Trophy for out-of-doors. And among Vegetable Marrows and ridge Cucumhers Moore's Cream and Stockbridge are the best.

PEAS AND BEANS .- Noe time should be lost in making a sowing of early Peas in 3-inch pots, three parts filled with light soil. Put nine or ten Peas into each pot, and cover them with soil of the same com-The pots should then be removed to an early vinery or Peach-house, and thence, when the Peas have attained a height of a couple of inches, to a cooler house, where they can be gradually hardened off preparatory to being finally transplanted out-ofdoors next month in a favourable situation. A sowing of William I., Laxton's Supreme, John Bull, Evolution, and Carter's Telephone should also be made out-of-doors in properly prepared ground, in rows running north and south, and 8 or 10 feet apart-the intervening space being planted with three or four rows of Cauliflowers in February. There should also be made a sowing of Carter's Leviathan Broad Bean in boxes, for transplanting in a favourable situation out-of-doors when it is considered safe to do so. At the same time there should be a sowing made in a south border, at 4 feet between the rows. These, like the Peas, will make a succession to those raised in pots and hoxes.

HORSE RADISH .- The present is a good time to make plantings of this useful though much neglected root in the following manner :- Open a trench 2 feet wide and about 18 inches deep; this fill up and raise to the height of 18 inches from the surface with well decomposed dung and leaves, say from an old hot-bed; tread the whole well together, and make up into the shape required; put the line down 6 inches from either side of the ridge, and cover the whole with soil, so as to form a good ridge 18 inches wide on the top, with the centre 3 inches lower than the side and end, forming a kind of basin for the water. In planting, select the second-size roots, and plant them in their entirety with a long dibber in two rows, I foot apart, and 8 or 9 inches asunder in the row, on the ridge, and slanting slightly to the interior of the latter, with the crowns about I inch under the surface. A planting should be made every year, so as to always have a supply good in quality and

FORCING DEPARTMENT. - See that pits and frames in which Potatos, Carrots, and Radishes are growing have sufficient air to prevent them from making a weakly growth. If they are inclined in the latter direction, it will be advisable to draw the sashes off for a few hours on fine days, and to leave a little air on to the frames at night. Shift young Tomato plants into suitable-sized pots. Put a stick to each plant for support, and then put them back in heat near the glass. Where hot-water pits are not provided for forcing French Beans, the seeds had better be sown in the pots in which they are to nod at once. in order to prevent the plants receiving any check subsequently in the process of re-potting. The 8-inch pot is the most suitable size for this purpose. However, in the event of being rather limited in this sizewhich is sometimes the case-it will be necessary to raise the desired number of small plants in small pots or boxes, and as soon as the most advanced lot of

plants have done hearing throw them out, wash the pots, and transplant the young plants into them. See that the supplies of Asparagus, Rhubarh, and Seakale are equal to the demand for the same by introducing batches of the respective roots into heat at intervals of a fortnight or three weeks. II. W. Ward, Longford Castle, Wills.

FRUITS UNDER GLASS.

I UNDERTAKE to write the Calendar of operations in this department for the benefit of those who, from various causes, have not had an opportunity of obtaining the necessary practice to give them complete confidence in their own ability, and in doing so I will endeavour to explain my own experience in a manner which I hope will enable them to derive as much benefit as I have done from the practical remarks of some of those who have preceded me. I may, however, mention that those who look to Calendars for guidance must not expect to find rigid lines laid down that it would be practical for every one to follow to the letter—climate, aspect, as well as structures, varying so much as to make this impossible.

PINES .- No fruit is more constitutionally sensitive than the Pine, or more tardy in showing the injuries it receives from various kinds of neglect. It may, because of the nature of its leaves, receive irremediable injury without indicating for a considerable time any signs of distress. It is, therefore, indispensable to the grower, who is anxious to excel in the cultivation of this noble fruit, that he should at all times have a watchful eye upon the plants under his charge. Pines are too generally carelessly treated when they are suckers. Fruiting plants require more heat than any other section at the present time, and the tem-perature for these should be kept at 70° at night, with a rise of about 5° in the day from fire-heat, with the bottom-heat ranging about 90°. Watering must be regularly attended to, and the plants prevented from becoming dry, as this would cause a check which could not be retrieved; water must, however, be withheld from each plant when its fruit commences to colour. A moderately moist atmosphere should be maintained, and the practice of daily syringing between the plants followed, but avoid damping them over their heads, as this would cause at this season, when little air can be given, an unsightly enlargement of the crowns. Succession plants, which are intended for late summer and autumn use, as well as suckers, must still remain quiet, which they will do if their night heat is kept at from 55° to 60°, with only a proportionate rise during the day, and a bottom-heat of 78°, water should als be administered, and atmospheric moisture created with discretion in this department. Young plants that were shifted into their fruiting pots in the autumn, and which will produce fruits next winter, should likewise be kept at rest in a similar manner to the above. In order to meet a demand for ripe Pines early in the summer, we make it a rule to start on New Year's day a house of plants which have been prepared for the purpose, consisting of Queens, S.nooth Cayennes, and Charlotte Rothschild. former is the most valuable for very early use, but as the others form a succession, such a mixed house is very serviceable. To excite these the bottom-heat is raised to between 85° and 90°, the atmospheric night temperature to 65°, and in very mild weather to 70°, with more fire-heat; in the day no air is given unless the sun runs the thermometer up to 78°, and then it is admitted with care in order to avoid cold draughts. Early closing is studied, and the plants are gently dewed over head early in the afternoon on bright days, and the moisture in the house increased, but not too freely. The plants are all well watered, having been kept rather dry previously while resting, guano-water being used at a temperature of about 85°.

VINES.—At the present time, with the sun so rarely seen, Vines must be forced with care and judgment, for although the weather is unusually mild, exceedingly high temperatures should not be permitted. Those that are fairly on the move, and have broken regularly, will have been fastened into their proper places, so that the process of disbudding can be carefully carried on, as the strongest and best placed shoot on each spur can be distinguished. With gentle syringings early every afternoon, and the maintenance of a steady heat accompanied with a genial

moist atmosphere the shoots will make safe and The night temperature where the bunches can be perceived should be raised to about 58°, and be gradually increased with the usual rise in the day, as the growths lengthen and foliage developes. A house for succession should now receive attention, by being cleansed and closed; the immediate surface of the internal border should be replaced with sound fibrous loam, mixed with crushed bones, wood ashes, and old lime mortar, well broken, which should be trodden down firmly-the horder, it at all dry should be soaked with tepid water, and the rods he regularly syringed two or three times daily until their huds burst. We make it a practice to top-dress our outside horders every autumn, and cover them with a firm coating of dry leaves, over which glass shutters are placed, thus preventing them from be-coming excessively wet and cold, as otherwise they must do, being composed of heavy soil. The cover-ings are removed in spring, after mild weather sets in, and mulchings of cow and horse manure are substituted. The bunches of Grapes still hanging in late houses should now be gathered, with their entire laterals attached, and be bottled. The Vines should be pruned at once, and thoroughly cleansed; apply styptic to prevent bleeding, water copiously, and topdress the borders as above recommended; clean the houses, and put everything in order preparatory to closing them at the proper time.

PEACHES AND NECTARINES.—The continuance of mild weather is very favourable to development in those houses that were closed at the beginning of last month, and the trees are now at the point of bursting their buds. If the present weather continues little, if any, fire-heat will be required at night to maintain them at a temperature consistent with safety. We find that keeping up to 50°, with both the front and back ventilators sufficiently open to promote a beneficial circulation of air, is a suitable night temperature for the present. In the daytime an increase of 5° with the aid of fire, and 10° more from the influence of the sun, every gleam of which should be made the most of by early closing and syringing, is sufficient. The trees should be syringed every morning and afternoon, the pathways and borders damped more or less according to the state of the weather, and the borders, if inside (which are the best for early houses, although they need close attention) examined, and watered if necessary with tepid water. Immediately before the blossombuds expand fumigate with tobacco-paper in order to carry the trees safely through their flowering period without an attack of aphis. I have seen the prospect of an excellent crop severely damaged simply through the neglect of this precaution. A successional house will have been prepared ready for closing before this time, and later ones should have their necessary winter attention without delay. Thos. Coomber, Hendre Gardens, Monmouth.

pants and thein fultune.

GENERAL REMARKS .- Those cultivators of plants who, like ourselves, are located in close proximity to a large town have very many difficulties to contend with, and overcome in every possible case, that our brethren in the craft so fortunately escape when in charge of establishments in the pure air of the country. Never in our experience do we recollect a more trying time for plants under glass than the concluding week of the past year. It was dull, damp, and foggy in the extreme, and the glass on the exterior of all our houses is coated with a thick deposit of soot and blacks, precipitated there during the last few days. So intense is the shading caused thereby that, if we were at once lifted on into the sunshine of summer, we should not require any artificial shading material to counteract its bright rays. We were in hopes that a heavy shower of rain would have intervened to wash away some of this deposit, but up to the present we have been doomed to disappointment; the wind, now blowing from about due east, has dried up the exteriors, causing the blacks, &c., to adhere more tightly than before. If no rain falls within the next few days we shall have to syringe the roofs and then remove the deposit with a hair-broom as cleanly

TEMPERATURES. - During such spells as that we have just experienced we find it answers best to keep the temperatures at the minimum point, is unwise to unduly excite p'ant life such times, ending frequently in exha such times, ending frequently in exhausted vitality and never yielding satisfactory results at in exhausted the hest. A night temperature of from 58° to 60° for the stove proper will be ample, rising about in the morning, then slacken the fire for the rest of the day. The intermediate-house or cool stove will be quite safe at about 5° lower than the above quotations, or even a little less. The greenhouse it will be advisable to keep also at the minimum point; to prevent damage from damp, a little heat in the pipes early in the day will be a good preventive, having at the same time a crack of top air on to let off the superfluous moisture. The use of the syringe can nearly be dispensed with at such times as these in the stove and other like houses; for with a reduced temperature, and no great amount of firing required even to maintain that, the atmospheric moisture will not be so easily dispelled, and some amount of injury may be apprehended if every precaution be not taken. are now keeping the evaporating troughs quite dry, and shall do so for some weeks to come if no frosty weather intervene to necessitate sharper firing. Close attention must be daily given to remove any decaying leaves or flowers before injury is caused to

IN THE GREENHOUSE a sharp watch must be kept against any harm from mildew to the Cape Heaths and other hard-wooded Cape and New plants. Cinerarias will also need close looking after against the same pest, and the sulphur duster brought into use as soon as detected. The operation of watering in all houses will be considerably reduced, of watering in all houses will be considerably reduced, and greater discrimination exercised in the performance of the same, especially with all plants that are not in an active state of growth. Many inmates of the greenhouse (excepting those in small pots) will go a long time without wanting any water. It is not advisable to hurry over this work in any case, but with large specimen plants that have taken years to bring to perfection, it is absolutely necessary to look most observations that continue the condition and requirements before closely into their condition and requirements before water is applied. There are exceptions certainly, in which the watering-can may be freely used, for instance with Tree Ferns, Palms, and such gross feeding and fast growing plants that are brought on to the specimen stage much sooner than in the case of delicately rooted greenhouse plants. To this cause more than any other we attribute the scarcity of many of the finer types of greenhouse plants that were a few years ago to be seen in collections. Where now do we find a well grown Leschenaultia, Acrophyllum, Brotonia, or Roella ciliata? They are few and far between. The present requirements of a greater supply of cut flowers at all seasons has also had its closely into their condition and requirements before between. The present requirements of a greater supply of cut flowers at all seasons has also had its effects in decreasing the cultivation of the choicer hard-wooded greenhouse plants. But we think there is as much pleasure to be derived from a well assorted collection of these subjects as there is in a sorted concerns of these subjects as make it in the other hand, are so planned for the cultivation of fuite, that plant culture is rendered quite subservient to their production, whether amenable to the same course of treatment or not. This is a great unitatke in the long treatment or not. This is a great mistake in the long run, the mix-medley system has brought ruin into many a fine house of Vines by the ravages of the mealy-bug, introduced therein by the plants infested with this pest having been injudiciously removed thereto without a thorough cleansing. Proof of this is abundant in the frequent complaints that are so frequently before our readers of mealy-bug in Vices, whereas not very many years back it was a raitly for even mention to be made of this insect in connection with Vine value. this pest having been injudiciously removed with Vine culture.

MEALY-BUG.—Use every available means, and begrudge not the labour spent on the thorough destruction of this pest; where the utmost is expected in all kinds of produce from under glass, a lar when an incessant warfare has to be waged against when an incessant warfare has to be waged against this exotic insect, which none of us like to see. We are thankful to be entirely free from this pest, and have been so for several years past. It was an uphill fight for a long time, but patience was at length rewarded. Now we can remove our plants into any fruit-bouse without fear of taking the bug along with them. A week or two may be well spent at this season of the year before active growth commences amongst the plants in thoroughly cleansing each and all that are infested. Spare not the plants, whether bushes or climbers, if they stand in the way, or are too difficult to effectually clean, is our advice to all who are troubled with the bug. A fresh state with a clean stock will soon repay for all extra labour and expense that may have been incurred. Fames Hudson, Gunnersbury House Gardens, Acton.

APPOINTMENTS FOR THE ENSUING WEEK.

Monday, Jan. 7 Sale of Liftium aratum Bulbs, at Sevens'
Ross.
Tussday, Jan. 8 Sale of Liftium aratum Bulbs, at Sevens'
Tussday, Jan. 8 Society: Meeting of Fruit and Floral Committees, at 11 A.M.;
Wednisday, Jan. 8 Sale of Hardy Plants and Bulbs, at Stevens'
Annual March. WEDNESCAY, Jan. 9

Sale of Hardy Plants and Bulbs, at Stevens'
Annual Meeting of the Gardeners' Royal
Benerocolar Institution
Servers Rooms.
Sale of Lilum auratum Bulbs, at ProSale of Lilum auratum Bulbs, at ProSale of Lilum auratum Bulbs, at ProSale of Imported Orchids, at Protheroe
Saruraday, Jan. 12

Sale of Imported Orchids, at Protheroe
Saruraday, Jan. 12

Sale of Rooms.

NOW that the question of PLANTING is receiving somewhat of the attention the merits of the case demand, it is important to review the resources at our command. This is more particularly urgent in those cases where the Larch, from one cause or another, is found to be unsuitable. During the last century a very large number of coniferous and other trees have been introduced, many of which, of course, are merely of importance from a decorative point of view. Others are yet too small in size, or too limited in numbers, for any fair estimate to be made as to their qualities for the purposes of the timber merchant. In the case of the Corsican Pine, Pinus Laricio, however, the time seems to have come when its merits and suitability for particular purposes may be gauged with some degree of accuracy. The experience of Mr. Webster, Forester to Lord Penrhyn, has been given in a former issue. Mr. WEB-STER speaks of it in the highest terms so far for its hardihood and its suitability for exposed and maritime situations; Mr. MICHIE, on the other hand, with a more limited experience and under less favourable circumstances, is by no means as warm in its praise. One difficulty consists in the long tap-root produced by the seedling plant which renders the plant troublesome to manage in the early stages, and which must enhance its price in the nurseries. Still, if all be true that is said in praise of the tree by our foresters, this difficulty is more than compensated.

Like all other Conifers the individual plants vary very much, and a whole field of most important observation lies open to the grower to ascertain the differences between these forms. and more especially to note the different qualities of the wood. Every one knows how greatly the character of the wood varies in the case of the common Scotch; it is most desirable, therefore, that accurate knowledge on these points should be obtained. Reverting to the Corsican Pine, we may, without entering into full details, state some of the characteristics which have struck us on personal examination of the trees in various localities. As to the general habit of the tree, it is a fast-growing species in favourable localities, with a tall, symmetrical bole well developed in proportion to the branches, so that the trunk is readily visible between the tiers of branches, while in the Black Austrian (a form of Laricio) the trunk is usually considerably more concealed by the The bark of the trunk is dull reddish or smoky brown, peeling off in thin irregular flakes. The branches, small in proportion to the trunk and loosely disposed, the lower ones spreading more or less horizontally, but upturned at the tips; the upper branches are often thicker and shorter than the lower, and ascending. The shoots of the year are glabrous, either clothed with young leaves all the way down, or naked for a short distance. The young wood is of an olive or chestnut-brown colour, the buds ovoid-conic, with a long point, reddish, and not very resinous. The leaves are in pairs, about 4 inches in length, rather slender, dark green, with resin canals scattered through the central tissues of the leaf, as may be seen by microscopic examination. The male catkins are ovate, greenish-yellow, the scales of the anthers marked with a purplish-violet spot. The cones are about 2-21 inches long, by 11 inch broad, ovoid-conic, chestnut-brown, or in some cases duller; the blunt end of the scale (apophysis) narrow, transversely elliptical acute, with a small four-sided pyramidal shining projection or "umbo" in the centre, tipped with a minute point (see fig. 1, p. 15).

The species is widely distributed in the mountainous districts of Southern and Eastern Europe and of Western Asia, and various forms have been described, most of which are in cultivation in this country. We have notes of most of these, which we shall probably mention on another occasion; it may suffice for the present to say that they are all reduced by PARLATORE to three varieties-(1) tenuifolia, including forms with slender, paler, and less rigid leaves than the type. Of this division the best known in this country is the form known as Laricio pyrenaica, which must be carefully distinguished from the true pyrenaica, which is quite a different thing. Laricio pyrenaica may be distinguished by the very bright orange-brown colour of its young shoots. In habit it is more frequently branched from the base than the type, so that the clear bole is shorter than in the type, and more concealed by the foliage, and leaves are longer. The young shoots are clothed to the base, the buds pale yellowish-brown, acuminate. There are other marks of distinction, which we may refer to on another occation, which we may refer to on another occasion. The variety (2) nigricans has shorter and more rigid dark green leaves. The most marked form of this is the Black Austrian which does so well by the sea, and which we have already figured, and to which we shall have again to refer. PARLATORE also includes under the variety nigricans sundry other forms, such as Fenzlii, Heldreichii, taurica, &c., which, no doubt, are mere forms, but which may be distinguished in our Pineta by marks which we shall mention at another time. Lastly, there is the variety (3) Pallasiana, with leaves as in the preceding variety, but with larger cones. To this belongs the form Laricio Pallasiana, of which we have already given an illustration. Unfortunately nothing is known at present as to the relative value of the timber of these varieties; the first thing to do is to point out the distinguishing characters of the trees in growth, and this we propose to do in subsequent articles. In the meantime we may say that all the varieties have the same leaf structure as that already mentioned.

-GLASGOW BOTANIC GARDEN. -- Our centre illustration (fig. 2) represents a fine plant of Musa Ensete in one of the new houses of the Glasgow Botanic Garden. As a decorative plant the Ensete, or Abyssinian Banana, takes first rank, its noble foliage at once arresting attention by its boldness of form and by the rich red colour of the midrib. As a contrast to the lace-like fronds of Tree Ferns, or the feathery foliage of Palms, nothing can be more striking, and it is specially well adapted for what is now called sub-The Ensete differs from all the tropical gardening. other Musas in having a capsular, not a fleshy fruit, on which account it is less valuable as a fruit-bearing plant than many others. Great additions have been made to the Glasgow Botanic Gardens recently, and various changes made, with a view of enhancing its value as a botanic garden, presided over for several years by the late Sir WILLIAM HOOKER. We hope at an early date to give illustrations and full details as to the new buildings in the garden.

- THE ALMANAC. - We are in doubt as to whether the Welwitschia has ever before been made to do duty as part of a conventional device, though that it is not unfitted for the purpose may be seen from the legend-bearing scroll at the top of the Almanac given with the present number. The Welwitschia remains, perhaps, the strangest production introduced into European gardens, though it must be said that it is in museums that one must look to see the oddity in its full proportions. The garden, how-ever, has served to dispel one mistaken notion as to this extraordinary plant. From the examination of adult dry specimens, it was concluded that the single

pair of gigantic leaves that the plant produces were to be considered as the seed-leaves, or colyledons, persistens, and enormously increased by age. not so, however. We remember to have been shown the seedling plants at Kew by Messrs. Nicholson and Lynch, some time before Mr. Bower described the mode of germination, and previous to the publication of the illustrative drawings in our pages by Chevalier MONTEIRO. The association of the Welwitschia from the Transvaal, the Lapageria from Chili, the brilliant Anthurium from New Grenada, the Lilies from Japan, is a fair representation of the cosmopolitan tendencies of British gardeners. So far as nationalities go, at any rate, gardeners are not particular; and even as to other matters, although he may have his preferences, the gardener should not allow himself to be swayed by his antipathies, nor forget that the meanest weed that cumbers the ground is a document as precious as any Moabite stone to those who can read it. The Calendar contains a list of the usual horticultural appointments up to date. The mean temperature for each day of the year is that adopted by Mr GLASHIER, from the revision of the long-continued observations of the late Mr. ROBERT THOMPSON, at Chiswick.

THE VEITCH MEMORIAL TRUSTEES have decided to allot the following medals and prizes during the present year (1884), viz. :- I. A Veitch Memorial Medal and prize of £5 for each of the following subjects-(1) The best specimen Orchid in bloom; (2) the best stove or greenhouse plant in bloom; (3) the best dish of two bunches of Grapes, one variety. These to be offered at the Dundee International Show, which takes place on September 11-13. II. A Veitch Memorial Medal and prize of £5 for-(1) The best specimen Orchid in bloom; (2) the best stove or greenhouse plant in bloomthese to be offered at the Royal Botanic Society's Show on May 21; and for-(3) The best dish of three bunches of Grapes, to he offered at the Royal Botanical Society's Show on June 18. III. A Veitch Memorial Medal and prize of £5 were also placed at the disposal of the respective committees of the National Auricula Society (Southern section); of the National Carnation and Picotee Society (Southern section); and of the committee having charge of the National Dahlia Show. These prizes are only eligible to be competed for by amateurs and bona fide gentlemen's gardener s.

- IPOMÆA THOMSONIANA.-We are informed that this plant, which we figured in our last, has been in the country some years, and that Mr. B. S. WILLIAMS has a stock of it, which he intends to distribute this year. The stigma, as we suspected, has two rounded lobes, though not so shown in the illustration.

- THE FIRM OF BARDET BROTHERS, 472, Senator Street, Warsaw, was mutually dissolved on December 20, and Mr. FREDERICK BARDET is now sole proprietor.

- CATTLEVA PERCIVALIANA .- This lovely winter flowering Orchid now being established among us promises to be one of the finest things recently introduced, producing, as it does, its neat rose-coloured flowers with their intense blue tinted crimson labellums at this season. It is one of Mr. SANDER'S happiest introductions. At Mr. Percival's there are many fine plants of it in bloom, and we have before us a lovely spike of three flowers from Messrs. IRELAND & THOMSON, of Edinburgh,

- TRYING IT ON .- Secretaries of horticultural societies are receiving a printed circular emanating from a seed firm in Glasgow, which informs them that, in conjunction with a seed grower of Erfurt, Germany, they are prepared to offer at the summer or autumn show of their respective societies in 1884 certain prizes for the best blooms of Stocks and Asters, twelve of each, "grown from our seeds," and they offer the large sum of 15s, in two prizes for twenty-four blooms, and then follow certain conditions, viz., "The Stocks and Asters exhibited for these prizes must be grown from the collections of our Stock and Aster seeds (which are marked for this purpose in our catalogue, 1854), by members of the society, or in the society's district. A ticket of qualification for competition for these will be furnished with the seeds, which ticket, being simply numbered,



Fig. 2,-musa ensete in the glasgow botanic garden. (see p. 18.)

must, to prevent any mistake, and as a qualification for competition, be laid down, clearly visible, during the show beside the flowers exhibited." Thus far, the Glasgow firm is simply following the lead of some London and provincial seed bouses, but they are found travelling a little beyond the scope hitherto allowed, inasmuch as they make it a further condition that the "printed schedules of the society giving the particulars of our prizes" state

"for the best blooms of Stocks and Asters," &c, "(actalogues with particulars free on application); "also that the schedule be sent to use arily after publication." And now comes the climax! In the communication to the secretary there appears this paragraph:—"We shall be glad to send you (carriage paid) any number of our catalogues for distribution you may be pleased to mention;" and all this—advertisement, advertising agency, distribution of catalogues,

&c.—for the munificent sum of 15:.! How many secretaries are likely to be enticed by this? Horicultural societies of all kinds are largely made use of for trade purposes, but that the secretary should be made a gratuitous distribution agent is a little too strong a dose for a useful body of men to swallow. It will be noticed that not an extra penny is offered by this enterprising firm towards the cost of printing their prizes, or circulating their catalogues.

— CHOISVA TERNATA.—The market growers of cut flowers are taking up this plant for blooming in summer. Let it be stated that it will not force, but requires to be grown and flowered in a cool-house. The Continental nurserymen appear to be managing this plant remarkably well. A few days since we saw a batch of nice little bushy specimens that were well grown and appeared to have set their numerous flowerbuds in the most satisfactory manner.

— LILIUM CANDIDUM.—It is surprising to what an extent this plant is grown for forcing purposes and for flowering in the open air. Mr. JOHN KREVES, at Acton, calculates that he has about 10,000 plants, a large number of them in pots, and these are introduced to heat ic successional batches, and flowers are had from January until such times as the plants bloom naturally in the open ground. At the Whitsun season there is a large demand for white Lilies for church purposes, and it has happened that the spring has proved so early and Whitsuntide so late that the white Lilies in the open ground have bloomed and decayed before the date for holding the festival.

- DUNDEE HORTICULTURAL ASSOCIATION .-The following is the programme of this Association for the present year :- January 4: Opening address, the President; Special Exhibition of Chinese Primroses. February 1: "Ben Lawers, its Geology and Botany," Alexander Hutton, F.L.S., Arbroath; Special Exhibition of Cyclamens and Vegetables. March 7: "Insectivorous Plants," Robert Lindsay, Curator, Royal Botanic Gardens, Edinburgh; Special Exhibition of Cinerarias and Fruits. April 4: "Scottish Alpines," Rev. W. W. Peyton, Broughty Ferry; Special Exhibition of Hyacinths, Tulips, and other Spring Flowers. May 2: "Hardy Fruits," P. W. Fairgrieve, The Gardens, Dunkeld House; Special Exhibition of Narcissus, Hardy Primroses, Polyanthus, &c. June 6: "The Leaf," part 2, the Hon. President; Special Exhibition of Auriculas and Pelargoniums.
July 4: "Notes of a Tour through the London Nur-William Allison, Seaview Gardens, Monifieth; Special Exhibition of Roses, August 1: "Scandent Plants," John Stewart, F.B.S., Arbroath; Special Exhibition of Lilies and Hardy Border Flowers. September 5: "Some Poisonous Plants," J. S. Crichton, M.D., Arbroath; Special Exhibition of Dahlias—Single and Double. October 3: "Some of the Physical Conditions of Plants," Frank W. Young, F.C.S., Dundee; Special Exhibition of Apples, Pears, and Plums. November 7: "Peach Culture,"
A. M'Kinnon, The Gardens, Scone Palace;
Special Exhibition of Hardy Autumn Flowers. December 5: Annual General Meeting; Special Exhibition of Chrysanthemums. These meetings will be held in the Young Men's Christian Association Rooms, 10, Constitution Road, at 7.30 P.M.

LYCOFODIUM CLAVATUM.—Surely it would be worth the while of some enterprising person to obtain at the Christmas season, if it were possible to do so, quantities of this handsome Club Moss of Scotland for decorative purposes. The long, handsome tresses are well suited for the purpose, and so durable is it that it deserves to be classed among the everlastings, hanging in a dry state for years. It grows on the mountains of Scotland with great luxuriance, and doubtless it could be obtained in large quantities. It is too dry in this country for the cultivation of this truly handsome moss, else it would, no doubt, be largely grown. Some fine examples were sent southwards to Mr. A. F. Barron at Christmas.

— A CHARMING FORECOURT GARDEN IN WINTER.—This was seen in one of the more fashion-able thoroughfares at Chiswick on Chistmas Day. A detached mansion, with the front entrance in the middle of the house, afforded space for two panels of forecourt gardens, with an ornamental tile walk leading from the road to the front door. In both these panels the beds were uniform and margined with stone. They were planted with specimen hardy evergeren plants, but wide enough apart to display each fully to view. The whole was carpeted with Ivy, which had made a dense growth and formed a perfectly even groundwork of dark olive-green, which did not in the least degree hide the outlines of narrow, well-kept graved paths. The variegated Aucubas and Hollies looked quite bright against the dark groundwork; and though darkness and fog were overhead and around, there was a colour and a cheerfulness

about this arrangement in contrast with which dismantled forecourt gardens close by, with their ruined beds and decayed fragments of bedding-plants looked very melancholy indeed. The window-sites on the outside of the windows were also filled with boxes of Ivy, and so the furnishing appeared to be complete; and there is this advantage about an arrangement of this kind, that it is cool in summer and cheerful in winter; and while rain disfigures the flowers used in ordinary flower-beds, the evergreens are brightened by passing showers, which cleanse the leaves of any sooty and dirt deposits. Some may think that such an arrangement partakes too much of sameness, and were this true it yet possesses advantages that more than counterbalance these.

THE WEEK .- The death of Mr. SPEED, of Chatsworth, is marked by additional pain, owing to the dreadful circumstances under which it took place. We only received the intelligence in time to announce the fact in our last issue, though too late to allude to the circumstance in our brief summary of the principal events of the past year, but we now refer to a fuller notice of his career in the obituary notices of the present number, where will also be found an intimation of the death of that much-respected nurseryman, Mr. B. MALLER .- A company is to be formed to work the China-grass or Rheea (Boehmeria nivea), by a process devised by Professor FREMY, and which demands neither skilled labour nor plant of any kind. The fibre, it is asserted, can be produced at half the cost of Flax, at the same time that the Indian cultivator would secure a larger profit than from any other crop. The preparation of the fibre so as to clear it from undesirable material is a signal instance of the value of chemical and botanical knowledge, and of their importance when applied practically. Supposing the assertions now made prove only half true, we have in the application of Rheea fibre a source of industry hardly second in importance to Cotton itself. The proposals emanate from the Lini-Soie Syndicate, Gresham House, Old Broad Street .- A correspondent suggests that we should set apart space exclusively for the contributions of foremen and under-gardeners, Such contributions, he points out, would be useful in developing latent talent, and would bring to light a large amount of practical knowledge. The suggestion is a good one, but our correspondent must be well aware that we are always anxious to secure communications on practical details of culture and observation from any trustworthy source. communications are always welcome, but considerations of fitness and space, such as must, of course, he left to ourselves, must influence us in the selection of what shall be published. It by no means follows that, because a particular communication is not inserted that it is necessarily inferior. It may be kept out by a variety of considerations, which only those familiar with the exigencies of the Editorial department and of the printing office can appreciate. One objection to the present state of affairs is that we meet with the same writers in all the horticultural journals-a fact which tends to show that the supply of competent writers is more limited than it ought to be. -For the first time within our remembrance we have received a report of the Oxford Botanic Garden, and in so far an interregnum seems to have advantages over a regular government. The chief features of the report before us deal with the herbarium, which has recently been enriched by the donation of several thousands of specimens, formerly the property of the late Mr. WILLIAM BAXTER, whose services to British. and especially to Cryptogamic botany-great in their time-will now fructify in the future. Mr. BOSWELL and Mr. DRUCE have done good volunteer service in the herbarium. Physiological lectures have been delivered by Mr. Chapman during the year. As to the garden itself, but little is said beyond the record of the flowering of Agave americana and the variegated variety. In both cases the flower-stem attained a height of 24 feet. The plants are believed tobe about ninety years old. Botanists are looking with much interest to the forthcoming election to the Professorate by recent alterations endowed with a sufficient income. Let us hope that while the teaching of Botany in Oxford shall at last be put on a footing in accordance with the requirements of the times, the old Botanic Garden may be made to fulfil its proper office.-A rival to the Eucalyptus is announced from Tonquin. It is called in Tonquinese "V-dizi," and is stated to be, not only a food plant. but one serviceable in destroying miasma and purifying water. The V-dizi is used as ten, while the seeds boiled in water afford a refreshing beverage. The plant grows to a height of 6 feet and upwards near streams and pools. The Agri-Horticultural Society of Madras is making inquiries as to this V-disi, and we trust they may be successful.

- ERYTHROTIS BEDDOMEt. - The trailing or prostrate stems of this pretty Spiderwort, known in some gardens as Cyanotis kewensis, render it interesting and desirable as a plant that can be employed in various ways for basket-work, the front row on the staging, or even to cover the surface of large pots where the plants grown do not hide them. The leaves are fuscous and hairy on the upper surface, of a bright red below, and all arranged on one plane or nearly so, showing in the aggregate the upper and under surfaces respectively. The small blue flowers with their curious bearded stamens open successively on the tip of the shoots, and are not uninteresting. may be seen in the stove at Kew grown as a basket plant, and is figured in the *Botanical Magazine*, t. 6150, under the name of Erythrotis Beddomei. The Genera Plantarum refers it to the section Dalzellia, and describes it as a remarkable species differing from the normal section in having its petals distinct to the base (not connate) and without claws. The whole section also differs in habit and inflorescence, but is closely connected by the ovules and

— ROYAL HORTICULTURAL SOCIETY OF IRE-LAND,—The following are the dates fixed for the shows of 1884 in Dublin, viz.:—Thursday, April 17; Thursday, May 15; Thursday, July 3; Thursday, August 28; Thursday, November 20.

CHINESE PRIMULAS,—From Mr. B. S. WILLIAMS we have received some blooms of the various fine strains of Primulas with which his name has been so long identified. The whites and reddish-purples, by their yearly improvement in shape and substance, prove careful selection on the part of the grower, and are different things from what we used to grow years ago under the same names. The strain of fimbriata alba identified by the name of magnifica is in every way a good one, and worthy of high praise. Chiswick Red, which Mr. WILLIAMS also introduced into commerce, is finer than ever, and has a purple ring round the cye, which we do not remember to have seen in the original flowers.

-- THE WEATHER.-General remarks on the temperature, rainfall, and duration of bright sunshine, for agricultural and sanitary purposes, during the week ending Dec. 31, 1883, issued by the Meteorological Office, London :- The weather has been fair in Scotland, but dull in Ireland and England, with thick wet fog over the eastern, central, and southern districts. The temperature has been above the averdistricts. The temperature has been above the average in all districts excepting "England, E.," the deficit varying from 1° to 3°. The highest readings were recorded either on the 25th or 29th, when the thermometer reached 51° in "Scotland, E.," 54° in "Scotland, W.," and 55° in Ireland. The lowest readings was believed do in the additional of the week has were observed during the early part of the week, but no severe frosts were registered. The rainfall was less than the average in all districts. Over England the fall, which was very slight, was in the form of thick, misty drizzle. The bright sunshine amounted to 20 per cent. of the possible duration in "Scotland, " and " Ireland, S.," but was very deficient everywhere. In "England, E.," and "England, N.W., there was none at all. Depressions observed :- During the greater part of the week an anti-cyclone has lain over our islands, and the winds have consequently been light, and somewhat variable. On the 28th and 29th, however, a series of depressions skirted our extreme western and northern coasts, occasioning moderate to strong southerly winds in Ireland and Scotland, with some rain.

— GARDENING APPOINTMENTS.—Mr. HENRY BIRCH, lately Gardener to Baron ROTHSCHILD at Waddesdon Manor, as Gardener to the Maquis of NORTHANPTON at Castle Ashby, in succession to the late Mr. GBOGGE BEECH.—Mr. C. J. GOLDSMITH, lately Gardener at Sandhills, Eletchingly, Surrey, as Gardener to C. A. HOARE, Eq., Kelsey Manor, Beckenham, Kent.—Mrs. DAVIES, Foreman at Enderby Itall, Leicester, has succeeded Mr. G. A. DRUMMOND as Gardener at that place. Mr. DRUMOND has gone into business in the village of Enderby.

The Arboretum.

THUIA OCCIDENTALIS VERVAENEANA.—This is a singularly beautiful variety of the American Arborvitæ, and one, too, that possesses a good habit and constitution. The slender branchlets during the growing season are tinged with a deep golden-yellow, which in winter changes to a brownish-orange. This variety, one of the most distinct of the very numerous garden forms of Thuia occidentalis, originated some years ago in the nursery of M. Vervaene, at Ghent. Some specimens of it at Kew are amongst the most conspicuous objects in the collection of Thuias, &c., in the Arhoretum

THE GOLDEN CATALPA.-The golden-leaved variety of the Indian Bean, or Catalpa, C. bignonioides var, aurea, is well worth the attention of planters, The foliage, even when mature, is a decided rich golden colour, and, moreover, it does not scorch readily, as is the case with several golden-leaved variations from green-leaved types. In fairly rich soil, under conditions which suit the type, this grows freely, and soon forms a very attractive object. It is evidently a form of recent origin, as neither Loudon nor Koch make any mention of it. Will any of our readers communicate their experience of this tree?

BERBERIS ARISTATA,-At Kew there is a clump of this Indian Barberry which at the present time is although leafless, very conspicuous, by reason of the deep orange-red colour of the branches. Planted in a mass it certainly produces a good effect, and is worth growing for the bright colour of the bare twigs and branches. It is a most variable species; in this respect it is not surpassed by our European B. vulgaris. a native of temperate Himalaya, at elevations of from 6000 to 10,000 fect. The flowers are produced freely enough during the summer months, either in simple racemes or umbels or in compound racemes, and vary in different individuals from clear pale lemon-yellow to an almost golden tint. The fruit, too, differs a good deal both in colour and size, some specimens at Kew bearing black fruit, and others red ones double the size. The variety micrantha seems the hardiest of the Indian Berberries, and is well worth a place in the select shrubbery.

MAHONIA GLUMACEA.-This pretty dwarf evergreen is thoroughly deserving of a place in the front of the shrubbery border or in a nook of the rockwork. The dark green of the leathery pinnate leaves and the red colour of the leaf stalk make the plant and the red colour of the least stalk mase the plant conspicuous enough during the winter months. It bears its bright yellow copious spikes of blossoms, which are beautifully nestled in the foliage, in the very early spring. About sixty years have clapsed since Douglas sent seeds of this species to the Horticality of Society by whom plants were liberally districultural Society, by whom plants were liberally distri-buted. At the present time, however, it is far from common, although worthy of general cultivation. In a wild state it occurs in shady Pine forests along the Pacific coast from Monterey to Vancouver Island. A good fegure of the plant anneared in the Balancial good figure of the plant appeared in the Botanical Magazine, tab. 3949.

PLANT LIFE .- It has been shown by Professor Schubeler, a Norwegian plant-geographer, that most plants in high latitudes produce much larger and heavier seeds than in warmer regions nearer the neaver seeds that in wanter regions because equator. This effect he attributes to the prolonged influence of smallph during the long summer days of the high latitudes. The difference of seed development was very remarkable in some cases. Dwarf Beans taken from Christiania to Drontheim—less than Beans taken from Christiania to Drontheim—less than 4° further north—gained more than 60 per cent. in weight; and Thyme from Lyons, when planted at Drontheim, showed a gain of 71 per cent. The grain of northern fields is heavier than when grown in more southerly localities; and seed from Norway planted at Breslau decreased greatly in the first year. The leaves also of most plants are larger and more deeply coloured in higher latitudes, as was first noticed by Griesbach and Martins. The same is true of flowers, and many which are white in the southern climates become violet in the far north. While on this subject of the changes in flowers, it may be mentioned that a chameleon sort of flower which grows in the United States is white in the morning and red at the United States is white in the morning and red at night. It has been named the Consederate Rose, on account of its blending these two beautiful colours. The plant is odourless, it grows in great bunches, and is susceptible of a high degree of cultivation.

VEGETABLE PRODUCTS OF SIENA, ITALY.

THE following notes on the products of the province of Siena, Italy, have been furnished in a Government report by Mr. Consul Colnaghi, Writing on the Vine, he says too many varieties are cultivated in the province, but that there has been an improvement on this point of late years, and in new plantations the following qualities predominate:-Black Grapes: San Gioveto Canaiola, Mamniolo; white Grapes : Trebbiano and Malvasia. Throughout the province the black qualities known as Gorgotesco and Prugnolo arealso largely cultivated. The soil of the province being very varied, both topographically and geologically, the method of cultivation differs much in the various localities. In some places the Vine is attached, or "married," as it is termed, to trees, most frequently the Acer campestre, planted in rows along the fields, and pruned "a paniera;" in others they are grown low, and fastened to stakes. The plantation of vineyards on the French system, instead of growing the Vines in the fields with other crops, is on the increase, but, generally speaking, the latter method prevails, which accounts for the small yield of Vine as compared with the large area under cultivation. For planting Vines in rows in the fields trenches 1.20 metre in breadth by 1.20 metre deep are dug, the drainage being effected by means of a layer of stones or of fascines. The trenches are filled in with earth, and planted with slips or layers which have already thrown out roots at intervals of 60 to 70 centims. for low Vines, and of some metres for plants intended to be attached to the trees. The ground requires to be dug up and hoed every year, and manured every two years, or else Lupins are sown and dug in. The vineyards on the French system are dug up in the spring, and manured in August. The plants are laid down in ground well broken up, generally to the depth of 1.20 metre, the largest stones in very stony soil being selected for drainage, or to form terrace walls on the steeper hillsides.

The Olive is cultivated to a limited extent only on the hills of the "Cute," In the Val di Chiana it is grown in plantations, elsewhere the trees are generally planted in rows along the fields in combination with other cultures. There are three principal varieties grown in the province. The trees are raised from slips cut in the spring, and they are planted in holes in ground that has been well broken up, covered with mould and watered as required. The hardiest shoot is subsequently, and may be permanently, planted in three years. The Olive is also raised from seed. In the district of Siena when a tree is about to be cut down the "eyes" on the roots are detached and placed in a separate plot of ground, plants being obtained from them in three years, which can then be transplanted. In the wooded districts, where the wild Olive is pleatiful, grafting is commonly employed.

The trees are usually planted in holes or ditches of more than 2 metres square and 1 metre deep, drained with a layer of stones 20 or 30 centims, deep. the Olives are planted in rows in the fields they are generally pruned a paniera, nearly all the inner branches being cut away from the centre to enable air and light to penetrate freely. The trees are pruned every two or three years. The most careful cultivators apply a special manure when the trees are between the ages of five and eight years, composed of straw mixed with woollen rags, the whole saturated and moistened with sewage; but this custom does not appear to be general, the trees profiting by the

not appear to be general, the trees profiting by the manure laid on the fields.

The yield of oil is abundant, and the quality generally good. In some parts of the province, especially near Siena, it may be doubted, however, whether this culture is really remunerative, owing to the capriciousness of the climate. In the Chianti oil is a

capriciousness of the climate. In the Chianti oil is a principal product, and the quality is excellent; that of the Val di Chiana is somewhat inferior. The Olive prospers in the district of Montepulciano. Under the head of fruit trees we read that an improvement has taken place in the production of fruit, but that it is not so great as could be desired. The principal obstacle to the progress of fruit culture in Tuscany is the fact that the varieties generally cultivated are few. The principal futils grown in the vated are few. The principal fruits grown in the province are Apples, which give a good yield; Pears, Apricots, Peaches, Pluns, Cherries, Almonds, Japanese Medlars, and Walnuts.

Home Correspondence.

Plants in Flower at York .- The number of Plants in Flower at York,—The number of plants in flower in the open ground in our nurseries during the past week (25th to 31st, inclusive) has been unusually large; about seventy species have either been gathered or distinctly noted in bloom. For some time past the weather has been mild and foggy, with comparatively little rain. The species in flower were as follows:— Daisy, double white and red Myosotis dissitiffara Roses, several Hepatica triloba, blue and pink

Crocus biflorus , Sieberi Botryanthus pallens " compactus Pansies, many vars. pink , angulosa Rhododendroo dauricum Stocks, red and white Cyclamen Atkinsii (ibericum Geum minimum Centaurea montana Doronicum caucasicum Chrysanthemums Stenactis speciosa Aubrietia græca album)
Daphne Mezereum autumnale Stenactis specios
Authretia greca
Colchicum automore, fl.-pl.
Dianthus tymphrestos
Linum percone
Anemone hortenis
Indigeos
Samiona midforum
Samiona midforum
Samiona midforum
Geranium sanguineum
I. Endresi
Aster horizontalis
Parachetus communis
Parachetus communis
Memiesta (Dabucen) polidola
Indigeos
Linum sanguineum
I. Endresi
Aster horizontalis
Parachetus communis
Variantis
Varian Fioniana Cerastium montanum Erica Maweana Gentiana verna Symphytum tauricum caucasicum
Christmas Roses, niger altifolius, niger angustifolius,
orientalis, atrorubens, corviola stavis
Errica carnea
,, tetralis
Pyrethrum parthenium
Anthemis tinctoria
Wallflower, yellow and brown
Primtoes, double bilac, single
white and red, and the
wild continued to the single white and red, and the

wild one

folius, niger angustifoli orientalis, attorubens, c sicus
theris sempervitens
Tussabago fragrams
Tussabago fragrams
Tritoma uvaria nobilis
Arabis procurrens
Chrysanthemum lacustre
Fotenutan diffora
Escallona in urcantha
Clematis (large-fl wered)
Veronica Alloni
Armeria plactaginea
Vince minor

1 acutiloba
verseries. Vark. Decemiraries.

Tas. Backhouse & Son, Nurseries, York, December 31, 1883.

Anemone fulgens .- I cannot remember noticing the Anemone flowering at this season of the year so far north as at Vork. It is now doing so on the rockwork. The tubers planted in the open beds (where they have not been disturbed) are unusually forward this season, and promise a brilliant display in spring. Anemone blanda is also finely in blossom.

The American Summering Apple.—I think Mr. Murdoch will find the American Summering Apple in Leicestershire; at Woodhouse, near Loughborough, it used to be quite common, and I believe there are trees of it there still: it is an excellent early there are trees of it there still; it is an exceinent early table variety. The Eve Apple used to be grown at the same place, but I have never seen it elsewhere; it is a small dessert Apple, very highly coloured, and of good flavour, flattish in shape, not unlike a Court Peadu-Plat in miniature. I think they are both what may be termed local varieties, but they are very cool one. Then Morelly Althrech they good ones. Thos. Woodford, Atherstone.

Epiphyllum truncatum,-Whatever method of growing this lovely stove plant be adopted, it is well deserving attention for decorative purposes. I cannot, however, opine with "S. J." (p. 794 of your last volume) that it is as useful for cutting purposes as he there represents. Perhaps the most general way of growing the Fninbullum is not the Paraghia stock. the Epiphyllum is on the Pereskia stock, as it can then he had any height required; but if grown on its own roots it is none the less useful, especially for hanging baskets; and if some are grown in 60-size pots they form most useful subjects for furnishing jardinières, baskets, &c., or for a front row in the conservatory, in which way its charming blooms are seen to great advantage. E. Morgan, The Butts, Harrow-on-the-

The Land.—The writer at p. 747 of your last volvme says that the land ought to be very much more [productive than it is at present, I, as a landed proprietor, am anxious to make my estate as productive as possible, and shall be very grateful to any new that it can be made to any one who can show me that it can be made much more so than it is at present. He says that it would become so by dividing it into smaller holdings, such as could be worked with the spade, and that an such as could be worked with the spade, and that an additional advantage would be the encouraging a much larger rural population. Would either of these things result from dividing the land as you propose? From all that I have seen and know I should say, certainly not. Market gardening is out of the question where I live, and next to that I believe that the way to make the land productive is to rear and feed as much stock of all kinds as possible, and this can be done better on large holdings than small ones. be done better on large holdings than small ones. In France the land is subdivided as he proposes. he proposes. The French are a very industrious and frugal people, yet, with fully as good soil and a finer climate than England, the produce per acre is very little more than

half that of England. [What about Belgium?] I have seen the attempt made to give labourers small holdings, and the result was not satisfactory. Of course they should have good gardens attached to their cottages—all mine have that; but if they have enough to make them small farmers, or something between that and labourers, their families as a rule are harder worked and worse off than those of day labourers. In fact I believe that no one is in a better position than a labourer with constant employment and fair wages and a good cottage and garden; and now that (thanks to machinery) labour is worth more and therefore is better paid than formerly, I much doubt about most of the schemes which I hear proposed and sometimes have seen tried for altering the present arrangement of landlord, tenant and labourer. C. W. Strickland.

Chrysanthemum Meg Merrilies.—A writer in your issued for December 22 (p. 797) deals, I think, unjustly with this flower when he classes it against some sprawling kinds which might very well be discarded. To my mind it is one of the most valuable we have—not for exhibition, for of that I know nothing, never having exhibited one, nor intending to do so; but after all other Chrysanthemums, save Princess of Teck, are out of flower, this is in perfection. I have now a plant of it in my greenhouse which has over been disbudded, and it has now upwards of fifty blooms on it, touching one another, and although so ragged, yet that gives it an air of lightness and elegance which many of the same orthodox blooms do not possess; and the soft, cloudy look this plant has, with its delicate primrose and white blooms, leave now little to desire in the way of refined beauty. So I would say, by all means retain Meg Merrilies, 117tld Rose.

Pyrethrum aureum selaginoides,—This new and distinct form of Pyrethrum is to be highly recommended for bedding purposes, especially carpet bedding, on account of its exceedingly dwarf and compact habit, combined with good colour, its flat foliage resembling theirforms of Selaginella Martensi, which overlay each other, thus giving a level and uniform surface. E. Morgan, The Butts, Harrow-on-the-Hill.

Ensilage.—The Spaoish word "silo," from which "ensilage" is derived, comes from the Greek σφ6s, "a pit," the liquid "r" being changed, as is so commoolly the case, into "1". I enclose an extract on the subject, which may serve to interest your readers. Hubert Ac. Holdan:—"Quelques peuples, comme les Thraces, les Cappadociens, ont leurs greniers sous terre, dans des fosses qu'ils appellant "siro" (σμοψ1); *d'autres dans les puits, comme les habitants de l'Espagne citérieure les Carthaginois et les habitants d'Osca. Ils en couvrent le fond de paille et ils ont soin que l'air ai l'humidité n'y puissent y pénétret. De cette manière leur grains sont a l'abri du charançon, et le blé se conserve cinquante ans, le millet plus de cent années,"

— The word "silo" has interested me, because there is a genus of insects so named: a "cavity" or groove would answer admirably to a point of structure in this particular genus, but re "silo" economically—I take down my several (three) Greek Lexicons, and I cannot find either other or or others, but I find xthos "green food for cattle"—"food, forage, fodder." R. McL.

Eucharis amazonica.—Lately in one of the gardening papers there was a very instructive treaties on the flowering of the Eucharis, by Mr. Kemp, with most of whose remarks I entirely agree, especially with regards to the number of times he advocates flowering the same bulbs in the year—e.g., twice only; for how frequently are we not told, in the pages of the various gardening papers that, if you only do so-and-so, you can flower the same batch three if not four times in the year. I am induced to offer these few remarks from the fact that I have just lately seen what twelve or eighteen months ago was perhaps one of the finest batches of Eucharis in the kingdom, but which, sad to say, are no longer so, from the one cause, I believe—"hard forcing." I was saked to look at the batch the other day. Among other questions I asked had they had a severe chill, or liquid manure too strong, or any artificial stimulant, or was there seand used in the compost? This last question I was induced to ask from the fact that I myself lost about 300 bulbs from, I believe, no other cause than the use of sand from the shore. The reply to my last question closed the cross-examination—Have they been hard forced? "That," replied the partywho had charge of them, "I fear is the cause; we have driven them too hard, to get them in flower at Christmas and again at Easter." This is the simple story of a collection of

several thousand bulbs. But the curious part of it is, bulbs of all and every size seemed to be suffering alike. I have been making many enquiries, and find a very great number complaining of their Eucharis going off without any apparent cause, the manner of exit being something like the following:—The top or crown of the bulb seems to begin to rot, the scales or skin layers each in turn become affected with this rot, the bulb in the meantime making every effort to send up a leaf, which, when it attains the height of a few inches, turns yellow and goes off, each subsequent effort becoming weaker and weaker till the final collapse. It thus becomes a serious question, for I here learnt that not only in these parts, but in other districts, similar calamities among Eucharis bulbs are happening. I have great doubts whether the system of keeping Eucharis bulbs for several years undisturbed in the same pots does not tend to exhaust the bulbs more rapidly than they otherwise would do. I adopt the system of under-potting, and thereby give an annual shift. If any of your numerous readers, veterans in the culture of Eucharis, can throw any light on this subject, many I know will be deeply grateful. A. E., Dawilish.

Vine Mildew.—Mr. Broome, having kindly undertaken to examine and sketch the fungi on the Vine leaves sent from Washington, and having found on them, together with the Unchula, a species which seems to be identical with Erysiphe communis, a very widely distributed species, which may after all be the true result of Oldium Tuckeri—as no figure has been

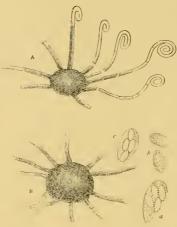


Fig. 3.—A, Uncinula spiralis—a, ascus; b, sporidia. B, Erysiphe communis—c, ascus.

published of Uncinula spiralis we lay before our readers one (fig. 3) copied from Mr. Broome's sketch, which gives as follows, more or less highly magnified:—A, Uncinula spiralis; a_i ascus $\{a_{33}$ inch long) with the enclosed sporidia; b_i , the sporidia, more highly magnified, being about $\frac{1}{100}$ inch long. B, Erysiphe communis, with ascus, and enclosed sporidia. M. \mathcal{T}_i , B.

Plant Labels.—Much has been written about plant labels. Your correspondent last week (Mr. Potts) properly recommends the use of permanent kinds for all sorts of plants. This is very desirable indeed, but gardeners are usually content either to have the proper paper label attached to new plants as they arrive from the nursery, or at most substitute a wooden one, which soon decays and probably is not renewed. Gardeners cannot be expected to keep on hand a supply of permanent labels suitable for all sorts of plants. Mr. Potts recommends for wall treesstrips of lead with the name punched in by means of an iron set of the alphabet. Unless for a very extensive garden indeed such an apparatus would be seldom used. It seems to me that the most effectual way of preserving names would be for nurserymen to send suitable permanent labels along with plants, making a charge for them. For wall trees the sort of label described above might, perhaps, be best; for shrubs, Roses, fruit bushes, and such-like, hanging zinc labels written with chemical ink would probably answer better, and so on. The hanging labels ought to have copper wire, &c., complete, so that they might be at once attached to the plants. These inexpensive zinc labels properly prepared and written will last a life-

time. Were this plan adopted there would be less complaint about want of names. By the way, what about the "permanent label" competition which was advertised to take place some six months ago by the Society of Arts? I have seen no report on the subject. P. Neill Fraser, Rockville, Murrayfield, Edinburgh.

Impatiens Hookeriana, — This fine species is perhaps the largest-flowered of the genus, and it flowers so rarely in cultivation that the event is worth recording. It has just been flowered by Mr. Hutchisson, gardener to Mrs. Peed, of Lensfield, Cambridge, who has great regard for intrinsic merit in plants, and cultivates some which many gardeners would pass over. This plant has been grown near the glass, in a high stove temperature, with plenty of atmospheric moisture, and liberal root treatment. A number of buds were formed, which fell off, and this indicates a difficulty on account of the dull weather of this season, but the plant is quite young, and, the one inflorescence perfected this fyear apparently promises much better success another year, with the same treatment. Roots have descended from the stems of the plant almost as thick as quills, and the treatment it has received, as already mentioned, is no doubt the most conducive to success. The flowers are pure white, with splashings of red on the two lower petals, and spots of the same colour in the throat. They measure 21 inches in the direction of greatest width; the spur is unusually long for the size of the flower, and tapers to a length of nearly 3 inches. This species was introduced to Kew, where it flowered for the first time in the summer of 1852. It is a native of Ceylon, whence seeds were sent by the late Mr. Thwaites. An excellent figure was published in the Betanical Magazine, t. 4704. R. F. L.

Mr. Cooper's Collection of Succulent Plants:

—To the passer-by of Mr. Cooper's modest little establishment in the Brighton Koad, Red Hill, Surrey, there is nothing externally to attract or invite the attention, and probably very few would expect to see anything beyond the class of plants that are usually to be found in such small establishments; but seekers after fancy Pelargoniums, Fuchsias, Calecolarias, Acacias, Primulas, Azaleas, &c., would find but the barest sprinkling of them there; but seekers after fancy Pelargoniums, Fuchsias, Calecolarias, Acacias, Primulas, Azaleas, &c., would find but the barest sprinkling of them there; but they will find an excellent collection of succulent plants, which are contained in an old greenhouse, about 20 feet square; and so closely packed and crowded are they as to produce at first a feeling of bewilderment; and those accustomed to see plenty of room given to plants would imagine that they could not be kept healthy in so crowded a condition; yet an inspection will show that most of them are perfectly healthy and robust. At the first glance it becomes quite evident that the South African element predominates over that of all other constries in Mr. Cooper's collection; and this is not to be wondered at, since South Africa was the field of Mr. Cooper's travels, and from whence he introduced many plants into our gardens, of some of which he still has the only specimens. Among the most noteworthy of the plants may be mentioned a fine specimen of Aloe drepanophylla, 7 to 8 feet high, which flowers annually, and is the type specimen from which the original description was made; another of A. sigmoidea, also the type, and unique in Mr. Cooper's collection; as likewise are A aristata var. supralævis and A mitterformis var. pachyphylla. Besides these are numerous species of the Aloe and some remarkable hybrids. Of Ilaworthias there is a good series, and among them some very fine specimens, including the remarkable seeding very fine plants, and some of them are probably undescri

Helleborus niger altifolius. — Seeing some articles in your columns on Helleborus niger var. altifolius, and the statement that Aberdeenshire was one of its northern garden-habitats, I endeavoured to find some specimens of the plant in rural cottage gardens, and now send you a flower and leaf from one of these growing in a garden where it has been for more than forty years—a small garden beside a fisherman's house. The people say it has been there as long as they can remember. They also tell me that some fifty years ago the young maidens were wont to put the

^{*} See Varro de re rustica, i., 57; Columella, i., vi, 15; Piny, Nat. Hist., xviii, p. 73; Hertus, Bell. Afric, i., 65; M. Durcau de la Malle in Memoires de l'Académie Royale des Inscriptions, vol. xiii, p. 461.

flowers in their dress when enjoying their Christmas dance on Auld Yuyll Day. For this purpose it was largely cultivated in cottage gardens, where no other flowers were to be seen at that festive season in so northern a climate; but it has now become quite a rare plant, and is not in such request. Fames Taylor, Clashfaryuhar, Portlethen.

Dimorphanthus mandschuricus.—At p. 798, Dec, 22, Mr. C. Wissenbacb expresses a doubt as to the identity of this plant with Aralia chinensis. If we are to take for granted that the range of distribution ascribed to the latter by various authors, and also its almost extraordinary variation, are correct statements, then it would be an easy matter to conceive of two plants presenting an appearance so dissimilar, and differing in constitution as stated (P. 798), and yet be nothing more than mere varieties of the same species. The more important specific characters of A. chinensis are—stem arborescent and, as well as petioles, more or less prickly; leaves bipinnate, leaflets ovate, oblong, acuminate, rounded and unequal at the base, sharply serrate and villous, and panicle of flowers branched with numerous umbellules. There is no record in gardening books of its having been introduced to this country prior to 1865 or 1866, when a plant described and distributed under the name of Dimorphanthus mandschuricus is stated to be synonymous with it. The plant in the neighbourhood of London agrees exactly with the characters given above, and descriptive of A. chinensis. Blume says the latter is a native of Java, on the mountains; Linnæus says of China; and Loureiro, of Cochin China. The latter describes it as procumbent, or scandent, climbing in the hedges, and proving itself of great annoyance to travellers, on account of its numerous hooked prickles. Some allowance must be made for this apparent laxity of description, as it would probably be more botanically correct to say that the plant was found scrambling in the bedges amongst other subjects, competing for the same space. There is no such best prickles of variation in the plants cultivated here; but the stems and leal-stalks seem to become much best probably be more botanically correct to say that the plant was found scrambling in the bedges amongst other subjects, competing for the same space. There is no such scrambling in the bedges amongst other subjects, competing f

Late Chrysanthemums,—I send you some flowers of Chrysanthemums cut to-day (December 31), and which I think you will consider of fair quality for so late in the season. If the National Society could give us a show in December I think good blooms would be forthcoming, and the Society would be doing something in prolonging the season of this beautiful autumn and winter flower. At present the chief aim of exhibitors seems to be to get all into bloom, if possible, say, from November to to 20, both early and late varieties. J. Hill, Patter's Park, Chertey. [Mr. Hill sent us some very fine blooms of Hero of Stoke Newington, John Salter, Princess Teck, the finest late white; and Meg Merrillies and Dr. Masters, Japanese. Ed.]

Very Late Chrysanthemums. — Any plant which naturally opens its blossoms in the dull and gloomy days of winter is always welcome, seeing how difficult it is to keep up a plentiful supply of flowers at such time of the year. The Chrysanthemum has, in the hands of clever hybridisers and cultivators, come wonderfully to the front rank in this respect of late years. The variety of colours, the endless forms, together with their easy cultivation, make them at once every one's favourite autumn flower. I send the names of a dozen of those I call January Chrysanthemums, these being in perfection in that month:—Rose Marguerite, Progne, Fulton, Virginal, Ethel, Comtesse de Beauregard, White Globe, Princess Marguerite, Yellow Dragon, Meg Merrilies, Late Duchess, grandiforum. There is some skill required to bloom the two last kinds. They should be in their flowering pots soon after midsummer, be plunged in the full sun, and when frost is expected placed in a light house without heat, and no liquid manure should be given them after they are housed till the buds appear. I have made the list in the order in which they bloom, and hardly too much could be said in praise of Late Duchess, as it opens with the new year, and is truly lovely. I shall be very much obliged if any one will add to this list of sorts flowering in January. J. Rust, Eridge Castle.

Primulas at Andley End,—These are now in great beauty. There are several hundreds of plants, in forty or more varieties, all in full bloom and tastefully arranged in a light commodious span-roofed house, forming at once a grand sight. Mr. Vert gives Chiswick Red the first place in this shade of colour, and considers alba magnifica to be a great advance

on all other whites, while he has hopes of obtaining a new race from the blue Holborn Gem. Gilbert's doubles are in good form—dwarf, sturdy, and well bloomed. Marchioness of Exeter and the Earl of Beaconsfield are two of the best. Mr. Vert attributes his success in blooming these so freely to keeping them in comparatively small pots, and to careful watching in their propagation. The whole collection shows that they not only have been carefully watched, but that they have been zealously and intelligently handled. Hortus.

The Native Country of the Mangosteen.—At pp. 753 of your last volume, in reference to the "Forest Flora of Cochin China," you observe, "Among the plates is one devoted to the Mangosteen (Garcinia mangosteen), which, it appears, is not known in a wild state." I have no doubt whatever but that this delicious tropical fruit is really native in the island of Borneo, where I met with it in the forests beside the Lawas and Meropok rivers. In its wild state the interior of the fruit consists of four divisions only, all four containing each a perfect seed (fig. 4), whereas in the much larger cultivated fruits there are seven or eight divisions, and of these rarely more than one contains a perfect seed, as shown in the accom-

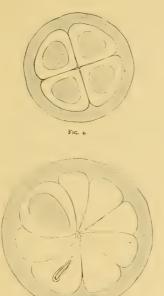


Fig. 5. — THE WILD AND CULTIVATED MANGOSTEEN: FAULT SECTIONS.

panying diagram (fig. 5). This as a wild fruit is well known to the natives, who call it Mangoosta. Beside the Lawas river another species of Garcinia is not uncommon, with a long-nosed or top-shaped fruit, containing eight divisions of a rather acid tasted pulp. Four segments are abortive, the other four containing each a perfect seed the size of a Kidney Bean. Its fruit is hight red, turning nearly black when ripe. Its native name on the Lawas is "Prada-prada." F. W. Eurbüdge.

Late Roses.—The following kinds were in bloom here a few days before Christmas, and some still have beautiful buds:—Gloire de Dijon, Cdine Forestier, Souvenir de la Malmaison, Cramoisie Supérieure, Miniature, Smith's Yellow, pink China, or monthly, Marèchal Niel, in bud; Homère, and others. To all lovers of flowers I would say, grow them all, but especially the pink and crimson Chinas. They are within the reach of all, as they do not require much attention, and many old buildings, walls, or fences, might be made gay and pretty with flowers nearly all the year round by being covered with these old but now much neglected Roses, instead of being as now unsightly objects. I can look back more than thirty years and find very few seasons when we have not had them in plenty at Christmas and much later on in mild weather, and again in early spring. W. Divert, Wierton, Dec. 26, 1883.

ROTHAMSTED EXPERIMENTS.

THE current number of the Journal of the Royal Agricultural Society contains two contributions from Sir J. B. Lawes, Dr. J. H. Gilbert, and Mr. R. Warington — the first being an account of the nitrogen existing as nitric acid in the soils and subsoils of some of the fields at Rothamsted, and the second is some new determinations of ammonia, chlorine, and sulphuric acid in the rain-water collected at Rothamsted.

From the results recorded we find that soils of three drain gauges, 20, 40, and 60 inches deep respectively, which have now remained without manure and without crop for thirteen years, have during the last six years yielded nitric acid in the drainage-water equal to an average of 40.2 lb. of nitrogen per acre per annum. The production of nitrates is stated to be greatest during the summer months. The minimum amount in the drainage-water occurs in the spring; the maximum in July, or in the first month after wards, in which considerable drainage takes place.

NITRATES IN FALLOW LAND,—In three soils at Rothamsted in fair agricultural condition, cultivated in bare fallow since the harvest of the previous year, 56.5, 58.8, and 59.9 lb. of nitrogen as nitric acid per acre were found in September or October, to the depth of 27 inches. When no excess of rain has fallen during the summer, the nitrates in a fallow soil are chiefly found in the first 9 inches, where nitrification principally takes place, but after much rain they occur at a lower level.

NITRATES IN LAND GROWING CEREAL CROPS. -The results relating to land growing corn crops, receiving no excess of nitrogenous manure, show that only very small quantities of nitrates will remain in the upper layers of the soil through the summer, the crop having assimilated the nitrates formerly present. If rain follows after harvest, and especially if the land be ploughed, a considerable formation of nitrates will occur. Nitrates will continue present throughout the winter, notwithstanding loss by drainage, slow production being always in progress. In late spring or early summer the nitrates will again disappear it the land is once more under crop. On analysis the quantities of nitrates found in the soil generally bore a distinct relation to the amount of crop yielded. Comparing the total nitrogen in the first 9 inches of the permanent Wheat-field soils with the quantity of nitric acid found to the depth of 27 inches, it appears that the nitrogen of permanently unmanured land nitrifies with more difficulty than the nitrogen of land that has yielded large crops, or has received rape-cake or farmyard manure. The old nitrogenous capital of the soil is thus shown to be more slowly oxidised and converted into plant food than the more recent residues of crops or of organic manure.

NITRATES IN LAND GROWING LEGUMINOUS CROPS,—A comparison of the quantity of nitrates found in soils cropped with Beans or Clover with that found in corresponding land in bare fallow showed that nitrates are assimilated by leguminous crops, but that the quantity of nitrogen in luxuriant crops of these plants appears too great to be accounted for by the quantities of nitric acid at present recognised in soils.

From these facts it seems that the amount of nitrates in the different Rothamsted soils points to the conclusion that in the case of cereal crops (Wheat, Oats, or Barley) the nitrates of the soil are a sufficient soil different when we come to the leguminous family of plants, although crops of Beans or Clover do assimilate nitrates from the soil in considerable quantity, is sufficiently established.

It may be mentioned that from determinations made in samples of soils collected in 1833 to the depth of 108 inches, that those which had grown white Clover showed more than 50 lb. of nitrogen as nitrates per acre below 45 inches of depth, while adjoining umanured laud in fallow showed less than 20 lb. in the corresponding layers.

The question arises, whether this be due to the possession by the leguminous crops of a power of utilising nitrogenous substances existing in the soil in a condition of combination, as well as of distribution, not available to cereal crops.

Turning our attention now to the second paper under consideration, we find that 152 analyses of rain, snow, dew, and hoar-frost, representing the daily collections from June 22, 1881, to January 5, 1882, gave an average of 0.248 of nitrogen as ammonia per million of water; the extremes observed were 5.491 and

0.0.43. The following table gives the whole of the determinations in monthly mixtures, grouped according to the quantity of the rainfall; and the results for the summer months (April to September) are given separately from those of the winter months (October to March). The sulphuric acid (SO₀) contained in the rainwater collected in glass vessels has averaged in two years 2.41 per million of water, amounting to 18.5 lb. per acre per annum. This quantity would appear to be about sufficient for the demands of ordinary cereal crops, though unequal to the requirements of Turnips. A part of the sulphuric acid in the Rothamsted rains will be due to coal smoke, and a still smaller portion derived from sea spray. The considerable quantity

Table I.—The Avenage Amount of Nitrogen as Ambonia in Monthly Rainfalls of Different Quantity, in Summer, Winter, and the Whole Year.

		Summe	r Months		Winter Months.				Whole Year,			
Groups of Rainfall,	Examples.	Mean Rain- falt,	Nitroger mo Per Million.	as Am-	Examples.	Mean Rain- fall.		Lbs. per	Examples.	Mean Rain- fall.		n as Am-
		Inch.		16		Inch.		lb.		Inch.		lb.
Below 1 inch	2	0.87	.890	.175	5	0.80	750	.137	7	0.83	.792	.148
I to 2 inches	7	1.65	-527	.197	5	1.32	.468	.139	12	1.51	. 506	.173
2 to 3 inches	7	2,23	-537	.272	3	2.59	.278	.163	10	2 34	.451	.239
3 to 4 inches	4	3.62	-410	-335	8	3 44	.263	+203	12	3 50	+3'4	.248
Above 4 inches	5	2 3 3	,287	.346	4	5.30	.206	-247	9	5 31	.25t	. 302
	25	2.80	423	.268	25	2 fg	.296	.180	so	2 7	.361	.274

The gradual decrease in the proportion of ammonia per million of rain as the rainfall of the month becomes greater, is plainly shown by these figures; the quantity of ammonia brought down per acre nevertheless rises with each increase in the quantity of rainfall; but, taking the figures for the whole year, it requires the rainfall to be increased about sixfold, in order to double the quantity of ammonia contributed to an acre of land.

Six years determinations of chlorine in monthly mixtures of rain gave an average of 1.99 per million of water, or 14.92 lb. per acre, equal to 24.59 lb. of pure common salt. Two-thirds of the chlorides fall in the six winter months—October to March. The minimum quantity falls in July; the maximum in October and November.

In the next table the chlorine determinations in

In the next table the chlorine determinations in seventy-two mouthly rainfalls are grouped according to the amount of the rainfall, and according to the season of the year.

found in the summer rain points to the fact, that the sulphuric acid in rain is largely derived from the products of the decay of animal and vegetable matter, which is, of course, most active in the warmer months. Yohn Y. Willis, Harpenden, Dec., 1883.

THE VINEYARD NURSERIES, GARSTON.

WHEN at the recently held exhibition at Liverpool I took the opportunity of paying a visit to these celebrated nurseries, now belonging to the Liverpool Horticultural Company (John Cowan), Limited, and the first thing that strikes one is the vast difference in the place to what it formerly was—once proverbial for the production of the finest Grapes, but fruiting Vines are all but obsolete; there is still, however, a very

Table II.—The Average Amount of Chlorine in Monthly Rainfalls of Different Quantity, in Summer, Winter, and the Whole Year.

Summer Months,					Winter Months.				Whole Year.				
Groups of Rainfall.		Examples.	Chlorine.		orine.	Toles.		Chlorine.		Examples.	Mean	Chlorine.	
		Exan	Rain- fall.	Per Million	Lbs. per	Rain- fall.	Per Milion.	Lbs. per Acre.	Raio-	Per Million.	Lbs. per Acre.		
Below 1 inch		3	Inch. o.8o	3.58	lb. 0.65	6	Inch, o 81	5.76	lb. 1 06	9	Inch.	5 04	lb.
to 2 inches		10	1.56	1 74	0.61.	9	1.52	3 46	1.19	19	1.54	2.55	0 89
to 3 inches		9	2 30	1 40	0.73	7	2.:9	2.65	1 55	16	2.43	1 98	1.09
to 4 inches		5	3-55	1.25	1.01	8	3 44	2 82	2.20	13	3 48	2 20	1.74
Above 4 inches		9	5,26	0.81	0.95	6	5.15	2 23	2 59	15	5 22	1.37	1.61
		36	2 88	1 21	0 79	36	2.64	2 84	1 70	72	2 76	x.90	1.24

From the ahove results it would appear that in summer the supply of chlorides is very limited, for a large increase in the rainfall is attended with but little rise in the quantity of chlorine brought upon an acre. In winter, on the other hand, the supply of chlorides in the atmosphere is so constantly renewed, that an increased rainfall results in a considerable addition to the supply per acre.

Determinations of sulpburic acid in the rain of two more above since see of a trace willow feedened.

Determinations of sulpburic acid in the rain of two years have given a mean of 2.41 per million (reckoned as anhydride), or 18.5 lb. per acre per annum. The sulpburic acid occurs in nearly equal quantity in summer and winter.

fine Madresfield Court Muscat, which occupies two houses, and which produced last season 420 bunches, actuaging from 1½ lb. to 2 lb. each, and it promises well for a heavy crop next season if allowed to hold its own. What a village of glass there is at these aurseries! You are conducted from one house to another until you fancy it is time to stay, and are sure you have quite tired out the person leading the way. It is difficult to estimate the stock of good things which here find a congenial home; thousands of Palms, Ferns, Crotons, Dracensa, Roses, Ericas, all

Table III.—Showing the Amount of Sulphuric Acid in the Rainfall of the Six Summer and Six Winter Months of Two Years, 1861-83.

		Sulphuric Acid.						
Period of Collection.	Rainfall.	Per Millio	on of Rain.	In Lbs. per Acre.				
Tellog of Concensor			Rain from Glass Funnel.	Rain from Large Gause.	Rain from Glass Funnel.	Rain from Large Gauge.		
April to September, 1881		Inches.	2.64	3 97	lb. 8 2	lb. 12.4		
October to March, 1881-2		15.86	2.29	3.66	8,2	13 1		
April to September, 1882		16.37	2.67	4.15	9.9	15-4		
October to March, 1882-3		21.78	2.15	3 99	10 б	19.7		
Average per annum		33.89	2 41	3 95	18.5	30,3		

in the best possible condition, meet you everywhere, for Mr. Cowan, with untiring energy, caters for all classes of the community, the market of the populous Lancashire city, swallowing up an enormous number of plants every month; at the same time a large business is done in a retail way and with the trade, while furnishing is done to a great extent, for which purpose a large number of plants are grown and reserved, so there is no difficulty, if a large demand is sudden, to meet the matter withoutinconvenience. All classes of purchasers will find something to meet their wishes, as such a varied and well grown stock is provided for selection; at the same time there are certain specialities which are successfully handled, of which we note the leading ones.

VINS IN POTS.—These are a speciality and well done, all the leading kinds being grown in large numbers; about 6000 are annually grown, the huge Vine-house being crammed with them, and we were informed by a well-read old comploye that this house is 204 feet 4 inches long, with 41 feet span—ample accommodation for a large batch; the wonder is to myself where all the Vines are got rid of every year, but there is an enormous demand. The Vines are this season very nice stuff, well ripened and short-jointed; indeed, just the canes to give satisfaction. This large house was filled with Chrysanthemums, &c., in full flower, representing a wealth of bloom, daily consigned to the market.

TEA ROSES.—The stock of these was very large and unusually fine this season, about 10,000 being specially grown in pots for sale, including all the more useful kinds, such as Gloire de Dijon, Niphetos, Perle des Jardins, Maréchal Niel, Cheshunt Hybrid, Madame Falcot, Isabella Sprunt, &c., and bette stuff I never saw, especially the Niphetos, Gloire de Dijon, and Maréchal Niel; the former was unusually strong, while the Gloires were surprisingly fine, each plant with several long well-set shoots. Well might the stock of such plants become exhausted rapidly, and it is intended to considerably augment the number during the ensuing season. Fairy Roses, including the Pet, Mignonette, and Paquerette, are much encouraged, especially the latter, which is a great favourite.

Palms,—These are raised in enormous quantities, the stock being estimated at the present time at from 25,000 to 30,000 in all stages of growth; thousands of young seedlings in the finest health of such useful kinds as Seaforthia elegans, Latania borbonica, Areca lutescens, A. rubra, &c.; and I was pleased to see a very fine batch of Calamus ciliaris, which presented a most distinct and desirable appearance. This, and several of the other Calami, are extremely pretty in a young state, and should be much more extensively grown. Many other rater Palms are also grown, but space will not permit me to mention other than the leading and most useful of them.

FERNS .- Ah! here is a treat! What is that broad mass of a dwarf Adiantum — surely it is not A. Pacottei? Ves it is, really; this is surprising, and all raised from spores. What a charming thing it is; well may it take the fancy of all comers. I was informed the stock at one time consisted of over 5000 plants in all stages of development. I thought the plants had a more compact habit than the original A. Pacottei even, while the pinnules and ultimate segments seemed rather broader; but these are only differentiations to be anticipated by spore-propagation, especially when the parent is of hybrid origin. Another beautiful Fern, named Pteris serrulata cristata Cowani, is largely grown, and when in character it is impossible to have a better form; it produces immense broad crests, which gives the fronds a drooping disposition; it is a most valuable Fern for decorative work. P. serrulata major is also very largely growo. I have never seen this in such quantity outside London before. Didymochlæna lunulata is here in large numbers, and a charming species it is; while, as one would expect, Adiantum cuneatum, A. gracillimum, Lomaria gibba, and many others, are grown in quantity, as well as a large number of less common kinds. The Fern-propagating-house was quite a pleasure-finding spot; here are being raised tens of thousands of young Ferns from spores of all the leading varieties, as well as many very rare ones, the work being accomplished in a most systematic and painstaking manner, and the reward will be sure.

CROTONS AND DRACENAS,—These are grown in large quantities, and while propagation is the watchword at Garston, selection is also clearly made, and a further reduction of varieties will result, so that only the best will be retained. Of the former we noticed good batches and beautiful young specimens of Queen Victoria, Mortei, Hawkeri, Disraeli, Lord Derby, &c., while Dracenas were largely represented by terminalis, Cooperi, Baptisti, Pinardi, rubra, &c. Among other stove plants deserving attention were Aralia filicitolia, Chabrieri, and elegantissima. Bambusa Fortunei variegata struck me very much as grown in the stove.

Among other plants grown in quantity Genistas hold a foremost place, there being at the present time about 10,000 plants in different stages, charming bushy stuff, looking well for a future rich display. Erica hyemalis and E. Wilmoreana are well grown, indeed quite equal to London-grown stuff; but the Company have in Mr. Easton one well qualified for the production of such stock. Many say it is impossible to grow E, hyemalis outside during the summer at Liverpool, but the plants here disprove that statement in toto, as they were grown on flats of ashes, and more copiously flowered stuff one could not wish to see. Epacrises are also largely grown, and are looking very healthy. A large stock of the beautiful and comparatively scarce Acacia Drummondi is being worked up-already it is reckoned by four figures; it is one of the best for decorative purposes. Grevillea robusta and Aralia Sieboldi are grown in enormous quantities, especially the former, thousands of it being disposed of annually. Zonal Pelargoniums for winter flowering are encouraged; two span-roofed houses, each over 100 feet long, were a blaze of colour at the time of my visit, although cut hard every day-a grand testimony to the value of these throughout the year. No one has brought them into greater prominence than Messrs. Can-nell, of Swanley. Orchids are represented in good numbers and healthy young plants, and this is a growing feature of the nurseries. Cinerarias form a very important feature, and it is impossible to see a finer strain than exists here-very dwarf, with immense heads of large even flowers, with very fine colourslarge numbers of which were in bloom, and a multitude coming on. Thousands of bulbs are forced every season, including not less than from 15,000 to 20,000 Roman Hyacinths, and at the time of my visit these were a fine feature. Tulips were also coming in in full force, and will produce a long display with Lily of the Valley, Spiræa, Azalea mollis, &c., for months to come. Visitor.



GOLD-LACED POLYANTHUSES .- Your correspondent "North Norfolk" (p. 796 of vol. xx.) writes of Pearson's Alexander as if it might have been exhibited lately, and I know from several correspondents that it is being offered for sale at about 15s, a plant. I desire, however, to caution the public against spending their money upon plants which must be of doubtful pedigree and quality. I doubt very much if there are many Polyanthus growers who know really of the existence of this grand old flower. In ISS1 I mentioned in the Garden (October 1, p. 340) that Pearson's Alexander had just been recovered from an old garden, and might shortly he expected upon our exhibition tables. In 1882 (Garden, February 11, p. 90) I again referred to it in the following words:—
"Pearson's Alexander is mentioned by 'Exile' as if he had seen it lately, but I am pretty sure that he does not know where it exists. It is a long time since it was seen by the public. It has certainly been found again, and its authenticity established, and it will be a pleasant surprise when it can be shown in true form.

It would be interesting if we could hear if your correspondent has seen this Polyanthus lately, and if it is really obtainable. It will be odd if our Lancashire florists are unaware of it, for they are ready to pay long pri es for good flowers. That Pearson's

Alexander exists I am well aware, as I have thus watched it for three years. The late Mr. Read, of Market Rasen, had a truss of Maud's Beauty of England submitted to him in 1882 for his opinion, and he identified it as true. In his note he thus describes this variety and Pearson's Alexander:-"Pearson's Alexander has a fine circular pip, setting close on the calyx, the size of a halfpenny; fine circular tube, low, nearly filled with anthers; eye a deep yellow, not circular, nor yet a pentagon, between the two, the same colour as the lacing, which is well developed and continuous. The ground colour is very dark, but not black. It makes a very The ground showy flower, bright and lasting, robust and free Maud's Beauty of Eogland is an improved Alexander, colour black, eye good, nearly circular, lacing perfect, tube perfect, raised. Rather larger than Alexander, and perhaps a slight improvement in some of its features, still very similar in its general character; considered by some to be the best of all."

Read was well known as the raiser of Acme and other standard Auriculas, and I have no doubt that the above descriptions of these two famous Polyanthuses had been noted down from actual observation, and may be relied upon as correct. It will be seen that Maud's Beauty is a slightly better Polyanthus than Pearson's Alexander, and this is found now to be the case when the two are placed side by side. is curious to note how celebrated Polyanthuses nearly die out and are again plentiful. This is now the case with Lancer, which was scarce five years ago and is now abundant. Cox's Prince Regent is another instance of a first-rate Polyanthus long lost and again in plenty. Even Cheshire Favourite had its season of scarcity, and was only recovered in the original garden where it had been accidentally discovered by Saunders as a chance seedling. Congleton Queen had its season of trial in 1883, and was lost by hundreds, and is even yet scarce. Latterly Lord Lincoln has had its numbers thinned by death until it is exceedingly scarce, and letches fancy prices. George 1V., which is perhaps the very best red ground Polyanthus we have, is also very scarce this season.

I have often thought that all this comes of the overdivision and over-propagation. Saleable plants are cut up every year and have an unbroken struggle for existence, which certainly impairs the vital energy of the plant, and in trying seasons such as we have had of late the losses are universal. You have then to go back to the place where the plant originated, and where perhaps it has been allowed to grow on naturally. The cultural instructions we have lately had under the heading "Florists' Flowers" in the horticultural papers will lead any one to suppose that the Polyanthus is a delicate plant, only to be grown in pots and frames, and needing excessive care and attention. It is so, truly, where plants are divided late in autumn into the utmost single crowns, placed in pots where the roots get frozen before they get hold, and it is a marvel how a tenth survive.

Mr. Douglas recently stated in your columns that the finest frames of Polyanthuses he ever saw were at Brockhurst, and he asked me to state how we managed to get such results. My answer is, By growing them naturally. We seek soil from places where Primroses We grow Polyanthuses in places where Primroses would grow well. We do not over-divide them; and when we divide at all it is when the plants are ripe for it, and where they divide naturally. We encourage root formation, and never coddle the plants; and we never "risk all our eggs in one Some plants are grown in the wood walks where Primroses grow; others are under Apple trees in the orchard, in properly prepared soil; others are planted out in frames in carefully prepared soil; and, lastly, we have a complete set in pots, plunged in red sand and covered with glass, but open all round, and sheltered from cold winds.

Our stock is divided into these four classes, a few of each plant under each sort of treatment, and thus we have four chances. The tendency with us is to give up pot culture altogether, and to keep to the natural method. Such delicate Primroses as the Double Crimson and the Double Crimson Velvet Madame de Pompadour are growing in our wood walks with amazing vigour, whilst in the open borders they languish.

We are trying the same methods now with Auriculas, but in this case we mix large gravel with the soil, so as to imitate the native habitat of the plant. It is only thus that our "hobby" flowers can be made true garden flowers. Wm. Brockhank, Brockhurst, Didsbury.

POLYANTHUS PEARSON'S ALEXANDER. - This variety was raised by Mr. Pearson, of Chilwell, Notts, great-grandfather of the present head of the firm of Pearson of Chilwell. I well remember my father bringing home a plant he purchased from Mr. Pearson some fifty-five years back, which we grew for a number of years; and a grand variety it is if you get it true. Some three or four years back a plant under this name, and one called Beauty of England, came into my hands from a Southern grower of some repu-It turned out a poor thing, after the Black Bess style, and Beauty of England equally wrong. I do not believe this is now in cultivation, although it has got a representative in the trade. Alexander is yet to be found in a few hands in the North, and I can tell "North Norfolk" he will yet have a hard nut to crack to beat Alexander when well grown. King-

Pearson's Alexander Polyanthus was raised by my great-grandfather, the founder of the Chilwell nurseries, who was considered to be one of the best growers and raisers of florists' flowers in this country. He considered the Alexander to be one of his greatest successes; that it was thought to be a good thing is evidenced by the fact that he sold fifty the first season at a guinea each, and a hundred the next at ros. 6th each—not a bad price for a Polyanthus. I am pleased to hear that this old favourite is still in existence, having considered it to be extinct for many years, as my father made many inquiries for it, and offered a guinea for a plant for years, without avail. The other varieties I have never heard of. Charles E. Pearson, Chilwell.

The Poultry Yard.

A POULTRY KEEPER'S EXPERIENCES .- The question of the raising of eggs and poultry for public consumption is one of exceeding interest, but the item of profit has by many been regarded as so problematical that I take the opportunity offered by the close of the year to give some of my experience as to the profitableness of poultry-keeping in a small way. often read statements similar to that which I am about to make; and whilst admiring the industry shown by some writers in the elaborate statistics furnished, have often doubted their correctness. However, to put them to the test as fairly as possible, I induced my "better half," who is my poultry-keeper, to keep an exact account during the past year of all eggs brought in daily. No account was kept of chickens sold or eaten, as the object of the enquiry was chiefly to ascertain how far, by means of eggs alone, fowls could be made to pay their way. Any further profits arising from chickens eaten or sold may therefore be set against losses from death and other incidental though trifling deductions.

My stock consists now of nineteen hens and a cock of the present year. Perhaps the average of hens has been twenty for the year, certainly not more; but whilst some of the older ones were either killed because hetter for table than for the nest - or, perchance, died-other younger ones came in to take their places as the summer advanced, and no doubt to these younger ones we are chiefly indebted for what eggs we have had of late. My poultry run is about 20 rods in extent, although the hens sometimes get into the adjoining road and field, but their enclosed run does not exceed the space mentioned. They are housed in one corner of a large shed, and are kept clean by means of an oft-raked coal-ash floor, whilst there is ample air. No doubt these are important elements in poultry keeping. Both shed and run bave a northern aspect; and though the shade and comparative coolness is grateful in summer, it is hardly the position I should select for a winter run if I could have my own choice. The food of the poultry consists of Maize and Barley in equal quantities, mixed, given moderately twice a day regularly. To this are added occasionally boiled Potatos, house refuse, a little barley meal to render it palatable, and at times some dry boiled Rice. The fowls are not fattened, but are always in good condition for the table if needed. The entire cost of food purchased for the year amounts to £3 15s.; but if we allow £5 for food of all kinds, and rent of shed-space and run-the latter otherwise almost valueless—a full margin is admitted sufficient indeed to cover all expenses for the year. In previous years I had given the preference to Dorkings, but the

lack of eggs in winter, and the good account of Leg-horos as winter layers I received from a friend, induced me to make a gradual change in my stock; and during the year past I have had as layers quite twothirds white or half-bred Leghorns, a Dorking or two, and a half-bred Bramah or two; the latter of the greatest possible use as setters, for Leghorns are not often broody. During the present year I shall clear out the Dorking blood entirely, and keep Leghorns for layers only.

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It may not be out of place here to remark that, except in the case of a useful mother hen, it is not desirable to keep any beyond the second year; and if hens that have laid well during the summer be caught up and killed in the autumn to make room for yearlings, they can be profitably utilised. These hens, if hoiled for an hour first and then roasted, will be found as tender as chicken, and if in good condition they make first-rate market birds. No doubt myriads of such hens are sold as chickens, the little wrinkle in thus cooking them rendering the flesh tender, if not juicy.

An old lady is reported to have complained that as soon as eggs became dear her hens left off laying them; but the dame's notions of supply and demand were doubtless misty. In any case, it is evident that if some poultry-keepers can obtain eggs when they are dear they will make their fowls much more profitable than will those whose fowls are but fair-weather layers. It is in this respect I have found Leghorns to be such profitable fowls; for whilst they may beand, indeed, are-inferior to Dorkings for table purposes, they still make good plump birds when killed. But, after all, from the egg-raising point of view, the question of table quality is of trifling importance; no one can ever in this matter hope to have their bread buttered on both sides, and if eggs are abundant it is most probable that table quality will not be of the highest. The white Leghorns are of fair size, and lay eggs of good size, and of the best quality relatively, being well fed, having a good run, and being healthy. I doubt whether any eggs excel those we have from our fowls for solidity and quality.

Now as to the egg produce from the twenty hens, as I have said, chiefly Leghorns, during the past year. January gave us 145; February, 165; March, 225; April, 266; and May, 279. This was the highest number obtained during any month; but, allowing for May having more days than April, perhaps that month shows as good a return. Then in June there was a fall to 234; July gave 202; August, 186; September, 178; October, 137; November, 133; and December, 140—thus showing a trifling increase upon the preceding month, due perhaps to the one day more, and to the beautiful mild weather which prevailed for a considerable portion of the time. It will thus he seen that our total of eggs for the year was 2280, giving an average of nearly 120 per hen.

Probably some readers can show far more sensational figures than these, but I am content to tell simple facts that will hardly be doubted, One of these facts is most remarkable; it is that we had eggs few or many, every day in the year-not one was a blank. Of course it must be remembered that 1883 was throughout open and mild, but still it is equally a fact that eggs became very scarce generally in January and February, November, and December; so that it is evident a mild season did not universally help to laying. The best months-March, April, May, and June-gave 1004 eggs, which at an average of 1d, each were worth £4 3s. 8d., whilst the four winter months above mentioned gave but 583; but these sold at 2d, each, and were therefore worth even more than the larger number-thus evidencing the value of winter layers,

Moderately estimating the value of the 2280 eggs at 14d, each, we get as gross receipts the sum of £11 17s, 6d., and, deducting £5 for expenditure, the absolute profit is £6 17s, 6d., or more than 100 per That such results may follow where poultryfarming is adopted in a large way is questionable, but it is absolutely certain that, given a good run of a couple of acres of rough land, a large roomy fowlhouse, food fairly cheap, and refuse abundant, there is no reason why 200 hens, if of the right breed, should not be found nearly as profitable, at least. course those who undertake poultry-farming, whether largely or otherwise, must have some knowledge of their vocation, but the elements of knowledge are simple and easily learned. Gardening and poultrykeeping are closely allied, and both should more often be found in unison. Chanticleer.

ROYAL HORTICULTURAL SOCIETY'S COMMITTEES, 1884.

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Boscawen, Hon, and Rev. J. Townshend, Lamorran, Probus, Cornwall.

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Burnett, J., The Gardens, Deepdene, Dorking.
Crowley, Phillip, Waddon House, Croydon,
Denning, W., The Gardens, Londesborough Lodge,
Webliton, Surgey.

Crowley, Phillip, Waddon House, Croydon.
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worth, Herts,
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irman.—Geo. F. Wilson, F.R.S., Heatherbank, Weybridge Heath. retary.—A. F. Barron, Royal Horticultural Society, Chiswick, W.

SECTION A.

SECTION A.

Vice-Chairmen.—Maxwell T. Masters, M.D., F.R.S.,
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F.L.S., Botanic Gardens, Chelsea, S.W.; John
Fraser, Lea Bridge Road Nursery, Leyton,
Ballantine, H., The Dell Gardens, Epsham.
Dominy, John, 11, Tadema Road, Chelsea, S.W.
Ebbage, H., The Hall, Stamford Hill, W.
Green, Charles, The Gardens, Pendell Court, Bletchingley, Surrev.

ingley, Surrey. Herbst, H., Kew Nursery, Richmond, Surrey. Hill, E., The Gardens, Tring Park, Tring. Hudson, James, The Gardens, Gunnersbury House,

Hudson, James, The Gathers, Acton.
Acton.
Kinghorn, F. R., Sheen Nursery, Richmond, Surrey.
Laing, John, Stanstead Park, Forest Hill, S.E.
O'Brien, James, West Street, Harrow-on-the-Hill.

Williams, Henry, Victoria Nursery, Upper Holloway, N. Woodbridge, John, The Gardens, Syon House, Brentford, W.

[IANUARY 5, 1884.

Vice-Chairmen.—Shirley Hibberd, Park House, Stoke Newington, N.; James McIntosh, Duneevan, Wey-bridge; W. B. Kellock, F.L.S., Stamford Hill, N, Bealby, William, The Laurels, Roehampton Park, Put-ney Heath, S.W.

ney Heath, S.W.

Bennett, H., Shepperton, Walton-on-Thames,
Cannell, Henry, Swanley,
Child, James, The Gardens, Garbrand Hall, Ewell,
Douglas, J., The Gardens, Great Gearies, Ilford, E.
Duffield, G., The Gardens, Bauford Lodge, Winchmore Hill, W.
Eckford, Henry, The Gardens, Boreatton Park, Bascurch, Salop,
James, J., Woodside, Farnham Royal, Slough,
Lathbury, D. C., Woodend Cottage, Witley, Surrey,
Luewelyn, J. T. D., F. L.S., Penllergane, Swansea,
Turner, Harry, Royal Nursery, Slough.

Obituary.

LAST week we had the melancholy duty of announcing in a few lines the death, by his own hand, of one of the very best of gardeners, and one of the kindest hearted of men-THOMAS SPEED, of Chatsworth. At the inquest, which was held on Thursday week, evidence was given by a surgeon to the effect that Mr. Speed suffered greatly from gout, and had been in the habit of taking a medicine which had the effect of causing depression, and the jury returned a verdict of "Suicide during temporary insanity." That poor Speed suffered a martyrdom to gout was well known to a wide circle of private friends and professional acquaintances, and as certain was the knowledge that the loss of one of the most helpful of wives, that he had to sustain a few years ago, preyed heavily on his mind, he being helpless at times through the gout, and left with six children dren to care for. Poor fellow! Deep is the regret of his dren to care for. Poor fellow I Deep is the regret of his many friends that his career should have been terminated in so sad a manner. The deceased was born at Abingdon, in Cambridgeshire, on December 19, 1832, his father being at that time gardener and steward at Abingdon Hall. Here the son commenced his gardening education, leaving in 1851 to take service under his brother, Mr. Joseph Speed, who was then gardener at the Pymmes, Edmonton, and had a high reputation as a skilful plant cultivator. In the following year (1853) Speed was engaged by Mr. William Thomson (now of Clovenfords) as a journeyman in the kitchen garden at Wrotham Park; and twelve months afterwards he became foreman of the department. Subsequently he took came foreman of the department. Subsequently he took came foreman of the department. Subsequently he took charge of the flower garden, conservatory, and forcing departments, and altogether was with Mr. Thomson about four years. In 1856 Mr. Speed became foreman to Mr. Ingram, at Belvoir Castle, and in 1859 he obtained his first head place, being engaged as gardener to the late Sir Edward Walker, Berry Hill, Mansfield, where he made a name for himself as a Grape grower of the highest repute, his practice and his success as a cultivator being then nimself as a Grape grower of the nighest repute, his practice and his success as a cultivator being then a theme of general admiration, Grapes of such size and general excellence as surpassed all that had been seen before in the Midland districts being yearly the result of his skilful management. When Mr. Taplin left Chatsworth in 1868 Mr. Speed was engaged by the Duke of Devonshire to take charge of that prizes were described by the property of the property the Duke of Devolshire to take charge of the princely gardening establishment, and at the Palace of the Peak, notwithstanding his afflictions, he well maintained his reputation. No one who visited him will forget the warmth of the welcome that he will forget the warmth of the welcome that he accorded them, or the evident pleasure that he telt in showing a "practical" the treasures in his charge. We feel as we write these words, as many others we know must feel, the greatest sorrow that so sad a fate should have befailen so good a man.

— We have also with great regret to announce the death on New Year's Day of Mr. BENJAMIN MALLER, of the Burnt Ash Lane Nurseries, Lee, Kent. Mr. Maller had been ill for some time, and at the end of last week appeared to be somewhat better, but he experienced a relapse on Sunday even better, but he experienced a relapse on Sunday evening from which he never recovered, and died on
Tuesday morning, his malady being a diseased liver.
He was a native of Ashling, io Sussex, and in early
life was employed as a journeyman in the gardens at
Stanstead Park, when Mr. Jones was gardener at
that place. From Stanstead he came to London,
and held one or two situations as gardener before and held one or two situations as gardener before commencing business on his own account some years ago. In the nursery trade he soon won the respect of his comperers, being a first-class cultivator, and a thoroughly straightforward man of business. His particular like in business was the cultivation of winter and spring flowering Heaths, and other plants, for what is known as the autumn trade, and in this branch he met with great success, his stocks, which of late years regularly came under he hammer of the auctioneer, being of the very best quality. About five-and-twenty years ago be became a subscriber to the Gardeners' Royal Benevolent Iostitution, subsequently becoming a member of the Committee of Management, an office which he held at the time of his death. He was also one of the founders, and an enthusiastic supporter, of the Lee and Elackheath Horticultural Society—one of those flourishing suburban societies which owe so much of their prosperity to the labours and well-directed energies of men of Mr. Maller's stamp. He enjoyed some practice, too, as a landscape gardener, and in this connection beautified more than one of the old London churchyards. His manly presence, sterling honesty, and thorough good-nature, were qualities that endeared him to many friends; so that his loss will be much more widely felt than by members of his family only. his stocks, which of late years regularly came under his family only.

The Meather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON,

b DAY.	BARO	METER.	7	EMP	ERAT HE /	ruae A18,	OF	du fi Gla Tab	grome- al De- ctions rom isher's les 6th lition.	WIND.	1
MONTH AND DAY.	Mean Reading Reduced to 32° Fahr.	Departure from Average of 18 years.	Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 50 years.	Dew Point.	Degree of Humidity. Sat. = 100.	Average Direction,	RAINFALL
Dec.	In.	In.									In.
27	30.21	+0.32	40.0	35.0	5 0	37 - 3	- 0.3	34.7	91	S.	0 02
28	30.14	+0.24	41.0	37·S	*3·S	39.0	+ 1.5	38.8	99	Calm	0.03
29	30 08	+0.18	40.2	38.0	2,2	38 9	+ 15	31.9	77	Caim	0.03
30	30,23	+0.33	39.5	36.0	3.5	37.6	+ 0.3	36.0	91	N.E.: N.N.E.	0.03
31	30.27						→ I.a		83	N.E.	0.08
Jan, 1	30.08						- 3.2		81	N.E.	0.02
2							+ 1.5		93	E. N.E.	
Mean	30.13	+0.25	39.6	31.8	4.8	37 -3	0.0	34 6	89	N.F.	0.23

27.—Dull, damp, foggy day and night.
28.—Dull and damp; fog all day and night.
29.—Thick fog day and night.
30.—Dull, damp oay and night.
31.—Fine day; dark night; slight raio.
31.—Fine cold day; snow fell between 3 P.M. and 4 P.M.
22.—Fine cold day; slight raio at night.

LONDON : Atmospheric Pressure .- During the week LONDON: Atmospheric Pressure.—During the week ending December 29, the reading of the barometer at the level of the sea increased from 20,00 inches at the beginning of the week to 30.53 inches by 3 P.M. on the 24th, decreased to 30.51 inches by 3 P.M. on the same day, increased to 30.59 inches by 9 P.M. on the 25th, decreased to 30.25 inches by 3 P.M. on the 29th, and was 30.26 inches by the end of the week.

The mean reading of the barometer for the week at the level of the sea was 30.45 inches, being 0.35 inch higher than last week, and 0.37 inch above the average of the week.

Temperature. - The highest temperature in the Temperature. — The highest temperature in the shade in the week was 48° 5, on the 24th; the highest reached on the 27th was 40°. The mean of the seven high day temperatures was 43°.6.

The lowest temperature was 32°, on the 24th; ton the 25th the lowest temperature was 36°.4. The mean of the seven low night temperatures was 36°.4. The mean of the seven low night temperature in one day was 16°.5, on the 24th; and the smallest was 2°.2, on the 29th. The mean of the seven daily tanges was 7°.4.

The mean temperatures were—on December 23, 40°; on the 24th, 24°, 7; on the 25th, 41°.85°.

40°; on the 24th, 42°7; on the 25th, 41°.8°; on the 26th, 30°.8°; on the 27th, 37°.3°; on the 28th, 30°; and these were all above their averages, excepting the 27th, which was 0°.3 below, by 1°.0, 4°.5, 3°.8°, 2°.1°, 5, and 1°.5 re-

Spectively.

The mean temperature was 39°,9, being 0°.8 lower than last week, and 2°.1 above the average of the

week.

The highest reading of a thermometer with blackened bulb in vacuo placed in the full rays of the sun was 55°, on the 23d. The mean of the seven readings was 48°.6.

The lowest reading of a thermometer with its bulb placed on short grass was 22°.5, on the 24th. The mean of the seven readings was 31°.1.

Kain.—Rain fell on the last four days of the week to the amount of 0.10 inch.

to the amount of o.10 inch.

ENGLAND: Temperature .- During the week ending December 29 the highest temperatures were \$4°.2 at Nottingham, and \$4°.9 at Truro and Sunderland; the highest at Bristol was 48°, at Blackheath 48°.5, and at Cambridge and Bolton 49°.1. The general mean

The lowest temperatures were 30° at Sheffield, 30°.6 at Wolverhampton, and 32° at Blackheath and Leeds; the lowest temperature at Truro was 36°, at Plymouth 35°.4, and at Liverpool 34°6. The general mean was

35°.4, and at Liverpool 34°6. The general mean was 33°.

The greatest ranges in the week were 23° at Sheffield, 21°.8 at Wolverhampton, 21° at Sunderland; the smallest ranges were 15° at Bristol, 16°.1 at Cambridge, and 16°.5 at Plymouth and Blackheath. The general mean was 18°.1.

The mean of the seven high day temperatures was highest at Truro, 51°, at Plymouth 49°.1, at Sunderland 48°; and Iwas lowest at Hull, 41°.9, at Cambridge 42°.5, and at Blackheath 43°.6. The general mean was 45°.4.

The mean of the seven low night temperatures was highest at Truro, 41°.1, at Plymouth 40°.3, at Sunderland 38°.7, and was lowest at Wolverhampton, 33°.5, at Sheffield 33°.6, and at Hull 34°.9. The general mean was 36°.9.

The mean daily range of temperature was greatest at Sheffield, 11°3, at Wolverhampton 10°,8, and at Truro 2°,9; and was least at Wolverhampton, 6°,6, at 11ull 7°, and at Blackheath 7°,4. The general mean was 8°,5.

The mean temperature was highest at Truro, 46°, at Hymouth 44°.7, at Sunderland 43°.3; and was lowest at Hull, 38°.4, at Wolverhampton 38°.9, and at Cambridge and Sheffield 39°.2. The general mean was 41°.2.

Rain.—The largest falls were—0.19 inch at Truro and Plymouth, and 0.15 inch at Sheffield and Bolton; the smallest falls were 0.02 inch at Bradford, 0.03 inch at Wolverhampton, and 0.04 inch at Hull and Sunderland. The general mean fall was 0.09 inch. Rain fell on every day in the week at Plymouth.

SCOTLAND: Temperature.—During the week ending December 29, the highest temperature was 58°, at Peth 1; at Greenock and Paisley the highest was 51°. The general mean was 52°. S.

The lowest temperature in the week was 36°, at Leith; at Glasgow and Perth the lowest temperature was 26°. The general mean was 31°.1.

The mean temperature was bighest at Leith, 45°; and lowest at Aberdeen, 40°.5. The general mean was 40°6.

was 42.56.

Rain.—The largest fall was 0.93 inch, at Paisley and the smallest fall was 0.09 inch, at Leitb. Ti general mean fall was 0.47 ioch.

JAMES GLAISHER, F.R.S.

Answers to Correspondents.

JUMPING SEEDS: Scotus, Yes, in 1859. The correct reference is p. 909 of our volume of that year, where you will find this curious phenomenon explained and

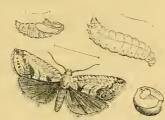


FIG. 6 .- CARPOCAPSA SALTITANS.

the iosect—Carpocapsa saltitans, described. We reproduce the illustration then given, fig. 6.

AENORMAL ACARICS: H. T. Soppitt. We have many times seen double Mushrooms of the character of that you send us, and some triple ones. You will find an interesting article on the subject, and some illustrations from the pen and pencil of Mr. Worthington Smith, in our issue for July 26, 1873.

CIDER APPLES: Not Blue. Apply to the Cranston Nursery Company, Hereford, or some other nursery-men in the West of England.

EDGING TILES: M. Y. The best plan is to dig out a trench of the required depth, level and well ram down the bottom, and on this lay a course of bricks on which to place the tiles in a straight line, ramming the soil down firm on either side.

FREESIA REFRACTA ALBA: S. S. This is a native of the Cape of Good Hope, having a fibrous-coated bulb about the size of the bulb of a Jonquil, linear

lanceolate leaves, and the white finnel-shaped flowers borne on a one-sided curved spike. The flowers open in succession, four to six being open at one time. It does not require any forcing to flower it in winter, a digit position in a temperate house being sufficient light position in a temperate house being sufficient

for it.

HATING MUSCAT-HOUSE: E. W. Jones.— For a house of the width and height stated you would require four rows of 4-inch pipe near the front wall, and two rows at about the same level, forming a parallelogram with two short sides, occupying the rest of the house, leaving space for a path at the back, and one about 4 feet from the front wall. This arrangement will distribute the warmth pretty evenly; but the greater quantity of pipe is placed where the roof is lowest, and consequently, owing to the ascent of the heated air to the highest point, it is most required. A house for any other sort of Grape would do with one-third less pipe, buttils better to have too much than too little heating surface. A saddle boiler exposing 8 feet of surface to the direct action of the fire—that is, exclusive of side fine exposure—would be large enough. HEATING MUSCAT-HOUSE:

NAMES OF FRUIT: C. IV. S. Your Apple is unknown to us, and we suspect with you that it is a local variety only.—R. G. Fig. White Ischia.

NAMES OF PLANTS: J. E. The yellow flower is Cassa corymbosa; and the Orchid Trichosma snavis. Please send better materials next time.

send better materials next time.

Vines: A Learner. If you wish for Grapes without the expense of fuel, you can plant Black Hamburgh, Foster's Seedling, Buckland Sweetwater, Red and Grizzly Frontignan—the two last if you place any value on fine flavour. These would do tegether in one house if thought desirable. For late use and for keeping over the winter the sorts named below may be planted. If started into growth every year early in the spring months they will require fire-heat to start with, and the latest will be benefited by fire-heat in September and October, if not sufficiently ripe in early September. Black Hamburgh, Black Allcante, Madresfield Court, Muscat of Alexandria, Mrs. Pince's Black Muscat, Lady Downe's, and, as a big showy kind, without much else to recommend it, Gros Colmar.

** All communications intended for publication should be addressed to the "Bātiar," and not to the Publisher or to any member of the staff personally. The Editor would also be obliged by such communications being arritten on one side only of the paper and sent as early in the week as possible. Correspondents seeding newspapers should be careful to mark the paragraphs they wish the Editor to see.

FOREIGN SUBSCRIBERS sending Post-Office Orders of POREIGN SUBSCRIBERS sending FOST-OFFICE OF AGE are requested to send them to the Publisher of this journal, 11, Wellington Street, Covent Garden, and to make them payable to William Richards, at the Post Office, Drury Lane, London, W.C.

CATALOGUES RECEIVED.

SUTTON & SONS, Reading-Amateurs' Guide in Horticulture.

CHARLES SHARPE & Co., Sleaford—Farm and Garden
Seed List.

Seed List.

Francis and Arthur Dickson & Sons, 106, Eastgate
Street, Chester-Vegetable and Flower Seeds, &c.

RALPH CROSSLING, Penarth Nurseries, South Wales—
Vegetable and Flower Seeds, &c.

Dickson, Brown & Tatt, Corporation Street, Matchester-Vegetable and Flower Seeds, &c.

W. H. Rogers, High Street, Southampton—Vegetable and Flower Seeds, &c.

Dickson & Robinson, Old Millgate, Manchester—
Vegetable and Flower Seeds, &c.

Robert Vetter & Son, High Street, Exeter—Vegetable and Flower Seeds, &c.

W. Piercy, 89, West Road, Forest Hill, S.E.—Chrysanthemums.

W. Piercy, 99, West Road, Forest Hill, S.E.—Chrysanthemiums.

JAMES DICKSON & SONS, 32, Hanover Street, Edinburgh—Vegetable and Flower Seeds.

GEORGE E. ELLIOTT, Bradford Road, Huddersfield—Vegetable and Flower Seeds.

THOMAS METHYEN & SONS, 15, Princes Street, Edinburgh—Vegetable, Flower, and Farm Seeds.

KELWAY & SON, Langport, Somerset—Farm and Garrant Seeds.

KELWAY & SONS, Crawley, Sousex — Vegetable and Flower Seeds.

CHEAL & SONS, Crawley, Sousex — Vegetable and Flower Seeds.

HARRISON & SONS. Licitoster—General Seed Catalogue.

HARRISON & SONS, Leicester—General Seed Catalogue.
John Hooley, Edgeley Road, near Stockport—General
Nursery Stock.

W. Togogoo, 58, Above Bar, Southampton—Vegetable and Flower Seeds.
WM. LEUGHTON, 89, Union Street, Glasgow—Vegetable and Flower Seeds, &e.
HAMES SCHMICT, Effurt, Germany—Seeds and

COMMUNICATIONS RESEIVED.—R. C.—C. W. S.—S. & H. (too late in the day)—A. C. (please send again, and comply the service of the control of the

DIED, on the rst inst., at Burnt Ash Lane Nurseries, Lee, BENJAMIN MALLER, in the fifty-eighth year of

Markets.

COVENT GARDEN, January 3.

BUSINESS very quiet, but prices of best goods firm. Kent Cobs stagnant, rates giving way. James II chber, Wholesale Apple Market.

FRUIT .- AVERAGE WHOLBSALE PRICES

	s. d. s d.	s. d. s. d.
Apples, 1/2-sieve	10-40	Lemons, per case15 0-25 0
Cobs, per 100 lb 1:	25 0-135 0	Pears, French, doz. 1 6- 9 o
Figs, per dozen	10	Pine-apples, Eng., lb. 1 6- 2 0
Grapes, per lb	10-40	- St. Michael's, each 5 o- 8 o

VEGETABLES AVER	AGE RETAIL PRICES.
s. d. s. d.	
Artichokes, Globe,	Horse Radish, bund. 3 o- 4 o
per doz 3 o- 5 o	Lettuces, Cabbage,
- Jerusalem, bush, 4 o	per dozen r o
Beans, French, lb 1 c	Mint, green, bunch 1 o
Beet, per doz 1 o	Mushrooms, p. baskt. 1 0- 2 0
Cabbages, per doz 1 0- 2 0	Onions, per bushel. 4 0
Carrots, per bun o 4- o 6	- Spring, per bun, o 6
Cauliflowers, Eng-	Parsley, per bunch o 4
lish, dozen 2 0- 3 0	Radishes, per dor 1 6
Celeriac, per root 0 4- 0 6	Rhubarb, per bund. o 9
Celery, per bundle 1 6- 2 6	Salsafy, per bundle o 8
Cucumbers, each o 6- 1 o	Seakale, per puonet 1 6
Endive, English, per	Small salading. pun. o 4
dozen 1 o	Spinach, per bushel 4 o
Garlic, per lb o 6	Tomatos, per lb o 9- 1 o
Herbs, per bunch o 2- o 4	Turnips, new, bun. o 4
POTATOS, - Kent Magnums, 901	to 100s. per ton; do., Regeats,
gos, to 95s.; Char	npions, Eos. to gos.

CUT FLOWERS -AVERAGE WHOLESALE PR

CUI I LUWERS HIERA	GE WHOLESALE I KICES
s. d. s. d.	s. d. s. d.
Abutilon, 12 bunches 2 0- 4 0	Marguerites, 12 bun. 6 o- 9 c
Arum Lilies, 12 blms. 6 0-12 0	Mignonette, 12 bun, 6 o- 0 0
Azalea, white, 12 spr. 1 0- 2 0	Narcissus (Paper-
Bouvardias, per bug. 1 o- 1 6	white) 20-40
Camellias, per doz 3 o- 6 o	Pelargoniums, 12 spr. 1 6- 3 o
Carnations, 12 blms. 1 0- 3 0	— 200al, 12 sprays 0 9- 1 0
Chrysanth., 12 blms. 2 0- 4 0	Poinsettia, 12 blooms 6 0-12 0
- 12 bunches12 0-30 0	Primula, double, bun, 1 0- 1 6
Cyclameu, 12 blooms o 3- o 6	- single, 12 bun 6 0- 9 c
Epiphyllum, 12 blms. o 6- 1 o	Roses (indoor), doz. 2 o- 6 o
Eucharis, per doz 6 0-12 0	coloured, doz 3 c- 9 o
Gardenias, 12 blms18 0-36 0	Tropæolum, 12 bun, 1 0- 2 c
Heliotropes, 12 sp o 6- 1 o	Tuberoses, per doz 4 o- 6 o
Hyacinths (Roman),	Tulips, 12 blooms 1 0- 2 c
12 sprays 1 6- 2 0	Violets, 12 bunches 1 0- 1 6
Lapageria, white, 12	- French, per bun. 2 c- 2 6
blooms 3 0- 6 0	- Parme, per bun, 5 o- 7 o
- red, 12 blooms 1 o- 3 o	Wallflower, 12 bun 4 o- 6 o
Lilac, white Fr., bun. 8 0-10 0	White Jasmine, per
Lily-of-Valley,12spr. 4 0- 6 0	buach o 6-10
D	W D

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

Aralia Sieboldi, doz.12 0-14 0	Ficus elastica, each 1 6- 7
Arbor-vitæ (golden),	Foliage Plants, vari-
per dozen 6 o-18 o	ous, each 2 0-10
- (common), dozen 6 o-12 o	Hyacinths, per doz. 9 0 12
Azaleas each 26-50	- Roman, per doz. 18 0-24
Begonias, per doz 6 0-12 0	Lily of the Val., pot 3 c- 4
Bouvardias, doz12 0-18 0	Marguerite Daisy,
Cyclapien, extra size,	per dozen12 0-18
each 5 0-10 0	Myrtles, per doz 6 0-12
Dracæna term. doz30 o 60 o	Palms in variety,
- viridis, per doz12 0-24 0	each 2 6-21
Epiphyllum, per doz 18 0-30 0	Pelargoniums, scar-
Erica, ext. size, dor. 36 o 60 o	let, per dozen 6 o 12
Euonymus, various,	Poinsettias, per doz.12 o 24
per dozen 9 0-18 0	Primula, single, doz. 4 o- 6
Evergreens, in var.,	Solanums, per dozen 8 o-15
per dozen 6 0-24 0	Tulips, per dozen 6 0-12
Ferns, in var., dozei. 4 0.18 o	

SEEDS,
LONDON: Jan. 2.—Messrs, John Shaw & Sons,
Seed Merchants, of 37, Mark Lane, report that
more disposition for business in farm seeds is shown
now that the holidays are over. Red Clover seed in all
positions exhibits considerable firmness. In white seed
a substantial rise has been established. In Trefoil there
are but few transactions. Canary and Hemp seed in the
absence of dealings show no variation in values. Spring
Tares meet at present with scarcely any attention.
Feeding Linseed continues firm.

CORN.

At Mark Lane on Monday there was very little business in any kind of grain. For both Wheat and flour quotations were nominally unaltered Marking Earley series were steady but slack. Beans the turn in buyers' favour. Peas 17, and Maize 6d, cheaper on the week. Oats supported late value, but were slow of soile.—On Wednesday English Wheat was held for steady value, but met very little attention. Foreign tended in favour of buyers. Flour remained nominally unaltered. Both malting and grinding descriptions of Barley were firm, with an upward bias. Beans and Peas moved off in small quantities at Monday's casier rates. Maize remained dull at Monday's quotations. Oats were quiet at unchanged values.—Average prices of corn for the week ending Dec. 29;—Wheat, 391; Barley, 311, 7d.; Oats, 191, 1d. For the corresponding period in 1882;—Wheat, 401, 11d.; Barley, 321, 3d.; 304s, 221, 5d.

POTATOS.

POTATOS.

The Borough and Spitalfields Markets reports state that there are fair supplies and moderate demand, at the following prices:—Magnum Bonums, 80x. to 90x.; Regents, 90x. to 80x; I Champions, 60x, to 70x; and Victorias, 70x. to 90x. per ton.—The imports into London last week consisted of 295 bags from Harlingen, 56 Bruges, 240 Brussels, 20 Boulogne, 105 Hamburgh, 30 bags 187 sacks from Rouen, 70 barrels Boston, 20 eases Malta, 92 tons Erquey, and 4 barrels from New York.

SEASON 1884.

In again calling the attention of Market Growers, Gardeners, and Amateurs to Clay's Fertiliser, we feel a pride in stating that it has increased in popularity year by year, until it has attained the position of being considered an absolute necessity for the production of Fruit, Flowers, and Vegetables of the highest excellence.

Unfortunately, this success has induced some unprincipled persons to adulterate the Manure, causing great disappointment to users and serious annoyance to ourselves. We have therefore decided, after the 1st of January, 1884, to send out all Manure (except 1s. packets) in Scaled Bags; and we trust buyers will, for their own protection, insist on having it in our bags with our Trade Mark and Seal attached, for which alone we shall be responsible.

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OF THE BEST QUALITY ONLY.

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SHARPE'S PARAGON PEA The earliest large blue wrinkled Marrow.

15. 6d. and 25. 6d. per packet.

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CHARPE'S EPICUREAN CUCUMBER. Finest for quality, colour, and flavour; will produce fruit all the year round.

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NISBET'S VICTORIA TOMATO.

SHARPE'S CONQUEROR BEAN.

CHARPE'S EMPEROR BEET.

EARLY SNOWBALL CAULIFLOWER.

15. 6d. per packet. ECLIPSE CAULIFLOWER.

SHARPE'S PRIZE WHITE SPANISH ONION. 12. per packet.

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The earliest of all; has been lifted in seven weeks from time of planting.

12. per pound.

SHARPE'S DUKE of ALBANY POTATO. The perfection of Potatos for main crop; is fit for use from July to March.

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This is an excellent Marrow, being very hardy, prolific, and of the finest flavour.

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COOLING'S LEVIATHAN COS LETTUCE.—A decided improvement upon all Bat's cos varieties. The largest and hardiest Lettuce in cultivation. In sealed packets, 12, post-free.

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					,	 		
1.1	. 0	RCE	HIDS			s.	d.	
12 choice free flow	vering s				• •	 21	0	
12 ,,	2.7	ex	etra size	e		 30	0	
12 11 100 in 50 sorts for	24	Ve	ry cho	ice sel	ected	 42		H
	• •					 200	0	
100 in 100 sorts for	••		••			 400	0	

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 "THE RED PASTE BALLS," for Codditioning Horses.
- "THE GASEODYNE," for Parturition in Mares, Ewes, &c,
 "THE BRONCHOLINE," for Husk, Hoose, or Cough in Sheep or Calves,
 "THE ALCOHOLIC ETHER," for Colds and Chills,
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GOLD MEDAL from the International Show, Christchurch, New Zealand, March, 1882, FOR THEIR "ORIGINAL"

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TO HER MAJESTY.

By Special Warrant, dated December 27, 1865;



TO THE PRINCE OF WALES,

By Special Warrant, dated February 10, 1866.

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Everybody likes it.

"PERSIAN FOOD." Perfectly Pure.
"PERSIAN FOOD." Most Nutritious and Strengthening.

"PERSIAN FOOD." Easy of Digesti
"PERSIAN FOOD." Flesh-forming.
"PERSIAN FOOD." Fat-forming. Easy of Digestion.

"PERSIAN FOOD" is recommended by the most eminent Members of the Medical Profession.

INDIGESTION ABOLISHED.—Those who suffer from the tortures of indigestion should not fail to try "PERSIAN FOOD." It is pleasant to the taste, thoroughly satisfying, and easy of digestion. It is, in fact, the most remarkable Food that was ever introduced.

Equal to Meat for Delicate Stomachs.

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"Dear Sir,—I have not employed any the the PERSON FROUD to shock you have sort me a speciment, but I have made a trait of the the PERSON Froud to the supplying a light, bland and pleasant form of natramed in an amount pleasant with it, as supplying a light, bland and pleasant form of natramed.

"Yours faithfully," "J. MACPHERSON." " J. MACPHERSON."

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Nurseries 150 Acres.

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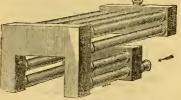
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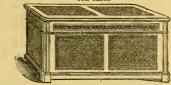
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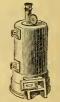
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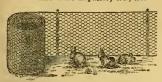
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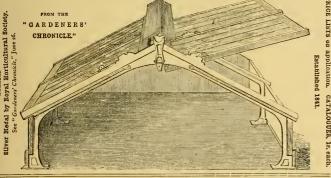


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We have searched out nearly every garden in Europe and tested their specialities, and we ask all to visit our garden at Swanley, at all seasons, see and compare our varieties with any ers in the world. We not only grow the best, but we apply all scientific means possible to improve every flower year by year—not in one feature, but in all points and ways, so as to give customers the best and most pleasing results of what they purchase.

THE UNITED KINGDOM SAYS THUS:

And on February 2 we hope to show what the Horticultural Press says of our

PLANTS AND SEEDS.

From Mr. W. COLLINS, Ballonatray, Irriand, 7 on. 3, 1831.—"I have the greatest pleasure to testifying to the excelent quality of your Dahliss, which I received from you last April (1832); they were decidedly the most beautiful flowers dever saw. I should be willing to tell you some I though to be the best, but I am afraid I would not be doing justice to the others."

sell before writing you. Then size and common my expectations, Thom Mrs. SHRUBB, Boldre Grange, Lymington, Hants, From Mrs. SHRUBB, Boldre Grange, Lymington, Hants, Mrs. 2, 1882. "I hope if you are ever in my neighbourhood with me. They are the admiration of every one for miles and miles round, and every one who sees them says they never know there were such flowers; they have enormous trusses, and enormous flowers on the truss, many of the latter considerably exceed: a laches, across. They ought to be one of your best distributions."

enormous Howers on the truss, many of the latter considerably exceed z inches across. They ought to be one of your oest advertisement and they ought to be one of your oest advertisement. TRANTER, Esq., 54, Woodstide Terrace, Great Lever, B. TRANTER, Esq., 54, Woodstide Terrace, Great Lever, B. TRANTER, Esq., 54, Woodstide Terrace, Great Lever, B. The Month of the plants; they are of excellent quality, and give great satisfaction."

From Mr. T. ANDERSON, 7, Powys Street, Tyldesley, Road, Tyldesley, near Manchester,—"Verbenas all right, and in first-class condition; they looked quite fresh, just as if they out pack them is wooderful."

From Mr. S. WOOD, 21, Mankland Street, Middletbried, May 14, 1833.—"I may say that although I could have obtained from other sellers the same variety at perhaps a less figure. I am quite coordineed that ever since I commenced business with you I have never received any stuff that has given me more complete substantial and the study of t

ANTS AND SEEE

From C. FOWLER, Esq., Brilish Boys School, Chickster,
June 27, 1883.—"Roses arrived this morning as fresh as the
proverbal Daisy. They are beautiful. Many thanks."

From J. H. OSBURNE, Esq., Northélid, Bromley, Kent,
June 23, 1883.—"Thanks for sending me the plants to my
ellas; I believe the speedad contrion, the packing marvellas; I believe the production of the packing marvellas; I believe the production of the packing marvellas; I believe the production of the packing for days
without taking harm."

From Mr. WM. THOS. HAYES, Elmowood, Sudbury, Harrom.—"I beg to say that the Roses arrived safely, and have
given great satisfaction."

The plants arrived quite safe. The Chry
santheniums are spendid plant."

Longraigne, Foulks Mills, Wesleyd, Irelant, July 17, 1883.

"Ms. J. W. DEANS is much obliged for the cuttings and
plants received, not only safely, but so beautifully fresh, last
and plants received, not only safely, but so beautifully fresh, last
week. Giad the splendid lay-leaf Giore of Orleans was inweek. Gind the splendid 19V-leaf Giore of Orleans was an
and heart of the plants of the splendid plants of Orleans was an
and the myslendid on the campiles of the cuttings and
an excursion to Mr. Campils' Home of Flowers, when they
will, no doubt, have a rich treat in seeing the gardens and
greenhouses, and be tempered to lay out a good dea!"

From Mr. H. GANT, Market Gardens, Policales, Sussex, a
thank you for the extra plant syou seat. You evidently understand the transit of plants."

31, 31, 110t "LANGSTON, Esq., a p. Westprinster, Yusy 3 thank you for sending n well-tested plants (n. d sc. aps)."



Mr. E. Howden g. 1883. — ly to hand,

SPARKS. The m Court, Tiver-m Court, Tiver-m The cuttings ad, and in splendid

GOLD MEDAL, LONDON.

From A. BAINES, Esq. Uley House, near Dursley, Sept. 11, 1883.—"The cutting of ronal Pelargonium Aurora Dursley, the role of the form you in the spring is now in flower; the truss is 10½ inches over, and the tips 2½ inches across.

From Bir, JAMES BENNEETT, Gardner, Threshill, near From Bir, JAMES BENNEETT, Gardner, Threshill, near Report Bir, 1884. Est Benneett, Threshill, near Bir, 1884. Est Benneett, 1884. Est B

selves, and have done so for the last 1; years, to my knowledge 'From W. F. BALDING, Esq., Ruchmond Villa, Silves hill. St. Leonards-on Sea, Nov 27, 1833.—"The selection of Roses is excellent, the plants being strong and healthy and the variety were relacing."

is excurrent in the exercise of the exercise o

Profit Str. 1 LEES, correst networks, sept. 22, 1032—1 am much obliged to you for your kindness in seading so quickly my capital order.

From Mr. M. WOODCOK, Des/ord Farm, Chatbill, Norshumberland, Sept. 27, 1831—11 have received the box of plants and cutting safety, and many thanks, both for your form Mr. D. CLARKE, 21, Park Street, Wellington, State, Oct. 1, 1832—11 Caranisons to hand this morning at 10,30. 1 beg you to accept many thanks for your literality, also your concentral way of forwarding orders. I observe at 10,30. 1 beg you to accept many thanks for your literality, also your concentral way of forwarding orders. I observe the state of the National Society's Show, July 21.

From G. BARKETT, Esq., Winter's Hall, Bramley, Gnild. Ford, Surery, Oct. 1833—12 Begs to thank Messes. Cannell Gred, Surery, Oct. 1833—18 Begs to thank Messes. Cannell Society's Show, July 21.

From Mr. W. MONK GIBBON, Templetshelin, Adamstone, Eunicorfs, Oct. 1, ... "Thanks Messes. Cannell formon, Eunicorfs, Oct. 11. "Thanks Messes. Cannell formon, Eunicorfs, Oct. 11. "Thanks Messes. Cannell for Surery, I will be a splendd order."

From Mr. CHARLES LAWLEY, 179, Window Steet, Simmyham, Oct. 15, 1831—11 is with pleasure I have to morm with the hand of the new to the surery of the surery of

From P. E. PAGE, Esq , Charterhouse, Godalming, Oct. 22, 883.—" Enclosed is a cheque for your admirably executed

From P. E. PAGE, Esq. Charlerhouse, Godalming, Oct. 20, 1883 — "Enclosed is a cueque for your admirably executed order."

From Mr. B JAMES, Church Cottages, Robeston Wathen, Narberth, Yan. 22, 1883 — "The Cineraiis from seed that I had from you are very fine ones. I have some of the plants with the commentary of the plants of the plants

have leen requested by a triend to obtain from you a practiveseed,"
From Mr. H. GOWER, Gardener, Hammersfield, Feurharst, March 5, 183,—"The seeds I had from you list year
harst, March 5, 183,—"The seeds I had from you list year
and Cherarias, some of the flave had some splended Frunciss
and Cherarias, some of the flave had some splended Frunciss
and Marigolds the finest we ever had, sinches across, some of
them more, and wonderfully double."
From Mr. GUSTAVE HILDEBRAND, 72, 76Dreys Road,
Clophon.—"The Bower seeds had of you a munch ago have
From G. W. DUTTON, Saq. Summersfield, 18, Chrone
From G. W. DUTTON, Saq. Summersfield, 18, Chrone
From G. W. DUTTON, Saq. Summersfield, 18, Chrone
From G. W. DUTTON, Saq. some of the seed of the first of the seed of the se

is migoficent.

From Mr. W. H. DICKSON, Nonpareil, St. Peter's, Yersey, Dec 24, 1883.—The Chrysanthemum cuttings forwarded artived safely on Friday night. Many thanks for supplying such good stuff."

Dec. 24, 183,—The Chrysanthenuments, 35, 183,—The Saley on Friday night. Many thanks for supplying such good stuff.

From Miss C. RUSSELL, Patrick Street, Tramore, Iveland, Nov. 19, 1883,—"I wish to say the plants arrived quite for sending them so nicely; with many thanks' obliged to you for sending them so nicely; with many thank? Obliged to you for sending them so nicely; with many thank? Obliged to you for sending them so nicely; with many thank? Obliged to you for sending them so nicely; with many thank? Obliged to you for sending them so nicely; with many thank? Obliged to send the sale of the

twelve stamps for the Catalogue you sent, and am very much obliged."

From WM. COLES, E.19, Winchester, Dec 21, 1833—
The fliwers you sent me arrived quite safely (although the "The fliwers you sent me arrived quite safely (although the great said and the safely (although the safely although the safely although the safely although the safely although the safely said said said safely and said safely although the safely alth

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IMPORTATION of LILIES from Japan.

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Covent Garden, W. C. while Great Rough S. King Street,
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Covent Garden, W. C. who Mond Down S. King Street,
AlaiFapast 12 of Clock precisely, an Importation of
Soon LILIUM AURATUM, in the finest possible condition;
1500 L. LONGIFLORUM,
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Also fine Brecion Lilies, in great variety.
An importation of the beautiful and rare forms of FREESIAS,
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Mexico, &c.

On view morning of Sale, and Catalogues had.

On view morning of Sale, and Catalogues had.

Wednesday Next —(Sale No. 6565.)

HARDY PLANTS and BULES.

J. C. STEVENS will SELL by HARDY PLANTS and BULBS.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38. King Street, Covent Garden, W.C., on WEDNESDAY NEXT, January 16. First-cless STAYDARD and DWARF ROSES. Choice for the street of the stree

On view morning of Sale, and Catalogues had.

Thursday Next.—(Sale No. 6567.)
3000 LILIUM AURATUM just received from Japan, in extra fine condition.

M.R. J. C. STEVENS will include the above in his SALE by AUCTION, at bis Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, January 17, On view morning of Sale and Catalogues had.

Thursday Next.—(Sale No. 6547.)

ODONTOGLOSSUM EDWARDI.
CATTLEVA TRIANÆ, labgue varieties.

MR. J. C. STEVENS will SELL by
AUCTION, at his Great Rooms, 18, King Street,
Covent Garden, W.C., on JHURSDAY NEXT, January 17, at
bail-past 12 o'Clock precisely, by order of Mr. F. Sander, the
grandest importation ever offered of

grancest importation ever othered of a ODONTOGLOSSUM EDWARDI. The masses are it ultogether extra health. O. Edwardi is the most difficult species in existence to import, hence this sound lot will give a good apportunity to purchase this rare and superb Odonto

glossum.

Also a grand lot of CATTLEYA TRIANÆ, from the same locality whence we have had the grand varieties now in collections; together with some other excellent Imports.

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Monday Next.

6000 LILIUM AURATUM.

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Will SELL by AUCTION, at their Central Sale

Rooms, 67 and 68, Cheapside, E.C., on MONDAY NEXT, at
half-past 12 o'Cluck precisely.

half-past iz o'Clock precisely, Gooo LILUIM AURATUM, just received from Japan, in splendid condition.

A very fine collection of ENGLISH-GROWN LILIES, iceluding L. Browni, gignateum, Washingtonianum, Thomp-sonianum, Harrisi, pardalium, Humboldi, and others; the beautiful FREESIA REFRACTA and REFRACTA ALEA (course). benutitif FREESIA ABETTANDER OF STATES of the best named (scarce conduct and Hullstandard ROSES of the best named some; and a wariety of other PLANTS and BULES. On view morning of Sale. Catalogues had at the Rooms, and New Broad Street, E.C.

New Broad Street, E.C.

Friday Next.
ONCIDIUM MACRANTHUM HASTIFERUM.
ODONTOGLOSSUM HALL!
ODONTOGLOSSUM HAULI
ODONTOGLOSSUM HRUBYANUM, in Flower.
MESSRS. PROTHEROE AND MORRIS
Have received instructions from Mr. F. Sander to SELL
y AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY NEXT, January 18, at half-past 12
oClock precisely all et of ONCIDIUM MACRANTHUM
HASTIFERUM, in splendid condition;
And the finest importation ever offered of the white-lipped
ODONTOGLOSSUM HALLI, among them the finest masses
yet seen of any OdontoglossUM HALLI, among them the finest masses
yet seen of any OdontoglossUM HALLI, among them the finest masses
UM, PIUUMNA FRAGRANS, and ODONTOGLOSSUM
ALEXANDER, finest type.
On view morning of Sale. Catalogues had at the Rooms, and
8, New Broad Street, E.C.

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AND BURTENSHAW, on WEDNESDAY and
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They are all well selected samples, and free from disease. Seed Growing Establishment, Wisbech.

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SHARPE'S EPICUREAN CUCUMBER Finest for quality, colour, and flavou will produce fruit all the year round. 2s 6d. per packet (10 seeds).

SHARPE'S TELEGRAPH CUCUMBER. 15. per packet.

A SWARBY PARK MELON.

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THE POMEGRANATE TOMATO. One of the greatest acquisitions in the Tomato ever submitted to the Trade.

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SHARPE'S VICTOR POTATO. The earliest of all; has been lifted in seveo weeks from time of planting.

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SHARPE'S DUKE of ALBANY POTATO. The perfection of Potatos for main crop; is fit for use from July to March, 6d. per pound.

VEGETABLE MARROW-Muir's Prolific

Hybrid.
This is an excellent Marrow, being very hardy, prolific, and of the ficest flavour.

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Post-free on application. TRADE PRICES ON DEMAND.

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SEED GROWERS AND MERCHANTS,

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IMPROVED DWARFs d BRUSSELS SPROUTS p pkt. 1 Very prolific, compact, and of splendid flavour.

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May be had of the following Firms:-

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SPECIALITIES:-ROSES.

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FRUIT TREES,
Apples, Pears, Plums, Cherries, Peaches, Nectarines, Apricots, &c., grown in every variety of form.

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EARLY NONSUCH s. d. CABBAGE .. per packet 1 6 Very early dwarf compact variety, of delicious flavour.

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PRIZE COB FILBERT TREES,—Gentle-men destrous of obtaining the true WEBB'S PRIZE COB FILBERT TREES for present planting, should send their olders to
Mr. COOPER, F.R.H.S., Calcot Gardens, Reading, of whom
alone the various soits can be obtained.
Price LISTS oo application.

PICEA PUNGENS.—The Blue Spruce of Colorado; see Gardeners' Chronicle, Dec. 8, page 735. Fice plants of the true glaucus variety, with blush tint, 12 to 18 inches, 55. each. Fice plants of the green variety, 22 to 18 inches, 15. 6d. each. Piced LISTS of California Coolies seat free on application.

MORRISON BROTHERS, Aberdeen.

JAMES SMITH AND SONS, Darley Dale Nurseries, near Matlock, beg to offer the following to cice plants:—n 42ALEA PONTICA, to 1½ foot, 20x. per 100, or 283x. per 1000.

BERBERIS DARWINIL, 10 1½ foot, 28x. per 100, or 160x. per 1000; 1½ to 2 feet, 28x. per 100, or 226x. per 1000; 1½ to 2 feet, 28x. per 100, or 226x. per 1000, or 226x. per 1000.

EAST INDIAN ORCHIDS.

THE LIVERPOOL HORTICULTURAL COMPANY

(John Cowan), LIMITED,

Have pleasure in announcing to their numerous Patrons and the Public generally, that their first consignment of EAST INDIAN ORCHIDS for this season will be to hand in a few days.

The Company's Collectors, in forwarding this consignment, state that it includes many splendid Specimens and several New and Rare Varieties.

Full particulars will be sent on arrival of this consignment to all who kindly send their Name and Address to

THE LIVERPOOL HORTICULTURAL CO. (John Cowan), LIMITED, THE VINEYARD, GARSTON, LIVERPOOL.

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DENDROBIUM RHODOCENTRUM.

HEATH & SON are now offering this rare Dendrobe, from 10s. 6d. to 21s. each, flowering plants.

- 1 ODONTOGLOSSUM DELTOGLOSSUM, with spike of 13 Flowers.
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For description, see New Plants. Sizes and Price on application.

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ODONTOGLOSSUM EDWARDI. CATTLEYA TRIANÆ-IBAGUE VARIETIES.

R. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, January 17, at half-past 12 o'Clock precisely, by order of Mr. F. SANDER,

The grandest importation ever offered of ODONTOGLOSSUM EDWARDI; the masses are in altogether extra health. ODONTOGLOSSUM EDWARDI is the most difficult species in existence to import, hence this sound lot will give a good opportunity to purchase this rare and superb Odontoglossum.

Also a grand lot of CATTLEYA TRIANÆ, from the same locality whence we have had the grand varieties now in collections; together with some other excellent imports.

On view morning of Sale, and Catalogues had.

AUCTION ROOMS AND OFFICES, 38, KING STREET COVENT GARDEN, LONDON, W.C.

FRIDAY NEXT.

ONCIDIUM MACRANTHUM HASTIFERUM. ODONTOGLOSSUM HALLI. ODONTOGLOSSUM HRUBYANUM (in Flower).

MESSRS. PROTHEROE AND MORRIS have received instructions from Mr. F. SANDER to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY NEXT, January 18, at half-past 12 o'Clock precisely,

A specially grand lot of ONCIDIUM MACRANTHUM HASTIFERUM, in splendid condition

And the finest importation ever offered of the white-lipped ODONTOGLOSSUM HALLI, among them the finest masses yet seen of any Odontoglossum.

ODONTOGLOSSUM HRUBYANUM, in flower. A lovely yellow ONCIDIUM; ODONTOGLOSSUM SANDE FRAGRANS, and ODONTOGLOSSUM ALEXANDRÆ, finest type. ODONTOGLOSSUM SANDERIANUM, PILUMNA

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Dwarf-trained and Maiden Fruit Trees and Roses, of fine quality, grown on fresh land at Bush Hill.

APRICOTS, trained, 30s. and 36s, per dozen.

CHERRIES, in variety, trained, except May Duke and Morello, 21s. and 24s. per dozen.

PEACHES and NECTARINES, trained, £12 105. p. 100. PEACHES, Dwarf Maiden, £3 15s. per 100.

PLUMS, trained, £7 10s., £8 15s., and £10 per 100.

PLUMS, Dwarf Maiden, £2 105. per 100. ROSES, Standard and Half-standard, £3 10s. to £4 per

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OOLING'S NE PLUS ULTRA by the Royal Horicultural Society, and is the earliest and most productive Dwarf Bean in existence. Invaluable for forcing. In sealed pint packets, as: 6d.; post-free zs. gd

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COOLING'S OMEGA BEET.—
The richest coloured and most delicately flavoured variety. In sealed packets 1s., post-free.

COLING'S MATCHLESS BROC-COLI.—The original stock of this splendid mid-season variety. Per packet 18, post-free.

ROLLISSON'S TELEGRAPH CUCUMBER, 12. 6d, per packet.

VEITCH'S TENDER and TRUE CUCUMBER, 12. 6d, per packet.

Both the above Cucumbers are very pure stocks, which we have selected with special care for several years past, and we recommend them with every confidence to the Market or Private Grower.

Trade prices on Application

GEO. COOLING & SON., NURSERYMEN AND SEEDSMEN, BATH.

CABBAGE PLANTS,—One Million of Early Rainham and Enfield Market, 32. per 1000 of 1200; Red Dutch, for peckling, 52. per 1000; all from the very best seek. ASPARAGUS ROUTS, three years old, 182. per 1000; two years old, 192. per 1000; First-class Roots best Sonereign st. per dozen. FENNYROYAL and RUE ROUTS, 51 per 32. per dozen. PENNYROYAL and RUE ROUTS, 51 per 500. ONION SEED, White Spanish, 32. per pound; Nuesham Park, 32. 64, per pound; all new and genuine. From 701 os 1000 in the Magnum Boumm POTATOS, £4 per 101; and 82 toos of true Magnum Boumm POTATOS, £4 per 101; and RICHARD WALKER, Market Gardens, Biggleswade, Beds.

RICHARD WALKER, Market Gardens, Biggleswade, Beds.

HOUSE'S PERFECT MARROW.—Growth large handsome pods, well filled with large Feren Marrow Peas, after the "Ne Plus Ultra" type. After several years trial and comparison with other Wrishded Peas, this Pea has proved to with confidence be recommended for Esthbilion and Market with confidence be recommended for Esthbilion and Market purposes. When so many good Peas are offered, it is a difficult task to impress upon the minds of the public the superiority of one Pea over another. In offering this Pea, allow me to say that it was raised by the late Mr. F. Stevenson (Gardener over 50 years). He kept it for several years, and compared it over 50 years). He kept it for several years, and compared it with all the best sorts, but I cannot find any so god for cropping and quality; also several experienced persons in the trade, who have seen it growing and tested the quality, confirm the same. This gives me confidence in recommending it.

A few Testimonals as follows:—

the same. This gives me confidence in recommending it.

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From Mr. HARDING, Gardener, Orton Hall, Peterborough.— Sir.—I have tried your Perfect Marrow Pea, and I
borough.— Sir.—I have tried your Perfect Marrow Pea, and I
strooper grower, and heavy cropper, with well filled pods, and
excelled quality."
From Mr. CHESHIRE, Gardener, Conington Castle.—
"Dear Sir.—Your Perfect Marrow Pea is the sort I have long
desired to have—a heavy cropper and excellent flavour."
From Mr. VERDON, Gardener, Harlanton, Hall, Granstam.— Sir.—Your Perfect Marrow Pea is the finest I have ever
see the second of the principal shows in the coming season.
Secretaries of Shows will oblige, before filling up their Schedules, by communicating with me.

Orchids a Speciality.

The stock at the Clapton Nursery is of such magnitude that, without seeing it, it is not easy to form an adequate conception of its unprecedented extent.

HUGH LOW & CO.

very cordially and respectfully solicit an inspec-tion by all lovers of this interesting and beauti-ful class of plants, whether purchasers or not.

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HARRISONS' **NEW EARLY "ECLIPSE"** PEA.

A grand new Early Pea, introduced by us ast season.

The haulm is of a peculiar light green colour, only 2 feet in height, the pods of a lively green and well filled, and is the heaviest cropper for an early variety we have ever seen. The seed is blue and similar in appearance to the "Kentish Invicta," but it is hardier and even earlier than that excellent variety.

Retail Price—Per Pint, Is. 6d.; per Quart, 2s. 6d. Trade Price—Per doz. Pints, 12s.; per doz Quarts, 21s.

TESTIMONIALS.

From Mr. John Swift, Manchester.
"October 24, 183,—I coosider your New Early Eclipse Pea
to be the best early Pen I have ever grown, both for earliness,
size of pods, and appearance."

From Messrs. Taber & Cullen, Rivenhall.
"October 25, 1883.—The New Pea, 'Early Eclipse,' we had
from you last season is a good early blue, and valuable for
poddiog, all comiog in together."

poddiog, all comog in together."

From Mr. Samuel Taylor, Pershore.

"October 23, 1832.—I found your New Early Eclipse Peaver early and protific. Sown by the side of Kentish invicta, they were ready to pick nearly a week before that variety, and I picked nearly 4 pots (40th ger pat) off the little patch of ground, and had 8s, per pot for them; when the other early ones were ready the pick had dropped to 5s. I hope you will be able to spare the 4 bushels I spoke for in the summer."

From Mr. W. Hull, Evesham.

"October 28, 1883. - Your New Early Eclipse Pea is the best early Pea I ever had; it is a good cropper, very early, and gave me every satisfaction. I hope those you have sent me will prove as good."

"July 5, 1833—I find your New Early Eclipse Pea an early and good cropping variety. When you are quoting the price per bushel for the coming year, I should like 2 quarters of the same stock of Pea."

The above Testimonials are only a few from the large number we have received.

Trade LIST Free on application.

HARRISON & SONS.

SEED GROWERS, LEICESTER.

CHOICE GARDEN SEEDS

AT VERY MODERATE PRICES.

CARRIAGE FREE.

A Descriptive CATALOGUE of which will be sent free on application

THOMAS KENNEDY & CO.,

SEED and NURSERY ESTABLISHMENT,

DUMFRIES.

SELECT GARDEN SEEDS

CARRIAGE PAID.

Our DESCRIPTIVE CATALOGUE for 1884.

CONTAINING A COMPLETE LIST OF

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Is now ready, and will be, sent, Post-free, on application.

IRELAND & THOMSON. 20, WATERLOO PLACE, EDINBURGH.

WAITE, NASH, HUGGINS AND CO.'S NOVELTIES AND SPECIALITIES FOR 1884.

WAITE'S NEW EARLY CABBAGE.



A new and distinct variety, equally adapted for spring or autumn sowing, and coming unto use fully ten days before any other kind. The habit of the plant is dwarf and compact; the heart is of medium size, very firm, and with very few loose leaves. The colour is a distinct pale green, and the Cabbage, when cooked, does not possess the coarse flavour so objectionable in the dark-leaved varieties.

Price, 1s. 6d. per packet.

WAITE'S IMPROVED LONG-POD BEAN.

The improvements which will be found in this variety of the well-known and ever popular Long-pod, fully justify us in saying that it is the finest, most productive and most useful Bean ever raised. The pods are very long, containing seven to eight fine Beans in each, and are borne in great profusion on plants of branching habit, in clusters of three and four at a joint. Although the pods are not so large as those of the Seville and Aquadulce, the Bean is in reality much more prolific, for as many as forty-seven pods were counted on one plant in August last. In addition to this it is much superior to the varieties named, as the Beans remain tender and juicy for a very much longer time.

Price, 2s. per quart.

WAITE'S NEW CABBACE LETTUCE,

A splendid and distinct variety, especially adapted for summer use, and destined to take the same high position among Cabbage Lettuces as is occupied by Waite's Alexandra among Cos varieties. It has the same pleasing colour and general appearance as "All the Year Round," but is quite distinct from that variety, both in colour of seed and the habit of the plant, as it grows to nearly double the size, and stands for a very much longer time before running to seed. Although it attains to such a large size it forms nice tender hearts in the earliest stages of its growth, remaining sweet and crisp to the last. In our trial grounds this season it remained fit for use nearly three weeks later than any other variety.

Price, 1s. 6d. per packet.

THE WARMINSTER ONION.

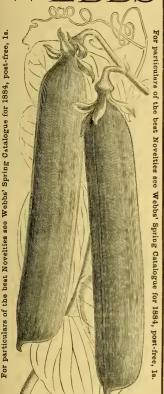
Originally selected from the White Spanish this variety possesses, in a marked degree, all the merits of that well-known kind; in addition to which there have been developed, by continuous and judicious selection, increased size and weight, earliness, purity of colour, symmetry of form, mildness of flavour, and good keeping qualities.

Price, in sealed 1 ounce packets, 1s.

May be obtained from any respectable Seedsman throughout the Kingdom.

THE BEST NFW PEAS.

PEAS IN 1833.—"The Stourbridge Feas always turn out well, and Electric Light, Kinver Gem, and Stourbridge Marrow are amongst the finest of our Peas."—J. Murr in the "Journal of Horticulture," Sep-tember 13, 1883.



STOURBRIDGE MARROW.

The finest second early Pea—either for ordinary garden cultivation or exhibition purposes—that has ever been offered to the public. It is a remarkably strong and vigorous grower, and an enormous cropper; it attains a height of from \$10.45 feet, and bears immense pods, which are produced in pairs, and each pod contains from nine to eleven large Peas of the most delicious flavour.

3s. 6d. per pint.

WEBBS' NEW PEA, THE WORDSLEY

This valuable new Pea is the result of crosses between Advancer, Little Gem, and Prizetaker, and whilst possessiog all the good qualities of the two former varieties, it has both the constitution and productiveness of the latter.

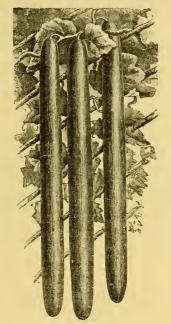
3s. 6d. per pint.

THE QUEEN'S SEEDSMEN,

WORDSLEY, STOURBRIDGE.

CHOICE

SPECIAL SUTTON AND SONS desire particularly to call attention to the fact that they are scrupulsoly careful out to introduce anything as a way and they are scrupulsoly careful out to introduce anything as a way are of other kinds in cultivation. Their Trial Graume advance of other kinds in cultivation. Their ities at home, but by the leading seedsmen in Europe and America, to be the most extensive and complete in the world; and here, under Messrs. Sutton's own personal supervision, some Soco trials of Vegetable Seeds, Flower Seeds and Potatos are anonally made in a most complete and exhaustive manner.



SUTTON'S PURLEY PARK HERO

Awarded a Special Certificate and 1st Prize against twelve competitors at the Reading Horticultural Society's Show, May 17, 1883; was also awarded a Cultural Commendation from the Forey Horticultural Society on Baly 22, 1883; and took ist Furg at the Summer Show of this Society at South Kensington,

Per packet, 3s. 6d., post-free.

NEW CELERY SUTTON'S WHITE GEM. See page 9 of last week's paper

For full particulars of

SUTTON'S NOVELTIES for 1884,

SUTTON'S SPECIAL LIST, Gratis and post-free on application.

THE OUEEN'S SEEDSMEN, READING,



THE

Gardeners' Chronicle.

SATURDAY, JANUARY 12, 1884.

THE NEW PLANTS OF 1883.

(Continued from p. 10.)

N resuming our brief sketch of the novelties of the past year-that is, of new plants which during the year have either made their first appearance, or which have been brought into prominent notice-we next take

THE FERNS,

of which the number has been more limited than usual, though one or two very interesting additions have been made. The Andean Cyathea microphylla will probably prove to be the most valuable and important acquisition of the year in this family. It is a small Tree Fern, with a slender caudex, which attains some 4 feet in height, and no doubt assumes an erect position, though the plant shown by Messrs. Veitch & Sons, and recently certificated, had the stems curved and ascending, which we suppose to be either an accidental or juvenile state, probably the latter, it being similar to the mode of growth seen in the stems of young plants of Cyathea dealbata, which, though in the young state at first prostrate and then ascending, ultimately become quite erect. The fronds of this new Cyathea are gracefully spreading, 2 to 3 feet or perhaps more in length, but never attaining a large size, ovate in general outline, tripinnately divided, and peculiarly neat-looking from the small size of the ultimate pinnules, which are ovate-oblong, deeply pinnatifid, with oblong blunt-ended, entire lobes, each traversed by a single vein, at the base of which, on the fertile part, is seated a solitary sorus. It comes from the Andes of Peru and Ecuador, and is remarkable for its compound fronds and minute pinnules, which are the smallest and neatest to be found amongst the Cyatheas at present known.

Perhaps even more remarkable, on account of its dissimilarity of aspect from the usual forms assumed by its congeners, is the Adiantum novæ-caledoniæ, which was first shown in 1883, by Messrs. W. & J. Birkenhead, at the great summer show at Manchester, and certificated, and which afterwards obtained a similar award in London from the Floral Committee. Its aspect is that of Adiantopsis rather than of Adiantum, only it is normally tripinnate instead of being radiately branched; thus the fronds have something of a stellate character, while the increased size of the stellate character, while the increased size of the posterior basal pinnule gives it a pedate outline. Altogether its aspect is peculiar. The caudex forms a small erect crown, from which spring the stipites of the usual blackish-purple colour, and supports the pedato-pentangular lamina, which is roundish in circumscription, tripinnate in composition, and of a darkish green colour; the pinnæ all, however, have narrow elongate pinnules, which are lanceolate in form, drawn out at the point in an attenuated caudate slightly falcate form, and thus they rather resemble those of some Cheilanthes in form, but have the truly adiautoid fructification-that is, resupinately borne on the cordate orbi-Two other Adiantums of garden origin cular indusia. are worthy of mention here. The one, A. Weigandii, is of American origin, whence it was acquired by Messrs. Veitch; it has something the aspect of the useful decorative A. decorum, the fronds being of a moderate size and of a similar triangular form, and divided, like that, in a tripinnate manner, but the divided, like that, in a tripinate mainter, but the pinne and lower pinnules are long-stalked, so that the centre of the frond is open, while the apical parts both of frond and pinne are crowded; and thus, together with the distinct form of the pinnules, ovate from a broad base, and freely and conspicuously

lobate, yet appearing little divided, in consequence of the narrowness of the sinuses, the plant takes on a thoroughly distinctive aspect, more evident to the eye than can be readily word-painted. The other is a new garden hybrid raised between A. cuneatum and A. Bausei, and is of the stature and general character, with small wedge-shaped pinnules, of the former, and deflexed pinnules those of the latter, thus taking on a truly intermediate character; from this peculiarity it is called A. cuneatum deflexum. The variety, hybrid or otherwise, was raised by Mr. F. Bause, now of Portland Road, South Norwood, whose name is familiar to hybridists.

From the New Hebrides, thanks to the intervention of Messrs. Veitch, there has been added to our collections the fine and evergreen Hare's-foot Fern, Davallia brachycarpa. This species belongs to a small set which is closely allied to the Darcoid group of Asplenium, and is distinguished from the more typical Davallias by their short oblique solitary sori. It will be found a very ornamental stove plant, with large arching fronds, firm in texture, having a broad ovate quadripionatisect lamina, of which the ultimate segments are wedge-shaped, trifid or bifid, bluntish, the fertile ones falcate, with a solitary sorns on the ioner side of the vein.

Closely related to the Ferns are the club mosses, among which we have to make the addition of Selaginella canaliculata, the S. caudata of Spring. This is one of the climbing species, with the habit of S. Willdenovii (known as S. cæsia arborea), growing to a height of 5 or 6 feet, with stout pale brownish red stems, which root freely from the lower parts, and above bear pinnate branches a foot long, the smaller branchlets of which [are also pinnately divided; the lower are entire, ribbed, and semi-ovate, the smaller intermediate ones being similar in character.

STOVE AND GREENHOUSE PLANTS.

One of the most interesting and richly coloured of the plants of this section is the Rhododendron Curtisii, introduced from Sumatra. It is a dwarf, bushy evergreen shrub, growing about 2 feet high, and clothed with lance-shaped leaves and terminal clusters of brilliant crimson bell-shaped flowers, small in size, as compared with more familiar sorts, but borne in such profusion as to render the plant a highly conspicuous object, and well worthy of the certificate voted to it at South Kensington in November last. Another interesting plant, ornamental in character, and of a profusely-blooming habit, is the Medinilla Curtisii, from the same country, and introduced by the same collector. It is dwarf, bushy, and much branched in its manner of growth, as well as extremely floriferous, the flowers being white, with purple stamens, and produced all over the plant in terminal and axillary corymbose heads. The leaves are opposite, sessile, ovate acuminate, deep green, the margins and mid-rib red; it is remark amongst other peculiarities, for its coral-red rachides and pedicels. The Anthurium ferrierensex, of which we had previously heard, has been shown in flower during the past year. It will be recollected that it is a hybrid, raised at Ferrières, between the scarlet Andreanum and the white A. ornatum. It will doubtless be a favourite plant when well established, the foliage being of large size and heart-shaped, in this respect taking after A. ornatum; while the spathe, which is heart-shaped and nearly 6 inches long, is of a beautiful rosy or cherry-red colour, the spadix being about 4 inches long, and erect, of an ivory-white, becoming orangeyellow at the tip. Wormia Burbidgei is a striking looking stove plant for a large collection. It is a Dilleniad, with very large leaves sometimes 11 foot long, and of a bright green, and clear yellow circular flowers nearly 4 inches across; and has been intro-duced from Borneo by the collector, whose name it bears. M. André's Caraguata sanguinea, from the Andes of New Grenada, is a fine Bromeliad, though passed by by the Floral Committee, who do not appreciate the beauties to be found in this particular family, which are certainly not general favourites in this country. Here we have a moderate-sized plant, with a dense tuft of rosulate leaves, of which the inner ones are of a deep blood-red colour, with which the small white flowers nestling deep down in the centre are in strong contrast. It is beauty of a special type, and if not appreciated in this country the more's the pity, Of another type, that of the Asclepiads, is the Hoya linearis sikkimensis, a remarkable species, well adapted for growing in baskets, having slender flaccid pendent hairy stems, with soft fleshy subterete leaves, and terminal umbels of white wax-like flowers, with a small corona of five yellowish lobes.

We turn next to a series of bulbous plants, which are worth attention, and as a class are becoming more so every day. The most useful is probably the Eucharis Sanderi, a species of well marked character, clearly distinguishable from its allies by its plicate ovate leaves and smaller white flowers, which, however, are in other respects much in the way of those of E. amazonica; notwithstanding their smaller size the plant is fully as useful, and quite as handsome as its congeners. Crinum ornatum, possibly the same as C. Kirkii, is a handsome stove bulb from tropical Africa, and produces many-flowered umbels of shallowly bell-shaped flowers, which are white, with a broad stripe of red running through the centre of each of the six segments of the perianth; both have been certificated, and are certainly very handsome objects for stove decoration, though, like all bulbous plants, now considered less generally useful and acceptable than other plants, such as those of shrubby habit. They are, however, again making way in public estimation, and possibly may soon achieve a wide popularity. Crinum zeylanicum reductum, a new form from Zanzibar, has, as Mr. Baker puts it, the special merit, from a horticultural point of view, of possessing "a dwarf, compact habit, and large showy flowers." The ensiform leaves form a rosette of about a dozen about the scape, which is under a foot long, supporting an umbel of four flowers, which have a green tube, 5-6 inches long, and a limb of elliptic segments, which are white, with a red central band, just as in the typical zeylani-It is not improbable that these three forms, which have turned up in different places, at different times, may have a very close relationship.

One or two interesting new Cycads have been recently brought under notice. There is the Indian Cycas Beddomei, which is in the way of C. circinalis; the stems of the plants grown at Kew are only a few inches high, the leaves 3 feet long, the petioles quadrangular, having a few minute teeth in the upper part, the leaf-segments about half-an-inch wide, and the cones (anale) about 13 inches long and 3 inches in diameter, these having the sides acuminate from a deltoid base, those of the upper half being deflexed. It is found in the peninsula of India. Cycas elegantisma has been shown and certificated, and is an elegant plant, with recurved pinnate leaves of a deep shining green; but we are not aware if it has undergone botanical scrutiny. Finally, in Dioon spinulosum we have a truly distinct Mexican novelty, differing from Dioon edule in the segments of the leaf being much broader, and armed with thorny teeth, the number of those found in fully developed leaves of D. edule. T. Moore.

(To be continued.)



SARCANTHUS LENDYANUS, n. sp.*

THIS Annamite novelty is rather near to Sarcanthus termissus, Rchb. f., but it may be immediately distinguished by its linear, blunt, bilobed leaves, as well as by the distinct structure of the flowers, which stand in a small loose panicle. Sepals and petals greenish, with a fine purple disc. Lateral lacinize of the liproundish, with introse angles, orange with two purple lines, central lacinia oblong, white with purple spots. Column white with purple spots. The blunt spur is as long as the purple ovary, and has a small septum in its apex. The characteristic Sarcanthus callus under the column is oblong, retuse at its apex, where it runs out each side in a spreading angle. It was imported from Saigon by Major Lendy, Sunbury House, Sunbury-on-Thames, and whose a name it justly bears. H. G. Robb, f.

SACCOLABIUM GIGANTEUM (Wall.), VAR. ILLUSTRE, nov. var.

I have been often asked about Saccolabium illustre. I learn from Mr. Sander, who sends me a

* Sarcanthus Lendyanus, n. sp.—Affinis S. termisso, Rchb. f. Folis linear-ligulatis apice obtine bilobis, particula paululum for the property of the property

very rich inflorescence of it, that this is the name of an elder friend of mine, I having named it in January last Saccolabium gigantenm for Director Linden. I could indeed not foresee then what appears to be the case, that, by richer colours, larger spots at the tops of the sepals and petals, and a brigher-lip, it was most probably superior to the elder Birmese plant, just as the Assamese Dendrobium Wardianum appears constantly superior to the Birmese one. I also hear the illustrious variety has longer and broader leaves. H. G. Rekh f.

BOUVARDIA SCABRA, H. and A.*

This novelty is an exceedingly attractive and pretty species, and one of the handsomest of the genus. It is a valuable acquisition as a decorative at this season of the year-the flowers, which are larger (1/2 inch in diameter) than those of most of the other species of Bouvardia, being of a bright cheerful pink colour, and very freely produced. grows 12-18 inches high, and has terete, hairy, herbaceous stems, with distant whorls of acuminate leaves, narrowed at their base into a very short petiole, generally three, rarely four in a whorl, subscabrous on both surfaces, the midrib and veins very prominent beneath, the lower leaves 2-3 inches long, I-I1 inch broad, the upper gradually smaller. Flowers in dense corymbose cymes; the pedicels, bracts, and calyces pubescent; calyx lobes subulate, recurved, spreading, 3-3½ lines long; corolla glabrous, the tube 10-12 lines long, marked with four grooves at its apex, whitish; limb of four spreading, broadly elliptic-ovate, subacute, bright pink lobes, throat of tube whitish. It is a native of Mexico, where it was first discovered by Hartweg. The characters which mark this elegant species are the prominent veins on the under-side of the leaves, the long, slender, squarrose calyx-lobes, and the broad spreading lobes of the corolla. N. E. Brown.

SABAL UMBRACULIFERA.

HORTICULTURALLY this is a Palm of great importance, and its value in that respect must be estimated not only by its intrinsic merit as a decorative plant, but also by the great range of temperature in which it will give satisfaction, and the multitudinous variety of purposes for which it can be utilised. may be grown in either stove or conservatory, and in summer it may be placed out-of-doors, or used in the decoration of any building, dwelling-house or otherwise. For table decorations the leaves are rather gross in their dimensions, but the plant can easily be replaced for this purpose by others of a similar habit but more graceful in their leafage. The most important feature of this Palm, however, and the one that will give the best impression of its bold and majestic proportions, is when it developes a trunk, and bears aloft its tuft of enormous fan-shaped leaves.

In order to develope this character rapidly, it must be kept in a moist stove temperature. It is one of the tallest of the genus, although it will by no means rival its closely related ally the Tallipot Palm of Ceylon, annely Corypha umbraculifera, conceroing which travellers are wont to relate many wonderful stories. This latter moreover is seldom cultivated, and is by no means so ornamental in a young state, owing to its slowness in development from seed. There is an important distinction however in the flowering stage—that whereas the Corypha flowers only once, yielding up its life a sacrifice to the production and perfecting of fruit, the Sabal, after attaining a fruiting size, remains almost constantly laden with it in various stages of progressive maturity.

A fine specimen in the Palm-house at Kew, with a trunk about 25 feet in height, will bear out this statement. There are several much taller Palms, but none of the fan-leaved type will match it in hold and massive outline. The great branching panieles of fruit hang from the axils of the leaves, eliciting well merited admiration from thousands of visitors. The berries remain in a green state for a long time, but when in a state of incipient decay they assume a black colour, and being about the size of Cherries, many visitors seem impressed with the idea that they are Grapes, or something similar, and consequently out of place. They are sweet and similar in taste to Dates; but the succulent and juicy matter is too scanty to be of any consomical importance. The greater part of the berry, economical importance. The greater part of the berry.

^{*} Bouvardia scaora, Hook. and Arn., Bot. of Beechy's Voyage, p. 427.

which is somewhat pear-shaped, is occupied by a hony globose somewhat depressed seed—flattened on the underside.

As the flowers are perfect so are the seeds, and in this iostance the minute embryo embedded in the bony perisperm may be detected with the naked eye, in the shape of a small knob or protuberance, showing the position of the radicle on one side, towards the flattened base of the seed. If these seeds were somewhat larger the bony perisperm could be utilised for the purposes of turnery, in the same manner as that of the vegetable ivory Palm or even that of Corypha.

ORCHID CULTIVATION FOR AMATEURS.—II.

In visiting gardens or nurseries where Orchids are largely grown, and uniformly well grown, one important fact must perforce receive the attention of a careful observer. In no two places are the houses, the temperatures, or the composts employed alike. As a fact, general results are better and more alike than the variability of the cultural means employed lead one to expect. In a word, the amateur cannot too soon learn the great central fact in "good garden "-a fact exemplified every day in horticultural practice-viz., that there is more than one way, indeed there are often many ways and means, of attaining success in Orchid culture, as in other gardening operations. It is this fact which renders it so difficult to give detailed advice in print, since the exact practice adopted under one set of conditions becomes wrong partially, even if not wholly so, amid other surroundings. To be equally successful with his plants under different circumstances is the true test of the gardener, be he amateur or professional.

Now, if I were asked what of all others is the most important factor in connection with Orchid growing, I should unhesitatingly answer, the atmospheric conditions of the house or houses. You may pot your plants when and how you like, but you will have no permacent success if your atmosphere is not right. I do not mean to say that if the atmosphere be genial you need not be careful of your time and manner of potting, but what I wish to impress on the amateur is, that of all the conditions essential to success this question of temperature—the due balance of heat, air, and moisture—is of all others the first to demand attention.

In December, 1882, I wrote to Dr. Paterson, asking him for some particulars as to the temperature in which he had grown those magnificent Vandas which attracted so much attention when sold in Edinburgh. Here is his reply, under date December 26:—" My warmest house during the last two months has ranged about an average temperature of 50° in the morning (sometimes as low as 45°), and I find that Vandas, Aerides, Saccolabiums, &c., grow and flower splendidly, and Phalænopsis Schilleriana and P. Luddemanniana do well with the same treatment. Whenever the temperature outside (i.e., in the open air) is at or over 50° I always give plenty of air at all times. The air of an Orchid-house should be fresh and sweet—never 'siufly,' dry, and burning, as we too often find is the case in many house. Such an atmosphere favours the development of all sorts of insect pests and disease, and ultimately destroys many valuable and rare plants."

Now 45° in the morning sounds very low, especially when we remember the plants named, and that it occurs (occasionally, miod) in the warmest house; but then we must remember that the fall has been gradual during the wintry night, starting, say, at 60° or at 65°, and slowly cooling down, until the minimum is reached, so that the thermometer has not been at 45° more than an hour or two at the most. Now even in tropical regions a fall of 20° is not unusual at night, and although 50° is a safer and better minimum or morning temperature for a warm house I would much rather see the glass at 45° than have the "hurning" smell from the pipes to which Dr. Paterson and all good growers have the strongest objection.

The way in which a plant-house is heated is most important. Amateurs, as a rule, at the beginning of their experience are simply in the hands of a local hot-water engineer or hothouse builder who contracts for the work at the lowest trade prices. If the latter knows his business he will recommend that sufficient piping be employed, and will see that it is properly distributed, so as to act most efficiently, but it happens in most cases that too

little piping is employed in the first instance, and this results in much trouble and annoyance. A little extra "first cost" expended in piping will soon be saved in labour and fuel. Wherever too little piping is used trouble comes in several ways. very cold weather the fire must be driven at full blast, and scorching hot pipes are the result. You complain, only to hear that the heat must be "got early in the night, otherwise the glass is too low in the morning. This system of "firing up" at night is wrong in theory and practice alike, for it is now an accepted fact that the highest temperature is only really beneficial to the plants during the earlier part of the daytime, when sunlight is most active. On the other hand, the lowest temperature should be that of the night time, and "firing up" should begin in the morning, not at night, as is too often the rule at present. In many cases the boiler is blamed, and a more powerful one is put in, all to no purpose, for if a small boiler could heat the water to boiling-point, or nearly so, a large one can do no more; and in nine cases out of ten it will be found that an insufficient radiating surface or length of piping is the cause of irregular heat. A large body of water heated, say, to 160°, is far better, and gives a more genial tem-perature at less cost. Less labour in stoking and less fuel are required than when an insufficient supply of piping necessitates a roaring fire, and water as near boiling-point (212°) as possible whenever there is a cold wind or a sharp bite of frost. Even although many amateurs know all this without the telling, it is astonishing how rarely we find "slow fires, geoial low and airy night temperatures in actual operation. Only, however, where such are the rule can Orchids be easily, permanently, and economically grown, F. W. B.

NURSERY NOTES.

THE EXOTIC NURSERY, EDGBASTON, BIRMING-HAM.—Amongst a number of plants that are most useful during the autumn and winter, and particularly well grown here, is Centropogon Lucyanus, a plant that has been several times lately favourably spoken of, and which deserves to be much more generally known than at present. Mr. Spinks strikes it in the spring, growing it on in 6-inch pots through the summer similarly to other soft-wooded autumnflowering stove subjects. The shoots are each sup ported by a short stick for about half their length thus allowing the extremities to arch over; in this way the numerous bright crimson tube-shaped flowers stand straight up above the leaves, having a telling effect. It is here largely used for furnishing, for which purpose it is well adapted, the bright flowers and neat habit of the plant admitting of its being employed where coarser growing things would be unsuitable. It is equally seviceable for cutting.

Euphorbia jacquiniæsfora, as grown here, would surprise any one who has only been accustomed to see this grand winter blooming plant done in an ordinary way. The cuttings are put in in spring, five or six together, in small pots, and when well rooted the whole, without separation or disturbance, are at once transferred to 5 or 6-inch pots, in which they are grown on and flowered; they are never stopped, but let to extend as far as the liberal treatment they receive enables them to do. In each pot two or three of the plants take the lead of the rest and keep it, the strongest reaching from 6 to 7 feet, and are as thick at the hottom as one's little finger, bearing grand sprays of flowers. When the plants are as strong as these they produce a second or third lot of bloom finer than those forthcoming in the first instance from weaker examples. The principal portion of the stock forms a long row in one of the houses with their heads close up to the roof, in which position they are all through the summer, lowering the pots as the tops grow. In such little pots these big heads naturally get too topheavy to stand; to meet this at the latter end of the season they are plunged in larger pots, but do not root through. They are liberally fed through the summer with Clay's Fertiliser, and occasionally with soot-water. Foinsettias are well and extensively grown, both the old P. pulcherrima and one here grown under the name of P. superbiens, a much finer sort than the old one, with broader flatter bracts, the colour bright crimson shaded with violet.

Some of the hest managed Lily of the Valley we have seen in December was here just coming to its best; 30,000 crowns are forced. Eucharis of the different kinds are made a speciality, and grown in quantity so as to keep up a continuous supply of their pure white scented flowers. Amongst a large stock of the best kinds of Palms suitable for furnishing Phœnix rupicola is particularly well managed. This is one of the handsomest species in cultivation, and is worthy of a place in every garden where elegance of form is duly appreciated. In Ferns, of which the best decorative kinds are much in demand, Adiaotum Lathomii is an especial favourite, as it deserves to be, with the distinct and handsome form of A. tenerum. It combines a beautiful arching habit in the fronds, which adds much to its appearance. Of other things grown for decorative use is the elegant twining Myrsiphyllum asparagoides, which is planted out in a bed at one end of a house, where its roots, in the form of suckers, run freely, pushing up quantities of shoots, which are trained to thin strings. Where green garniture of a flexible light character is wanted this plant stands unequalled; its thio thread-like stems clothed with their pretty leaves can be employed where most things would be too heavy. It is much used in this way in America, where, we understand, it is sold by measure, fetching about 20 cents per yard of the shoots.

THE JENSENIAN METHOD OF POTATO CULTURE.

To reply to Mr. Worthington G. Smith's remarks upon the Jensenian method of Potato culture is to me a very pleasant task, because these remarks embody the views of one who, having made a special study of the subject, does not adopt that tone of supercilious superiority which is sometimes affected by great men. On the contrary, he is not above discussing other people's statements, and has been at some little trouble in the matter of microscopic measurements and numerical calculations. There is no doubt of the beneficial results practically obtained by a sufficiently high and a sufficiently early moulding of the Potato plant as a preventive against the disease. No one has called Mr. Jensen's statistics in question upon this score; the difficulty, however, is to make them harmonise with our Anglican notions of the lifehistory of this parasite.

Mr. Jensen, writing to a contemporary last year," says :- "Before publishing my treatise I placed the manuscript before Mr. Carruthers, the consulting botanist to the Royal Agricultural Society of England, soliciting his assistance in revising the treatise. He owned that he had been impressed by the very extraordinary practical results of my experiments, and returned a very polite and kind answer; but as he was quite certain that the spores (or their sprouting germs) were not able to penetrate the skin or corky layer of the tubers, he thought the whole foundation of my system was wanting, and he could therefore, of course, not recommend or assist the publication of my treatise. So that, having three of our leading scientists against it-Mr. Smith, Mr. Carruthers, and Mr. Murraythere is no fear of the Jensenian method dying out from "over credulity."

The first point Mr. Smith raises is concerning the tube experiment, in which a layer of compressed earth is claimed to have filtered out and retained a certain number of spores that were contained in water poured into the upper end of the tube. As for the diameter of the tube, and the exact way in which the lower end was closed, I cannot at the present moment When this tube say, but will endeavour to find out. had r inch of earth compressed to three-quarters of an inch placed at its bottom, water containing 30,000 spores was poured into the upper end. The water percolated through the earth and escaped below, was examined and found to contain 2000 spores; hence 28,000 were retained in the earth. As I understand from Mr. Jensen's letter to me in which he describes this experiment these numbers are only approximate. He does not pledge his word of honour as a Danish gentleman that the number of spores poured in was exactly 30,000; it might have been 30,001. or 29,999. He counted, as I understand him, the number of spores in a drop of the water he poured into the tube, and he also counted the number in a drop which came out at the bottom; most likely he counted the number in several drops, and took the mean, and so obtained the approximate numbers above given.

Mr. Smith thinks it is an impossible task to count the number of spores in a drop of water, and goes into

an elaborate calculation as to how many feet a drop of water would appear to measure when magnified 400 diameters, which comes to a "sphere of above 8 feet in diameter !" This may be perfectly true, and doubtless is, if Mr. Smith says so; but there is the fact that we are constantly viewing spores in drops of water, and are never practically inconvenienced by this enormous aqueous spheroid. To count a flock of sheep is by no means easy to a novice, and even practised hands, when absolute accuracy is demanded, mark each one as it is counted with a spot of red paint; but I do not suppose Mr. Jensen adopted this plan. The facility with which the spores contained in a drop of water can be counted depends on the size of your drop for one thing, and upon the number of spores in it for another. You can let fall a drop from a capillary pipette on a cover glass for a hanging drop culture, in which the spores can be counted, as I am sure Mr. Murray will bear me out, with the greatest ease. If there are only ten or a dozen spores in a much larger drop they could be enumerated easily enough; but if you took a drop charged with hundreds instead of units, the process would be

The second great difficulty Mr. Smith finds is the great size of the grains of the finest sand as compared to that of the zoospores. This idea, too, seems to have enamoured Mr. Murray* in his lecture upon the Potato disease at the Parkes' Museum. Mr. Smith has told us how many zoospores can lie upon a grain of Croydon, Reigate, Gray's Thurrock, and Stoke Newington sands respectively. Both these gentlemen seem entirely to forget, however, that it is not the size of the grains of sand we have to consider, but that of the interspaces between them. I readily admit that a single layer of grains of sand would practically offer no resistance to the passage of zoospores, but how many millions upon millions of layers would there be in 4 inches of compressed sand? Mr. Smith tells us accurately enough the size of each grain, but he has not calculateddoubtless a mere oversight-the diameter of the interspaces between the grains. Professor Tyndall found cotton-wool an effectual filter for the germs of putrefaction contained in the atmosphere. Now these germs are infinitely more minute than the zoospores, yet a plug of cotton-wool is a complete barrier against them. I am not aware that Professor Tyndall ever calculated the number of germs that would have to be laid side by side in a row to equal in length an ordinary cotton fibre, but I am sure if this were done Mr. Smith's figures would sink into insignificance beside

As Mr. Jensen gives a figure in his pamphlet† of the conidia and zoospores side by side, so I think we may credit him with knowing something of the physiology of the subject. The figure is taken from De Bary, but I know it does not follow that because a writer makes use of De Bary's figures, therefore he knows as much about the subject as this great master himself does. Mr. Jensen, however, in this part of his pamphlet describes the formation of zoospores, and in various places refers to them by name. At p. 55, for instance, he describes an experiment in which he employed them.

I really cannot agree with Mr. Smith that the common-sense view of the case is that the skin of every diseased Potato has been injured by a wire-worm, snail, insect, bird, rat, mouse, rabbit, or other animal. On the contrary, the vast majority of diseased tubers are, according to my experience, without any mark of external injury.

When a discovery of any sort is made, it usually has to pass through three stages before becoming generally accepted. At first it is pooh-poohed as unworthy of attention, then it is laughed at as being so utterly ridiculous, and then people say it is no discovery at all, but a simple and obvious fact known to every one for years.

When this stage is reached the discoverer may congratulate himself that the world is ready to believe him. I have anxiously looked out for some indication of this final stage in connection with the Jensenian system, but hitherto with little success. It seemed to me, if Mr. Jensen's method of Potato culture be a efficacious as he says it is, amongst the thousands of Potato growers in this country, some one must have noticed the advantage of high moulding, even if they did not understand the precise reason for it. There were, it is true, a few correspondents at the time Mr. Jensen's pamphlet first appeared, who indicated in an

indefinite sort of way, that the idea was not new to them, but nothing that I saw had the ring of authority about it. It was not until this summer that the first claim for precedence came. It was from a horticulturist in whose garden I did an experiment in high moulding in July last. He told me that many years ago he had observed the fact, that some Potatos he grew in the West of England were accidentally moulded much higher than usual, and that as a consequence they escaped the disease, while those of his neighbours suffered severely from it.

I was, therefore, greatly pleased when Mr. Smith was good enough to bring Dr. Lang's papers * under notice in the Gardeners' Chronicle (vol. xx., p. 697). In this essay, to which a prize was awarded in 1858, presumably by the Royal Agricultural Society, Dr. Lang, after treating of the various methods of Potato culture, goes on to speak of the disease. All the facts with which everybody is now familiar concerning the structure and physiology of the Peronospora were evidently unknown to him; for he speaks of its attacking the Mulberry, Lilium lancifolium, &c. He refers to the inutility of chemical and other manures in checking the disease, excepting lime and salt, which he considers to some extent beneficial, and then proceeds to say (p. 74):-" It was remembered that in 1847 and 1848, when the disease appeared to be greatly on the increase, and threatened to be, as it really was, most destructive, a man at Whilborough, on dry days, in order to save his Potatos, instead of digging them up, made the earth very fine, earthed the stalks up very high, and saved his crop most effectually." + He then mentions the case of a friend of his who from carelessness on the part of his men had a large number of Potatos left in the ground: in the following year, at Dr. Lang's suggestion, these plants were earthed up many times, so that "this piece of ground looked as if it were studded with bee-bives scattered at random over it. He had such a crop as at that time I had never seen. Dr. Lang seems to have been led to adopt this plan from reading a paper by T. A. Knight, of Downton Castle. (What true Woolhopean can hear the name of Downton without experiencing a thrill of joyous memories !) The essayist goes on to say (p. 77), "Failing them all chemical remedies, when applied on a large scale . . . the experiment at Whilborough became important. It was observed on taking up many acres of Potatos by many men, that no Potato covered with more than 3 inches of soil was ever diseased." Again, "I have seen scores of bushels of Potatos dug, but I have never seen or heard of one diseased Potato being found 4 inches under the surface of the ground. It will be at once seen-and too much stress cannot be laid on the fact—that the disease is in an exact ratio to the proximity of the tubers to the surface." The author then gives an experiment On September 18, 1857, three pits were made 10 inches deep, and about the same diameter; three white kidney Potatos were placed horizontally on the bottom of each pit, and just covered with a little fine earth; then another layer of Potatos, similarly covered; and then a third layer, so that the whole consisted of three layers of Potatos, with just earth enough between them to keep them from touching each other, the uppermost layer having about 21 inches of earth over it. One of the pits (No. 3) had a large slate laid over it; upon the others a quantity of diseased leaves and stems were placed, and then watered with half a small watering-can full of water poured upon them through a fine rose. On September 28 pit No. 1 had all three of its upper tubers evincing signs of the disease. three pits were opened on January 23, 1858, with the following results :-

No. 1. Three upper tubers quite rotten.

No. 1. Three upper tubers quite rotten.
No. 2. Three upper tubers much affected.

No. 3. Three upper tubers not diseased. "In all three pits both the under layers were free from any taint,"

Although Dr. Lang does not give the measurements of the grains of sand in the soil, yet I think Mr. Smith must admit that this primative experiment is to the point.

The essay concludes with this sentence:—"That earthing up repeatedly with fine earth is the only effective preventive to the ravages of the disease." Of course, this repeated moulding is too expensive to be of practical use to the Potato grower, but the

principle is the same as that employed in the Jensenian system.

It would seem that to "a man at Whilborough" belongs the credit of first observing the value of high moulding; to Dr. Lang that of confirming his experience and making it public; to De Bary for showing us the why and the wherefore; and to Mr. Jensen or putting it into a practicable shape. Charles B. Plawright, 7, King Street, King's Lynn, Dec. 10, 1883.

BROAD BEANS.

11ow is it that catalogues emanatiog from seedfirms that lay claim to be well informed, still put forward the Mazigan Bean as a first early variety? It is not so: the trials made at Chiswick a few years ago settled this in the most conclusive manoer. It is true it is a very hardy variety, and those who make a practice of sowing in November are exhorted to use the Mazagan; but it is very probable that if the Mazagan were sown in November, and the Seville Longpod in the middle of February, on the same piece of ground, and under similar conditions, excepting the period of sowing, the last-named would prove the earliest. It is this Bean that should be sown for an early crop, and with it Beck's Dwarf Green Gem to succeed it. are dwarf free bearers, and of high-class quality; indeed, it is difficult to over-estimate the value of the Seville Longpod Bean, and at exhibitions held in July and the early part of August it is quite taking the place of the other Longpod varieties. A very fine Longpod Bean of Continental origin, named the Aquadulce, is not nearly so much grown by gardeners and exhibitors as it deserves to be. It is a variety hearing very fine long and symmetrical pods, without the coarseness we sometimes see in the Seville Longpod, It is also known as the Leviathan Longpod; but it is possible a good stock of Johnson's Wonderful is sent for Leviathan though the purchaser does not get all that he wishes for. Selections from the Aquadulce and the Seville Longpod are being made and sent out under new names, which is only what might have been expected. A good selection is always worthy an enhanced price, and especially to exhibitors. The finest selection we have seen is Sutton's Mammoth Longpod; pods of this were last summer surprisingly fine: and the same may be said of Carter's Giant Longpod.

The Windsor Beans, or Broad Beans proper, are, no doubt, giving place to the Longpods to a great extent, but it is satisfactory to note that selections are doing much to improve this strain. Taylor's Broad Windsor by this means is being lengthened into handsome pods, of five and six beans in each. Carter's Leviathan is one of the finest selections, and is frequently found on the exhibition table. In all competitions with pods of Beans, the Longpods should always be separated from and made a distinct class from the Broad Beans or Windsors. for the best pods of the latter seldom hold their own against the superb pods of the Seville or Aquadulce Longpods. In many country shows, where the cottagers exhibit extensively, the two classes are divided. In cases where only one class existed-that of Broad Beans-we have known judges disquality all the Longpod Beans on the ground that they are not properly Broad Beans. This has led to a good deal of confusion and irritation, previous judges having admitted the Longpods to competition. In some country shows it is not uncommon to have a class for shelled Broad and Longpod Beans, and a great competition ensues. One cannot but commiserate the judges who are called upon to make the awards in such a competition. It is scarcely an advisable one, as it might require a large number of pods of Beans to select twenty-five or fifty of the very finest Beans, and perhaps the largest would be found in pods containing only one or two seeds.

MURALTIA HEISTERIA. — This is a shrubby Polygalaceous plant from the Cape of Good Hope, It has somewhat rigid needle-like leaves, giving the plant quite the aspect of some species of Ulex, and the lilac-purple and white flowers are borne singly in the axils of the leaves. As a greenhouse plant it decidedly is worth growing, as it bears stopping or cutting well, and can easily be kept to any size. Specimens of this species, a figure of which is given in Paxton's Mugazine of Botany, vol. iv., p. 150, are now flowering in the conservatory at Kew.

The Poluto: its Culture, Production, and Disease. By Jeffery Lang, M.D. Price Essay, Journal of the Royal Agricultural Society, vol. xix., p. i, No. xlı. (1858), pp. 65-81.
† The italics are Dr. Lang's.

THE PROPAGATOR.

THE PROPAGATION AND CULTURE OF CALA-DIUMS .- Among the many varieties of stove plants the Caladium holds an important place. admiration is not unduly lavished on it for its beauty, its delicacy, and its graceful and ornamental appearance. The many mingling shades of colours in its leaves, and the delicate grace of the plant itself, merit and secure a prominent place in hothouses and conservatories, and play not an unimportant part in indoor plant decorations; for bouquets, too, the leaves of many of the smaller species lend a good effect. But our immediate object is not to deal with the beauties and uses of Caladiums, but to state when and how to multiply them by propagation, and to give such hints and practices which experience has pro-claimed to be the best. There are three ways by which Caladiums may be multiplied-by propagation from the leaves, by cuttings, and by division.

- t. PROPAGATION FROM THE LEAVES .- This is a new and good method of multiplying Caladiums, and though it requires the greatest skill and care, success will undoubtedly result if the following instructions be carefully observed. It is of primary importance that proper leaves should be selected for propagation -i c., what propagators term hard leaves, and of medium size. The leaf should be severed at the junction of the leaf-stalks with the bulb, without cutting away any portion of the latter; then with a sharp knife trim the sheathing which surrounds the bottom of the leaf-stalk. Great care should be exercised not to cut too much of the sheath away, because here it is the bulbs will form. The cuttings should be put in the pots directly they have been cut because they are not likely to make good plants if once allowed to flag. Having cut some leaves, put six or eight in a 48-sized pot, burying them about $2\frac{1}{2}$ inches in the soil, so that all the sheathing surrounding the bottom of the leaf-stalk may be covered, and that portion above the soil should be tied to a small stick. Sandy peat sprinkled with loam, passed through a fine sieve, is the best soil that can be used; and when placing the leaf-cuttings into the pot put a layer of sand about & inch deep on the top of the soil. The leaf-cuttings are now ready to be placed in a frame or case; and it is from this time that great care, attention, and patience must be exercised to ensure The leaf-cuttings must be reared on a gentle bottom-heat, and well watered and ventilated; the covers of the frames should be removed for one hour only in the morning and at night. If this is not done they become too moist, and decay for want of proper ventilation.
- 2. By CUTTINGS, -This is perhaps the most productive way to increase Caladiums, and January is the month to commence propagating. selected bulbs about the size of a penny will produce, if treated in the following manner, from 120 to 150 plants during the season. The twelve bulbs should be placed separately in small pots in the same soil as recommended above, but in this case it is especially necessary to have the soil passed through a fine sieve, in order to prevent the roots becoming entangled with large pieces of soil in the many times each bulb has to be shaken out. These also must be put into a frame under a gentle bottom-heat. As soon as the shoots which the bulbs send out are 6 inches long shake out the bulb, and with a sharp knife scoop out this growth, at the same time taking great care to see that the surrounding eyes or young shoots are not disturbed or injured. Pot the young cuttings with a little sand around their base, and repot the bulb, and as fast as it sends out new growths 6 inches in length treat them in the same manner as stated in the preceding paragraph. It will be found to be a good plan, when labelling your cuttings, to make a small notch in the labels, and thus distinguish the cuttings from the old bulbs.
- 3. By Division.—This is the simplest method of multiplying Caladiums. Having selected a number of strong bulbs just before the time of starting into growth, divide each of them with a sharp knile into six or eight pieces. Each piece should be potted up in small pots with a little dry sand round it in the soil previously mentioned; or, if pots are not used, they can be placed in a frame with a slight covering of ecocannt fibre, only just enough to hide the bulb,

until they break into growth, when they must be potted in suitable sized pots.

CULTIVATION. — It will be readily seen that Caladiums are easily multiplied, yet the good results of propagation are considerably moderated if the greatest care is not bestowed on their subsequent culture. It will not be out of place to add a few remarks respecting their proper culture, for it requires great care, patience, and attention to rear successfully the Caladium from the cutting period to its maturity. The following method is perhaps the best:—When the cuttings which had been put in the frame are well rooted they should be removed and placed upon the bed upon a bottom-heat. This will strengthen the young cuttings for potting. After three or four days they are ready to be potted in 48-sized pots. Soil composed of one half turfy loam, one-third peat, and one-fourth sand is the best for the purpose.

The plants should now be placed in a good growing house upon a brisk bottom-heat, and the pots partly plunged in occoa-nut fibre, or other material used for that purpose. When these plants have well rooted they should be put in 32-sized pots, and replaced in the occoa-nut fibre, and potted again into 16-sized pots as occasion requires. This done it is not necessary again to repot them before they have arrived at materials.

If the Caladiums are required for show or other decorative purposes, and io particular sized pots, Clay's Fertiliser, a 48-sized potful to a barrow of soil, should be used in potting the plants on, and a little of Clay's Fertiliser may be sprinkled over the surface of the soil about once a fortnight afterwards as soon as the pot is full of roots, but under no other circumstances. When making a collection of plants it is always desirable to have in it those varieties which are recognised to be the best, and to those gardeners who are about to make a collection it will not perhaps be out of place to mention a few select sorts.

Of the new varieties, Raoul Pugno, a plant with transparent leaves of delicate texture, of a pale rose colour bordered by dark green; Auguste Carpentier, with flat leaves of glistening scarlet, with carmine-red both in the centre and on the margin in a darker shade, and a bright green edge; Rubrum Metallicum, with leaves of violet-red excepting a blue tinted rose centre, and borders merging into a copper-red. Aida, with spear-shaped leaves of transparent and silken texture, of red-rose colour, with green ribs distinctly marked; Sirius, bright leaves often dotted with bright green and rose red spots; Bellone, the flesh-rose centre deepens into carmine-red and metallicbrown towards the border; Albo Luteum, with unusually long leaves of a green tinted and whiteyellow colour; Candidum, with large bright white leaves, and with finely marked green ribs and border; Van Dyck, elegantly shaped leaves of crimson-lake colour, a pale rose centre, and a faint grey-green margin; La Titien, with pure lake ribs passing through a network of red adorned with rich green; Mithridate, dark ribs upon crimson-lake ground, and a deep bronze-green margin; Cardinale, most brilliant red dotted with bright and green-yellow spots; John R. Box, with dark carmine ground intersected by carmine ribs and a centre of soft violet-rose, beautifully laced, and a dark crimson border.

Amongst the old varieties Louis Duplessis, with white ground and red veins; Argyrites, white and carmine spots on a light green ground; Madame Alfred Mame, rose centre, with white spots on a light green ground; Baraquinii, a crimson centre enclosed by a dark green margin; Laingii, a pure white leaf with a crimson centre; Meyerbeer, red midribs on a white ground; Princess Teck, a fine golden-yellow leaf with a red centre; Mrs. Laing, with rose centre and veins on a white ground; Princess Alexandra, green veins finely marked on a rosy-salmon ground; Madame Hungels! Chaptinii and Duck de Morra.

and veins on a white ground; Princess Alexandra, green veins finely marked on a rosy-salmon ground; Adame Hunnebell, Chantinii, and Duc de Morny, While writing on the propagation and culture of Caladiums it is necessary to make a few observations as to the best means of wintering them. Winter is the critical period for the Caladium, and the time when they die in greatest numbers; yet, with a little well-timed care, and by a method whose greatest recommendation is simplicity, they may be so well preserved that not more than one bulb in a hundred will die. When the leaves of Caladiums flag and decay place the plants underneath the stage of the honse, the temperature of which must not be below 55', and from that time it is only necessary to spiriakle them with a rose pot twice in a week. It is almost as fatal to saturate them with water as to allow them to become too dry. In the latter case the bulb not only decreases in size, but very often decays altogether by what is termed "dry rot." T. O.

DIOON SPINULOSUM.

In your issue of September 22, 1883, is an interesting account of a new Mexican Cycad, Dioon spinulosum, but, strange to say, in the somewhat detailed narrative of the manner in which dried leaves and the first specimen are supposed to have reached Europe, the name of the discoverer is not mentioned. Know ing that this credit is due to Mr. Hugo Finck, of Cordova, I immediately wrote to him in regard to it, and I herewith send you an extract from his reply. I may add that Mr. Finck is a botanist of no mean acquirements, and a citizen of Cordova for the past twenty-five or thirty years. He is a collector in whom entire confidence can be placed, and has added many new plants to the gardens and greenhouses of Europe America. He has just written a Flora of the Canton of Cordova, for the director of the agricultural school in the city of Mexico. It will be published by the Government, and will be of great value to botanists and collectors. T. G. Richardson, M.D., New

"On my way back from a visit to the Gulf coast near San Andres, Tuxtla, in the autumn of 1880, I noticed in a private house at Tlacotalpan several well-grown stems of a Dioon which was entirely new to me. Endeavouring to ascertain where they had been obtained, I learned that they had been brought by canoemen down the river Papaloapan from the foot of the mountains, but the locality could not be precisely defined. However, having a friend at Theotalpan who had a number of boats plying upon the river, I applied to him for assistance, and he promised to make farther enquiries, and if possible to bring me specimens of the plants. Accordingly, in June of the following year (1881) he brought me eighty plants, mostly small. I immediately offered them by letter to a London nurseryman, and to certain horticulturists in Belgium and Germany, but received no answer, although specimens of the leaves were enclosed in my letters. About this time Mr. Hoege was in Cordova, and on intimate terms with my son, who may have given him a specimen. In 1882 Mr. Edmund Kerber came to Cordova, and after I made him acquainted with the new plant he sent on our joint account forty-three specimens to Professor Dr. Eichler, Berlin. Since then I have shipped twenty additional specimens to the same. Hugo Finck, Cordova, Mexico, Oct. 1, 1883

BRISTOL HOUSE, PUTNEY

WHILE flowers of most kinds are not so abundant as we shall see them in a few weeks time in showhouses, the Cineraria, when well grown, and the sort the dwarf, big-trussed, robust one sent out by French growers, is not to be despised for enlivening the sombre masses of foliage in cool-houses. saw some nice plants of this strain at Bristol House (T. D. Galpin, Esq.) that were as dwarf as the greatest stickler for stunted plant growth could wish, the individual flowers being broad petalled, circular, ot good substance, and of very rich colours, that ran through all the varying shades of purple and blue. An excellent extra low-growing white-flowered kind was parti-cularly noticeable for the size of its flowers and the contrast between the pure colour of the florets and the purple eye. This would be a very telling plant sunk in masses in a carpet of Selaginella, beneath the eye, in a naturally arranged conservatory, with a little blue or scarlet from Roman Hyacioth, Scilla, or Tulip, for contrast.

A new Rose-house has been erected here, in which a novel method of training Teas and others will be put into practice by Mr. Harding. It is intended to grow these in the ordinary way, on the wall at the back of the structure, and also on trellises running across the house from the wall to the front, as is done in Peachhouses, with varying success. It is thought that by this means less shadow will be thrown on the plants that are attached to the back wall, and that the Tea Roses, which do not suffer from some little deprivation of sunlight, will get enough to ripen their wood thoroughly.

We found here well managed fruit-houses, in which thrifty Vines, Peaches, and Nectarioes, were already started, or being got in readiness for a timely start. The Dryden Nectarine was very highly spoken of as being a good forcer, and an uncommonly fine-looking well-flavoured fruit. Many useful small houses are scattered about the kitchen garden here, occupying very varied aspects—an arrangement of which a clever gardener can avail himself with much

advantage in the growing of a variety of subjects with dissimilar requirements. Here, as in so many other gardens, the skill of the gardener is tested more in the direction of supplying quantities of the usual furnishing and house decorating plants than in growing plants of any especial interest or beauty. Amongst these, Draceenas, Pandanus variegatus, Crotons, Eucharis (very well managed), Ferns, Acalypha, Cypripedium insigne, Poinsettias, and the like, filled the warm divisions; Azaleas, Roses, Primulas, the cool ones. Cleanliness, neatness, and good order were features of the management of this pretty suburban residence, of which the visitor is reminded from first to last.

CROSSHILL COTTAGE.

ONE of the most charming residences within a radius of seven miles from Glasgow is that of Crosshill, the property of Mr. Robert Ward, the well-known railway contractor. It is situated on the outskirts of the village of Bailleston, and although of unpretending internal features, is commodious for its size, and provided with every modern convenience for the comfort of a household. Its genial proprietor, now retired, is an ardent horticulturist. As he says himself, his flowers are his life; and accordingly he has erected a set of houses which, for general style and usefulness, might be equalled, but could not be excelled. The erections, internal fittings, heating, paths, tables, &c., are all of first-class order, and, what the whole horticultural fraternity agree upon, cleanliness is conspicuous by its presence in every department. "I won't have it otherwise," says Mr. Ward to bis chief gardener; and as he supplies a sufficiency of help his instructions are scrupulously obeyed.

Another excellent feature in connection with the arrangement of the houses is that from Mr. Ward's business room you can enter the corridor and go through the whole of the range, comprising about fifteen different houses, without going outside into the open air at all. The wisdom of an arrangement of this kind, where indoor or glass gardening is a conspicuous feature, and where the proprietor makes it an afternoon-of-life pastime, is obvious. The hale octogenarian can, heat off or on, walk through and inspect much or little, ad libitum, no matter what the weather may be in this fickle, uncertain climate of ours.

As to the houses themselves and their contentsfirst and foremost the corridor into which you are ushered is draped by much the handsomest plant I have ever seen of Cobæa scandens variegata. know there are plants covering a larger space, but not in the same perfect condition of foliage. No matter when you go, be it winter or summer, the drapery is faultless. This may be attributed to the corrugated glass overhead, which interposes a sufficient obstacle to the sun's rays in summer, without obstructing too much light in winter for the benefit of this green and gold-edged climber. It covers a space about 80 yards in length, and the drooping twigs that are produced from the main shoots, tied along neat wire trellising, would cover quite a mile, if sewed together and extended. It is planted along one end of the corridor, and its roots must have extended to the open garden, to enable the plant to carry such a weight of foliage.

At one end of the corridor is the Camellia-house, a handsome structure of Pitch Pine, and containing a lot of plants both planted nut and in pots. Adjoining this is what was meant to be an aquarium, but which is now chiefly tenanted by Camellias, some handsome Tree and other Ferns, and a miscellaneous assortment of ornamental plants. This is a highly-finished structure, with the roof supported by ornamental columns, and surmounted by elegant designs in elaborate tracery. The front panels are filled in with dis-coloured glass, and the whole structure is of Teak wood. The back wall is taken advantage of, and filled in here and there with Ferns, and if it be turned into what it was originally designed for-an aquarium -it will be a most interesting house for any visitor to Next to this is the original greenhouse, which Mr. Ward has attached to this range, and which is filled with useful flowering plants, the back wall being covered with the Swansonia, the Allamanda, and the Acacia lophantha, which latter, with its pinnate leaves, looks even handsomer than many Ferns. These set into a border with tile kerb, and grounded with tiny Ferns and Lycopods, make a wonderfully pretty wall and border.

Next in order is the Fern-house, which, like the houses already described, is ranged against the high boundary wall, and is 90 feet long. Ranged along the back are noble examples of Cycas revoluta, some good Zamias, the beautiful fronded Cyathea dealbata, several Dicksonia antarctica, and that best of all rare Palms, from its hardiness and general usefulness for decoration, Kentia Fosteriana. Along the front is almost every description of dwarf Ferns of the hardier sorts, along with the climbing Lygodium and fellows of the tasseled race, which break the monotony of even the beautiful nutline of the general ruck of greenhouse Ferns. What adds to the general attractiveness is the fact that the bench in front is faced up with a series of arches of virgin cork, which gives the whole a more natural appearance, and the gravel bed in which the polts rest gives off moisture more naturally than any set of staging unprovided for in this



FIG. 7.-PINUS MURICATA.

The uper figure shows the reflexed cone cut lengthwise; below from the side; to the fruit-scales with the seed seen from the side; to the right is shown the inner surface of a similar scale with the two wioged seeds; and below a cross section of the cone.

way could do. The next house is a greenhouse, always kept full of flowering plants in season. It is about 70 feet long, and at the time of my visit was a blaze of Chrysanthemums, Cinerarias, Eucharis, Deutzias, and a host of bulbs, while there were also some of the finer Rhododendron hybrids of the Veitchianum and Duchess of Edinburgh order. This house is fitted up exactly in the same way as the Fern-house above described.

Continuing down the range, for it has a slope of about 1 in 30, we come to the fruit-houses; first a Peach-house, about 56 feet long; and then a couple of vineries, each about 30 feet. These all show well considering the time the trees have been planted, and form a pleasing feature even among the piles of houses of flowering and other plants; all are capitally heated, and the ventilation, both back and front, is of the most approved and easy self-acting method. A

Cucumber-house adjoins these, about 45 feet long, which does duty in winter for French Bean forcing, and even now is fairly forward with Cucumber fruit. There is a batch of Thyrsacanthus rutilans in this house, quite a sight, with a forest of depending flower-stans, which when fairly in flower will be quite magnificent.

Next to this is a stove 30 feet long, which Mr. Ward means eventually to convert into an Orchidhouse; as it is there are several good plants of Cattleyas, among which we noted Warneri, Mossies, intermedia, &c., and Dendrobimus of sorts, Ladies' Slippers, &c. There was a beautiful flowered example of Oncidium varicosum, of the broad bright-lipped form, commonly known as Rogersii. These, along with several excellent Crotons and other ornamental-leaved plants, made up a most interesting house.

The last house in the range is one made particularly to cover the stokehole. It is of the same breadth as the others, but in the interior is a complete glass wall, which shuts off the stokehole, thereby allowing a front beuch for plants and a potting bench along the boundary wall. Every available foot is thus utilised, and plants as well as people do not suffer from the vicissitudes of climate.

About the middle of the range at right angles spring two magnificent span-roofed houses, the one for specimen Azaleas, the other for ornamental stove plants with a corridor between them. The Azaleas as specimens are as good as are seen anywhere, and they comprise some of the best sorts in cultivation. These houses for style, lightness, and at the same time durability, are quite conspicuous. They are lofty without being too much so for the plant inmates, and they are tied together with a series of iron rods. Being painted green, and the woodwork white, they are exceedingly eye-pleasing. Moveover, the paths are all of granolithic, and the stages are covered with shingle and adorned with virgin cork in arches, which gives them always a clean stylish appearance. The stove-house is centred with some grand Palms, conspicuous among which are Areca lutescens and Baueri. Latania borbonica is of the handsomest certainly; pity it sometimes grows beyond house dimensions. Adiantum farleyense is here in specimen size with excellent frondage, and the grand ornamental Pancratium ovatum, than which there is not an easier grown or more ornamental subject in our stoves; while the Dracænas, Aralias, Crotons, et hoc genus omne, make up an attractive forest.

The whole of these houses is heated by two large

The whole of these houses is heated by two large boilers, the one a conical one, and the other a saddle, and thoroughly so in every respect, no matter what weather. Gas is also introduced into every house of the range; indeed, no place could be more completely fitted and appointed in every way. Mr. Millar and his staff of assistants, while evidently doing their daty thoroughly, must feel pleased at seeing the result of their labours.

Adjoining the drawing-room is a semicircular outlined house devoted entirely to Feros. In the centre is a very tasteful design in virgin cork, with lots of pockets for the tioler Ferns. It forms an excellent quiet resort, and anything new and gnod that is likely to thrive in the pockets is made available. The wall is covered also with the cork, and the style of placing it so as to show off the various forms of Fern life is attractive. Corresponding to this arching outlined house is one adjoining the dining-room, which is fitted with staging, and kept full of flowering plants. Both houses are of Teak-wood.

In a detached homes are come for the contractive of the contract

In a detached house are some fine examples of the now-a-days all but neglected Todea superba. One scarcely ever sees it named in a gardening paper now, although some twenty years ago every one was "daft" on Todeas. They are grown at Crosshill, caged in a compartment warded off from the passage, and seem to enjoy the atmosphere provided for them.

The grounds outside are limited in extent, being about from 2 to 3 acres, but are utilised, and are in as thorough good state of keeping as the houses. Mr. Ward himself is chief engineer for his own alterations and extensions, and from the business knowledge he has what to many would be uphill work is to him no toil but great pleasure, and he seems to delight in showing his houses and plants to all true lovers of gardening. J. A.

HORTICULTURAL CLUB.—The usual monthly dinner took place at the Club rooms, Henrietta Street, Covent Garden, on Tuesday last. There was a good attendance, and an interesting paper was read on the inhabitants and productions of Borneo by Dr. Haughton, who has resided there for twenty years as Government Medical Officer at Sarawak, and who is about to return there in September.

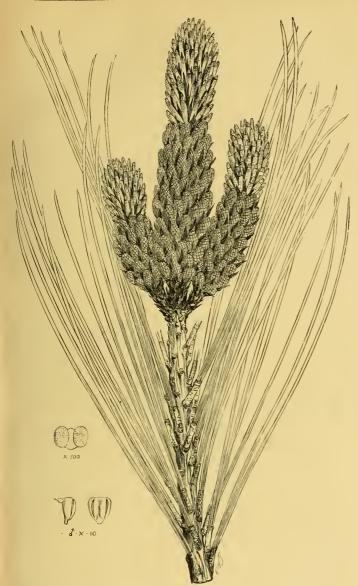


Fig. 8.—pinus muricata: foliage and male flowers nat. size, separate stamen and pollen-grain magn.

Çhe Trboretum.

PINUS MURICATA, Don.—For the specimen whence our illustrations (figs. 7, 8, 9, pp. 48, 49, and 53) were taken, we are indebted to Mr. D. T. Fish, who sent it to us last summer under the name of P. radiata, under which name also we have met with it in other gardens. P. radiata, however, is one of the 3-leaved section closely allied to P. insignis, and quite distinct from our present plant.

The special interest attaching to the present plant lies in the circumstance that the cones cling around the branches and the main trunk for an indefinite time. So long as the tree or the branch is uninjured, or its health is unimpaired, so long do these cones hang on. But the "hanging on" is the least wonderful part of the matter. Not only do they remain on the tree, but the fruit-scales, as a rule, remain closely pressed one against the other, and only liberate the seed when a forest-fire or some other injury causes the cones to crack open. The vitality of the seed is thus preserved for an indefinite time. Owing to this circumstance the trees of this species when growing together are all of the same age. The circumstance that induced germination in one case was common to all, and thus all the trees of this and other species of like habit, in a particular locality, whether they originate from cones, formed many years since, or from cones of the last season,

are equal as to precedence, so far as that is determined by age. "After a grove," says Mr. Muir, in an American journal, "has been destroyed by fire the ground is at once lavishly sown with all the seeds ripened during its whole length." That suggests an interesting subject of enquiry for some one on the spot, viz., to study carefully the kind and amount of variation in habit, quality of timber, &c., that trees of this peculiar habit present, and to ascertain, as far as possible, what, if any, co-relation exists between the phenomena.

The illustrations give a sufficient idea of the appearance of the branches, with their persistent cones. The tree itself is of low or moderate stature, and of hushy spreading habit, with rich green foliage. It was originally described from imperfect material by Don in the 17th (not the 18th, as erroneously cited in some hooks) volume of the Transactions of the Linnean Society, p. 439 (1835), and has been taken up by all subsequent writers on Conifers; so that as there is no doubt about the plant, we need bardly cite them in this place. Suffice it to say that it was called by Hartweg P. Edgariana, but that name was abandoned when it was found that the plant bad been previously named. Gordon, in the Journal of the Horticultural Society, vol. iv., p. 216, gave a woodcut of the cone, while Parlatore cites the figure given by Greville in the Oregon Committee Report under the name of Pinus Murrayana as truly belonging to this species—an opinion with which we can by no means coincide, although we have seen the tree grown under the name of Murrayana. The buds push early in spring, the young shoots being naked at the base, and the colour of the young wood cinnamon-brown. The primary leaves persist on the branches for a long period, and are upturned at the tips. The leaves are in pairs. The resin canals are immersed in the substance of the leaf (parenchymatous), and are not surrounded by any strengthening cells. orange-yellow or brownish male flowers are horne in erect close catklns, each about half an inch long, rather larger in the cultivated than in the native specimens. The hracts at the hase of the male flowers are deltoid lanceolate, toothed, rich chestaut-brown. The anther-crests are pale orange, rounded, reflexed and slightly toothed. The form of the cone and of the fruit-scales is sufficiently indicated in the woodcut, but there is considerable variation in the size of the cone, the form and thickness of the scale, and its spinous termination, which is sometimes quite slender and needle-like.

Our notes have been taken from trees and specimens at Kew, Hardwicke, and Dropmore. The tree is a native of Upper California, growing, according to the information given by Dr. Engelmann in Watson's Esdamy of California (vol. ii., p. 128, 1880), only near the coast, where it is exposed to the sea-winds and fogs, to an altitude of 2000 feet from Mendocino, where it grows tallest (in peat bogs), to Tomale Point (in the most sterile soil), Monterey, and San Luis, Obispo,"

The peculiar habit of retaining its cones ucopened is shared by various other members of the genus, notably in P. tuberculata, of which Sir J. D. Hooker brought home an excellent illustration, now in the Kew Museum, M. T. M.

THE GOLDEN CATALPA.—As one of those who have had some experience with the Golden Catalpa, I may say that some plants of it were planted here in the spring some years since, and grew to very fine plants in the following summer, which was warm and bright. The following winter was not severe, although we registered 24° of frost. This frost killed all the growth of the previous summer. The following winter the thermometer fell to zero, consequently the plants were killed to the graft. The Golden Oak planted at the same time lived through it all, but it requires a pair of spectacles to detect one year's growth from another; still the leaves are very grad among dark foliage plants. The only good hardy golden deciduous plant that I know fit to plant in quantity as a mixture among common trees in the pleasure-ground is the Golden Poplar. This plant is truly grand, and stands the thermometer at zero without a stain. Many of the golden coniferous plants are very fine, and should be freely planted. A plant of the Golden Cupressus Lawsoniana over 4 feet high svery fine, and should be freely planted. A plant of the Golden Cupressus Lawsoniana over 4 feet high svery fine, its brightness almost equalling a yellow Calceolaria, and very hardy. William Culverwell, Thoree Perrovo.

FOREST ADMINISTRATION IN INDIA. — Dr. Brandis, F.R.S., has consented to deliver a lecture on this subject at the Society of Arts, on a date to be fixed hereafter.

Orchid Notes and Cleanings.

CATTLEYA SPECIES FROM POPAYAN .- A plant out of Chesterton's importation from this district is now in flower with De Barry Crawshay, Esq., at Rosefield, Sevenoaks. It evidently belongs to the C. Trianæ section, but it has the expanded and frilled labellum as in C. Mendelii, as stated by the collector. Under whatever denomination the plant may be placed, it is certainly one of the finest of our highcoloured Cattleyas; and opening as it did with Mr. Crawshay in the week in which the sunshine was registered as nil, it is a wonder how it could attain such a rich magenta-violet tint as that displayed in its labellum. The petals are rose coloured, with a dark but not so conspicuous a feather in them as that in C. Trianæ Backhousiana, their width at their greatest expansion 71 inches, width of petal over 2 inches, labellum broad at the lower half, rich magenta-violet, the colour running 1 1 inch upwards and far into the throat, which has some dark crimson and orange lines in it. Compared with the known varieties which have been named and obtained a reputation in our collections, Mr. Crawshay's variety is second to none in its class. When more of these Cattleyas are seen they will no doubt give us ready means for their identification, as do most of the other local forms. The Popayan Cattleyas are reputed to be rich in white forms, one of which, out of Mr. Lehmann's importa-tion, was rececently sold at Messrs. Protheroe & Morris'. It was a lovely white variety with just a lilac tinge on the lip, and although it was but a small plant the substance and form of its fine flower were nearer to C. Mendelii than to C. Trianæ. There is also another, a grand white variety, out of Chesterton's lot, just open with Mr. James, at Castle Nurseries, Norwood; it is like a massive pure white Mendelii, and certainly one of the finest of white Cattleyas

CYPRIPEDIUM LEEANUM × (C. SPICERIANUM AND C. INSIGNE MAULEI).—This charming and distinct variety, the first of the C. Spicerianum crosses, was exhibited by Messrs. James Veitch & Sons at the Royal Horticultural Society's meeting on Tuesday, when the committee unanimously awarded it a Firstclass Certificate. In its neat habit and handsome appearance, and in many other of its features, C. Leeanum partakes more of the savourite C. Spicerianum than it does of the other parent, and it would be preferred by most people to either, but in itself it is so beautiful and so distinct from any other Cypripedium that a comparison is unnecessary. The plant has the fresh green leaves of C. Spicerianum, the flowers being borne on rather longer stalks than those of that variety. The dorsal sepal is large and flat, broadly oval, not reflexed at the two sides, as in C Spicerianum, pure white, with bright purplish-red dotted line down the middle. The base of the dorsal sepal is bright emerald-green, and from it a pretty radiation of small mauve spots runs upwards into the pure white. The petals and column are nearly as in C. i. Maulci, but the former are marked with more bright reddish-brown longitudinal stripes. The pouch is very distinct, and a marked improvement on that of either parent, it being of a shiny brownish-red, which contrasts well with the snowy dorsal sepal above it. The plant does great credit to Messrs. Veitch for their address in availing themselves so quickly of the services of C. Spicerianum, which is itself only a new comer, and to Mr. Seden for his skill and untiring patience in raising and bringing to maturity such a pretty treasure. It was named after William Lee, Esq., of Downside, Leatherhead, the friend of all good Orchids.

ONCIDIUM JONESIANUM.—A fine spray of seven flowers of this handsome novelty comes from J. Charlesworth, Fsq., of Heaton, near Bradford. The sender thinks a great deal of the plant, as he states that he considers it the best Oncid he knows, except O. macranthum. This is, perhaps, saying too much for it, if we take into consideration the beauty of O. Lanceanum and a few others; but, nevertheless, the flowers are beautiful and distinct. Professor Reichenbach, in his description (Gardeners' Chronicle, p. 781, vol. xx.) says that the first glimpse of the flowers calls O. Limminghei to mind. That is so. The outline of the flowers is much like it. To me the spike resembles one of a fair ordinary form of Odontoglos-

sum Rossii majus, with more than the usual number of flowers on it, and that likeness will suffice to call it to the mind's eye of any Orchid grower. main difference is that the Oncid has a smaller round labellum, and that the floral segments are bluntly rounded instead of pointed, as in O. Rossii. Who would expect to see such a pretty light-coloured inflorescence on a terete-leaved Oncid? While on the subject of this plant it is but justice to my old correspondent, Mons. Luis de St. Léger, of Ascension, Paraguay, to say that to him is due the credit of its discovery and introduction. Mons. de St. Léger is known to many as an enthusiastic "voyageur, who of late years has given Orchids some attention. More than two years ago I got flowers of this Oncid from him, but as they were badly dried I could say nothing about them. Since that Mr. Sander got flowers of it from him, which he sent to Professor Reichenbach as Oncidium maculatum, but which were not taken any notice of, probably for the same reason. Last May Mons, de St. Léger arrived with a curious collection, which was sold at Stevens' Rooms. The greater part of the plants were botanical curiosities, and this Oncid, from its resemblance to O. Cebolletii, was passed over as that variety, and consequently Mr. Charlesworth, and all others who chose to buy, obtained this pretty new plant at a merely nominal rate. Dr. Luis de St. Léger (for such is his Paraguay title), in his travels up the Parana, the Paraguay to Matto Grosso, and other journeyings, has run over many a new plant, no doubt, and there is yet another of those which fetched so small a price last May (seemingly a terrestrial Orchid), which will probably prove new and good if ever the plants get over the journey. James O'Brien, Harrow on the

CALANTHE SANDHURSTLANA×.— I send you a small spray of a hybrid Calanthe raised by P. H. Gosse, Esq., between Limatodes rosea and Calanthe vestita rubra, and which he has named C. Sandhurstiana. You will observe the very deep colour, much deeper than in C. Veitchii, which is a similar hybrid. Morton Sparke, Rooklands, Toryuay. [An interesting plant on account of its parentage, and will be valuable if the dark tiot should prove lasting. Ed.]

TRICHOCENTRUM PFAVII. - This would become without doubt, a general favourite among the smaller Orchids if it would flower as freely in England as it does in its native country. I have often found very small plants with three or four leaves only, but with hetween sixty and 100 flowers; and on one plant with seven leaves I counted once nearly 200 flowers. It is a charming sight to find in the dark interior of the forest large masses resembling snowballs, whose pure white colouring is bespeckled with purple and brown spots, and growing always on the smallest twigs of the underwood, so that it appears to be suspended in the air. It is extremely rare, but there is a form of it-the Trichocentrum Pfavii zonale-which is much more common, and which, when not in flower, it is almost impossible to distinguish from the type. This is, however, not the case with the flowers, those of zonale being in size, as well as colour, very distinct and much inferior to the type. This plant is to be found on the Pacific side of the Cordillera, in the midst of the dense forests, where during the rainy season they are almost always, as it were, in a bath. Also in the dry season their leaves remain full and soft, and therefore care should be taken in cultivating them not to let them ever shrivel, also to keep the plants the whole year perfectly shady. It requires the intermediate-house. R. P/au.

UTRICULARIA ENDRESI. - This belongs to the family of the Lentibulariacere, but requires the same treatment as epiphytal Orchids. It is of more recent introduction than U. montana, but is already generally known for its elegant spikes of flowers, varying from a delicate lilac to a deep violet, or even blue. The plant has deciduous leaves, and during the whole dry season is quite invisible, its very small and watery bulbs being concealed under the moss and the crevices of the bark of the big tree, their host. In April or May, with the first rains, the leaves appear, but the flowering takes place only in September and October, which is the period of the most tremendous rains, and it finishes immediately with the commencement of the verano (dry season). proves that the inflorescence requires plenty of water for its perfect development. As to the light, this very delicate plant is somewhat particular, fearing the excess of both light and shade. The Cattleya-house will suit it the best. R. Plau.

PESCATOREAS, WARSCEWICZELIAS, &C.—In my article on Central America (Cardenary Chronicke, Nos. 514 and 515 of last volume) I had occasion to speak of this singular bulbless group of Orchids. Growing in the very interior of the virgin lorest, they require perfect shading and moisture on their roots all the year round. During the growth the leaves also should be kept constantly more or less moist by frequent dippings, and there should be always some drops of water in the heart of the growths. As to temperature, the Pescatoreas will require in general the intermediate or even Cattleya-house; the others, principally the Bolleas, as they are growing at an elevation of 5000 to 8000 feet, want a cool treatment. Richard Pfun, Chimeick.

ANGRÆCUM SESQUIFEDALE.—Amongst the many noble types of vegetation from Madagascar, including several other magnificent Orchids, this takes a leading place, and to the adept in Orchid culture is of primary importance. Its great waxy-white blooms are exceedingly welcome at this season, but unfortunately for them the atmospheric conditions as to light and heat are very unproputious in our island. The latter is an exceedingly difficult matter, and the cold damp fogs op prevalent about this time in the neighbourhood of London never leave without more or less evident and baneful effect. Nevertheless, to have this Orchid in prime condition well repays any extra trouble or watchful care on the part of the grower to secure that end. Even if the spur of the labellum does not attain the maximum or reputed length of a foot and a half, one of 12 inches is by no means despicable. The specimens grown in the East Indian-house at Kew are unusually good this season.

NOTES ON VEGETABLES.

SNOWBALL CALLIFLOWER.—Those who have not grown this splendid Cauliflower should not let another season pass without trying it. I have grown it each year since it was first sent out, and it does so well that I save my own seed of it every year, being afraid I should not get it true again if I once lost it. Until I grew the above I seldom got good Cauliflowers, owing to our soil being light and near the rock. It is the earliest and dwarfest variety I know. If sown in January and grown on in pots in cold pit or frame, and planted out in favourable weather in March, it will be ready to cut in May. It should be planted 20 inches apart each way F. II.

LATE QUEEN BROCCOLI AND COLONEL CLARKE'S REO CELERY.—Mr. Ward's selection of vegetable seeds in last week's number is not complete I consider without the above. The former is the best late Broccoil I ever grew, being very dwarf; it withstands severe winters better than any other variety, and is also very late. I have cut beautiful heads of it in June. The latter I consider the best flavoured Celery grown; it is not a large exhibition wairely, but quite large enough for table purposes. All who visit here and taste it say that it is by far the best flavoured Celery they ever ate. % II. [Our correspondent is quite correct in his estimate of the qualities of Colone! Clarke's Red Celery; but we must add that the Leicester Red mentioned by Mr. Ward is the same sort. ED.]

THE ADIRONDACK POTATO.—Last year I bought 2 lb. of this Potato from Messrs. Veitch & Son, of Exeter, and planted them in exactly the same way as I did all my others, but when lifting time came I was perfectly astonished to see the enormous crop. I weighed them, from curiosity, and found that from the 2 lb. of tubers I had procured 240 lb. It appears that the sort is very little known amongst gardeners, and I should certainly think it will prove to be a valuable Potato, being of a good shape and quality, and with me perfectly free from disease. S. Satway, Field Gardion, Psybridge.

LETTUCES AND CAULIFLOWERS.— It is often desirable to hasten the growth of these without being at the trouble to construct a regular warm bed for the purpose; it will be found then of advantage to sow them thinly in shallow light deal trays or boxes, covering them with brown paper or a slate, and placing the boxes, when duly watered, on a shelf within a foot of the roof of a pit or house at work, where the night temperature does not exceed 60°. Here the seeds will soon vegetate, and the boxes should still be kept in the same position for a day or two, when they should be taken into a slightly lower night temperature, and be pricked off as soon as large enough to handle into similar boxes, and still to be kept close to the glass. They can in February be transferred, if large enough, to dung frames, to produce the earliest crops.

The flower Handen.

JANUARY is essentially a month of preparation and provision for the ensuing year, and the provident gardener will take careful stock of his stores and available resources, with the object of noting the deficiencies, and providing beforehand every requisite for future use. Just in proportion to the care and judgment exercised in doing this, and in having every detail and requisite previously arranged and placed conveniently ready for use, so in proportion will his after labours and disappointments he lessened, and his pleasures and successes increased and guaranteed. This looking ahead, and making due provision for the future is at all times particularly desirable in flower garden management, where anything approaching perfection is to be attained, and especially is this requisite at the commencement of the year, when each design should be reconsidered, and due provision made to meet any alterations which may be thought desirable.

Due attention should first be paid to the note-book of the last and previous years, in which should be found recorded those brief yet valuable observations made while the living picture was visible in all its beauty, nor should these potes he confined solely to the home garden, but they should also include those useful notes or hints made and gained during the pleasant excursions which Knights of the Shalloon are sometimes apt to indulge in. From these notes should be selected such designs and new arrangements as will not only be suitable to the home garden and its surroundings, but such as will give the greatest change from previous arrangements, and more particularly such as will be most likely best to gratify those for whose pleasure they are specially intended. Having properly digested these notes, and decided on the changes to be made, it will then be necessary to prepare the requisite number of

PLANTS FOR BEDDING OUT, to suit the altered conditions. In doing this provide sufficient in cumber, especially where spring hedding is also practised in the same garden, so that when the spring plants are removed the beds may be replanted sufficiently thick to give an immediate effect, otherwise, in consequence of the spring plants remaining in the beds beyond the usual time of planting, the summer season will be far advanced before the beds become sufficiently refilled so as to be effective. perhaps one objection to be urged against this practice, i.e., in the growing season the plants, owing to their having been placeted thickly, are apt to become choked, but this evil can be easily counteracted by timely and judicious thinning. It is true that the number of extra plants required is considerable, still it is the only way to meet the difficulty occasioned by making one garden do permanent duty for the four seasons of the year; but as it is chiefly a question of convenience of storage and a little extra labour, it can generally be met, as gardeners' resources in these two matters are exceedingly elastic and accommodating. In propagating the majority of plants, such as the various kinds of Pelargonium, Verbena, Heliotrope, and all similar kinds that cannot be raised conveniently nor correctly from seed, cuttings must be taken from plants that have been in a moderate beat for about a fortnight, and have made slight growth. The cuttings, after being made and potted, should be plunged in the propagating pit or frame, and subjected to a bottom-heat of 80° to 85°, in which they will strike root quickly. They should be removed immediately they are struck, and after being in a cooler temperature for a day or two, should be potted singly or in pairs, so as to become quickly established.

THE PROPAGATING PIT should at this time receive constant attention, and every effort should be made to obtain the required number of plants as quickly as possible. Many kinds now used can, however, be raised from seeds with greater facility; by this means time and expense will be saved, and the space which they would occupy as cuttings can be utilised for other purposes. Some of these kinds which take longer time to vegetate and grow should be sown in paos at once, and placed in an intermediate house or pit; the majority of them, however, should not be sown till

February or March. Not only should the cuttings and plants receive attention at this time but also the different kiods of soils, manures, and other requisite materials should also be prepared and placed in a convenient situation, ready for immediate use when needed. In like manner the different sizes of labels, stakes, pegs, and tools should be selected and placed in the most convenient form for use as required. The true value of these pre-arrangements, so easily made at this dull eason of the year, will be fully appreciated when the busy season arrives, as they will then tend to help forward the work immensely, and cause it to progress systematically and pleasantly.

ROSE STOCKS .- If seeds of the Dog Rose have not yet been collected, this may still be done, as they are this year particularly abundant. After gathering, the seed should be placed in boxes of sand made secure from mice till the pulp begins to decay, when the seeds may be cleansed by washing. They should then be sown in a well-prepared sandy border. Many of the seeds will germinate this year, but some will not do so till the following year. When they are sufficiently large they should be transplanted in rows about 18 inches apart, and 3 inches from plant to plant, adding plenty of sand if the soil be at all wet or heavy. They will soon form stocks sufficiently strong for budding the best kind of dwarf Roses on, and for the Teas and more delicate kinds of hybrid perpetuals they are preferable to any other. of Manetti as well as the Dog Rose should also be prepared as stocks for budding. In doing this select hard, well-ripened wood about the size of an ordinary Cedar pencil in thickness. Cut them into lengths of 9 inches, taking care to remove all the buds on the lower half. Plant them in rows 18 inches apart, and about 3 inches from plant to plant, except where space is limited, when they may be planted about 1 inch apart. The latter must be taken up in the autumn, have their long roots trimmed off, and then be planted at the greater distance given, for budding the following year.

IN PLANTING THE CUTTINGS select a sandy, somewhat dry soil, and place a little sand at the bottom of each trench, so as to cover the base of the cutting; tread them in very firm, and then earth them up within 3 inches of the top. If severe weather ensue place a mulching of dry litter along the sides of the trenches. I have always (ouod, however, that the cuttings planted at the greater distance, if left undisturbed, succeed much the best and produce the strongest plants after being budded. 7. S. C.

The Hardy Fruit Garden.

To grow hardy fruits to perfection three conditions of things are necessary, viz, shelter, soil, and drainage, and before we begin our Calendar for the year we would wish to say a few words respecting these. First, without either natural or artificial shelter really good and handsome fruit cannot be grown. By natural shelter we mean surrounding hills, which protect the valley from injurious winds, which are thereby tempered and rendered less ungenial. By artificial we mean hedges, fences, walls, and plantation trees, the last two being indispensable, and should be planted in quantities sufficient to break the force of the violent winds ere they reach the fruit walls and orchards; the Scotch or Austrian Pines are the hest to plant for the purpose, and if their sombre colour is thought objectionable, sufficient deciduous trees can be mixed with them to make it less so. Where the soil is stiff and the subsoil clay, artificial drainage must be employed, not only for carrying off the superfluous moisture, but to raise the temperature of the soil by lowering the subsoil water-a most important thing, especially in spring, as thereby root action will commence sooner, and frost will act less injuriously on the blossom, so that early fruit may with more certainty be looked for. As regards the soil, it is almost needless to say that the deeper and richer it is the finer will be the fruit.

The planting season will soon be over, and we would therefore direct attention to this part of the subject, more especially in reference to fruits on walls. Apricots, Peaches, Figs, and late Pears require the favouring influence of south walls, Cherries those of east and north aspects, while Plums do well on

either west or north sides. By adopting this arrangement means to protect the trees from frost can be methodically employed, more especially if care is taken at planting time to have the trees so arranged as regards site that they will ripen in succession. Where the soil is stiff, Pears will be more fruitful if grafted on the Quince stock, and as the fruits of many kinds are of short duration this stock enables the cultivator to have greater variety and a more certain succession. In the southern parts of the kingdom no summer or autumn Pears should be planted against walls, as these kinds will grow and ripen properly on trees in the open, thus enabling the grower to retain his walls for other varieties of fruits. If the orchard is cultivated for other purposes, the Apples will be best on the Paradise and the Pears on the Quince stocks, and both will come into bearing in a few seasons after planting; but if the orchard is under grass the trees are best on the free stock, and they will be much longer in coming into bearing, but they will live to a greater age.

By planting the standard trees in orchards at wide distances the cultivation of bush fruits can be successfully carried on under the protection afforded, oftentimes saving them from spring frosts and also helping to prolong their bearing season. A dressing of m nure should be applied every winter; and on no account should the ground be dug with a spade, thereby cutting off quantities of fine surface roots, but should be forked over a few inches in depth; and the same method applies to fruit tree borders in the kitchen garden, especially where Cherries are planted, as these are most impatient of having their roots injured. Any trees either on the walls or orchard which made more growth last year than is desirable may still be root-pruned. J. Rust, Eridge Castle.

The Poultry Yard.

POULTRY KEEPING EXPERIENCES .- I have read with interest "Chanticleer's" experience with poultry as given in your issue of the 5th. If it is of any interest, I would ask a little space to state my experience. I will only premise that I do not look for profit from my poultry, but strive to get them to pay as nearly as I can. I live in a border county of Scotland, the climate of which, though comparatively mild, is damp. My poultry were formerly housed in brick house-they are now boused in a wooden house. I keep twenty-two hens and two cocks. I also keep twelve ducks and six Muscovy ducks, and I do not keep a separate account of the expenditure for each. I take the cost of the fowls and the ducks at half-and-balf, though I fear I am doing the former an injustice. I find I paid in 1882, £10 7s.; in 1883, £10 15s. for bought stuff. My fowls roam over about 3 acres altogether-that is, they can do so. In 1882 I had 2425 hens' eggs-January, 35; February, 232; March, 259; April, 350; May, 340; June, 268; July, 255; August, 282; September, 205; October, 110; November, 56; December, 33; Taking the eggs at 1/4 a 1/4 a piece, 1 get 4/10 22; 1/4 1, too, do not take into account chickens eaten. I do not sell any, as we can always consume in my family sell any, as we can always consume in my family more than we rear. My fowls are common grey Dorkings. In the past year (1883) I have had only 2012 eggs, the numbers being—January, 60; February, 183; March, 332; April, 358; May, 264; June, 212; July, 196; August, 184; September, 195; October, 54; November, 195; December, 0. In other words, though the feeding has been fully on the same scale—in fact, 46; more spent—I have bad december, 2013. same scale-in fact, 4s. more spent-I have had 463, or thirty-four dozen and five eggs, less. This is at first sight the more remarkable, as on the five months, January to May inclusive, I had in 1883 but a very few eggs less than in 1882. But at the latter end of May I had with great regret to place the fowls under new hands, owing to the inability from want of health of their old attendant to continue the charge of them. The figures speak for themselves as to something more than want of care, for the seven months of 1883 give month by month a marvellous decrease. Still, 2012 eggs at 1d. give £8 7s. 8d.—a difference from the previous year cer-2.8 78. 88.—a difference from the previous year tainly, but from circumstances since to my knowledge perfectly accounted for. The falling off in the eggs from my ducks has been more marked, as in 1882 1 got 1553 eggs, in 1883 1 had but 810. The greater got 1553 eggs, in 1883 I had but 810. The greater portion of the deficiency ought to have gone into consumption in the house, but have gone elsewhere. I look upon poultry keeping as a profitable amusement, inasmuch as it does not entail everything out of pocket, but gives a very pleasant return in fresh eggs, chickens to eat, and, if the management is in the hands of an honest servant, it will repay the outlay, J. A. C.

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY, Jan 14

Fotheroc & Morris' Rooms.
Sale of Flowering Orchids, Hardy Plants,
Sale of Flowering Orchids, at Stevens'
Rooms.
FRIDAY, Jan. 19

Sale of Flowering Orchids, at Trotheroe
& Morris' Rooms.
Saturday, Jan. 19

Sale of Flowering Orchids, at Trotheroe
& Morris' Rooms.
Saturday, Jan. 19

Stevens' Rooms.

Some commotion was experienced at the meeting of the newly-appointed Committees of the Royal Horticultural Society on Tuesday last by the discovery that the FLORAL COMMITTEE was henceforth to be divided into Section A., dealing with plants in general; and Section B., to which florists' flowers in particular are assigned. Each section has its own Vice-Presidents, Mr. G. F. WILSON being President of the whole. The division took everybody by surprise, and is likely to elicit much criticism. For our own part, while fully sympathising with the underlying principle involved, we have very grave doubts whether, in the particular form in which it is attempted to be put into practice, the proposed remedy will not prove worse than the disease. To begin with, we do not think a change of such a nature should have been introduced without explanation, and without any opportunity having been taken of discussing the matter, and of eliciting the opinions of those most concerned. It is true that the Council is, and ought to be, all - powerful in the matter; still, considering that the members of the committees give their services without fee or reward, and really do a very large share of the most important work that the Society does, and which the Council could not get so satisfactorily done by any other means, we think it would have been only courteous if the step taken had not been quite so suddenly resolved upon. It is true that the decree was made during the interval between the cessation of the labours of the old and the resumption of the labours by the new committees. We say resumption, because the work to be done by the new body is the same as that effected by the old, and because many members of the new committees formed part of the old ones. This, however, is a relatively unimportant matter.

What is of more consequence is the considera tion of the causes which presumably have led to this change, and its probable efficiency in meeting the objections that have from time to time been raised against the former system. The causes are not far to seek. While there is no question in the main that the rules of the Floral Committee are judicious in certain cases, there is no doubt that in other cases they operate injuriously and serve to bring the Society's awards into contempt in certain quarters. Under the present—we ought to say under the old system-a new plant, it may be one of great interest, and even beauty, gets but a poor chance against the hosts of new Chrysanthemums, Dahlias, and such-like things of which we have already too many, and which present as a rule merely kaleidoscopic variations on what we have already. But we need not go into the question now whether too many certificates have been given to these classes of plants. We are content for our present purpose to assume that no more attention is given to them than their merits demand, and that it is not disproportionate to the interest which the horticultural public at large feel in these plants, Let all this be granted for the sake of argument, there still remains a large class of plants which, to our thinking, are most unfairly treated. We will take a recent case by way of illustration. At the December meeting

of the Society a very remarkable Bromeliad, new to gardens, and new to science, was sent by a foreign exhibitor. The Floral Committee, in the exercise of their judgment, entirely passed over this plant, which certainly, as shown, was not, nor could it be, in the highclass condition the committee is in the habit of seeing in plants submitted to it. At the same committee a Tree Carnation, three Chinese Primulas, a double Pelargonium, and a variegated Holly received First-class awards. We have not a word to say against the propriety of those awards by themselves; we only wish to draw the contrast between the favour shown to such well-known plants, which for the most part are merely slight improvements upon what we have already in profusion, and the disregard of a plant of very considerable beauty, more interest, and one, moreover, quite new. We do not wish to go into the merits of this particular case further than to cite it as an illustration of the way in which the rules of the committee operate unfairly. Every one who has watched the proceedings of the committee for some years must remember numerous similar cases. The truth is that the rules which are very properly appplicable to some plants, should not be applied to others.

Let us take another illustration. At almost every meeting Mr. GREEN brings from the rich collections of Sir GEORGE MACLEAY fine specimens of some of the handsomest and most interesting of plants, but, in the form in which they are of necessity shown the committee, is by its rules compelled to pass them over with a vote of thanks-genuine enough in this case, but which in some other instances conveys about as much sense of appreciation as the recommendation "to send it to the Scientific Committee." Such circumstances as these have been frequently the subject of complaint, particularly on the part of outsiders, who do not know the rules by which the committee works, and so lately as the twentyninth of last month we gave expression (p. 818 of our last volume) to the views of some of the complainants. Possibly to remedy this state of things the division of the committee into Section A. and Section B., as above stated, has been effected.

This arrangement we can hardly be-lieve is likely to work well; we fear that, while the main evil will be untouched, the confusion that will arise will be great. It is not a mere division of labour that is wanted, it is the formation of a separate independent committee with rules of its own, as well adapted for its own purposes as those of the other committees are for theirs. If Section A. is to be guided by the same regulations as Section B., what possible good can come of the separation? If, however, an entirely separate committee for plants, trees, &c., be objected to, these subjects might be committed by " devolution" to a sub-committee with its own rules, but whose decisions should be submitted to the general body for confirmation. In any case we think it is essential, not only that the names of those attending the committees should, as now, be published, but that the names and numbers of those voting in each particular case should also be placed upon record.

THE WEEK.—The meetings of the several committees of the Royal Horticultural Society were well attended on Tuesday last. The chief interest attaching to them was the division of the Floral Committee into two sections, of which more is said in another column. The meeting of the Scientific Committee was especially interesting in relation to the Jensenian plan of high moulding of Potatos. It is much to be desired that careful experiments should be made at Chiswick with reference to this important subject.—The discovery of Phylloxera in Vines from Victoria is also a matter of very serious importance not only as regards that colony, but it may have a prejudicial effect

is henceforth to be known as Sir RICHARD OWEN, K.C.B.-Among new books just issued we note a reprint of the Hon. Mrs. BOYLE's articles in these columns on a Buckinghamshire garden under the title of Days and Hours in a Garden. Mr. ROBIN-SON has issued his work on the English Flower Garden. Miss ORMEROD'S Guide to the Methods of Incect Life is likely to be of great value to cultivators, and the same may be said of Mr. SHIRLEY HIBBERD'S Garden Oracle. Rev. H. H. D'OMBRAIN has issued the Rosarian's Year Book, with a portrait of Mr. MACINTOSH. Of these books we shall have more to say on another occasion .- Mr. R. M. CHRISTIE, writing In Nature with reference to the effects of earthworms in modifying the condition of the soil-a subject first ventilated many years ago by Mr. DARWIN in these columns-points out that in the prairies of North-west Canada the earth-worm is not known. The writer attributes the absence of the worm to the prairie fires which destroy the vegetable matters on which the worms feed. In the same journal Mr. W. T. T. DVER has some remarks on DUCHESNE'S Histoire Naturelle des fraisiers, a work published in 1766, and in which the writer points out the hereditary descent with modification of the races of Strawberries, thus anticipating by nearly a century the views of DARWIN, though no mention is made of that potent factor, the struggle for existence. The subject was incidently mentioned in Dr. MASTERS' Vegetable Teratology, p. 396.-With reference to the poisonous qualities of the leaves of Rhododendrons, Mr. PAR-KINSON records in the Pharmaceutical Journal a case wherein several sheep met their death from eating the leaves of these shrubs .- Mr. MERHAN points out in the Gardiners' Monthly how many trees famous for longevity in Europe are shortlived in the Atlantic States of America. The English Oak, for instance, has run its course at Philadelphia within a very short period, and the same holds good of some of the Spruces and the Silver Fir. A much lower temperature in America suffices to kill certain trees, like the common Cherry Laurel, and it is believed "by reason of the drier atmosphere causing a heavier drain for moisture on the vital powers of the plant." On the other hand, Alaska, in a very high latitude on the north-western shores of America, has a relatively warm, moist climate, favourable to longevity in trees .- The American horticulturists are puzzling themselves to know how the conditions under which Mr. BENNETT's Rose was purchased by Mr. Evans, of Philadelphia, are to be fulfilled. The stock of the Rose, W. Francis Bennett, was sold for 3750 dol. by Mr. BENNETT, coupled with the condition that no cuttings or plants are to be sold for three years. Mr. EVANS looks for his profit from the sale of cut flowers, and the question arises how such cut flowers are to be sold withont leaf-huds attached, as it appears that "Rosebuds cannot be sold unless cut with long stems. Great difficulty exists in destroying the vitality of such buds. We may add, however, that Mr. BENNETT is under no apprehension on this score, provided due care be taken. Mr. BENNETT also mentions the extraordinary freedom with which the plant flowers, and the early season at which the flowers are produced. Mr. BENNETT and his grower are confident that they could recognise the buds and shoots of the Rose in question from amid a large quantity of others. -Mr. PETER HENDERSON indulges in strong language against the idiots "and senseless old grannies" who swayed the Berne Convention, and counsels retaliation. If Potatos and Tuberoses from America are to be prevented access to European markets America is counselled to grow her own "Dutch bulbs," We do not think our American friends are well posted up in this matter, though we entirely sympathise with them in their opinions as to the utility and mischief of the Convention laws. Unfortunately all this has been pointed out again and again to the "idiots and grannies," but without

— NEFENTHES RAJAH.—An enthusiastic cultivator of Nepenthes points out that as most growers fail to get this wonderful plant to grow satisfactorily it would be of great advantage if those who have succeeded with it would relate their experiences through our columns, at the same time giving full details of their respective modes of treatment, and mentioning particularly the temperatures, degrees of moisture, soil used, &c. We need hardly add that we shall be glad to publish any information of value on the subject that may be sent to us.

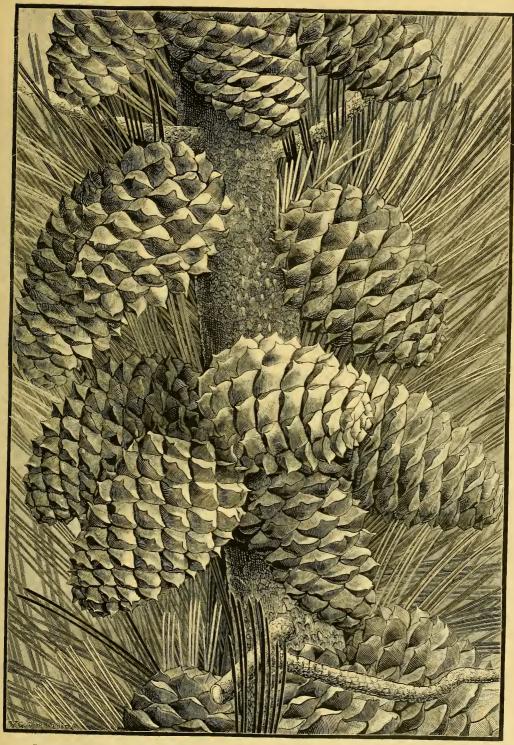


FIG. 9.—PINUS MURICATA: PORTION OF BRANCH BEARING CONES, WHICH REMAIN ON THE TREE FOR MANY YEARS. (SEE P. 49.)

— A NEW AMARYLLIS.—There is in flower at the Victoria and Paradise Nurseries a fine new winter-floweting Amaryllis, named Miss Evelyn Holford. It is one of the best we have seen as regards shape and colour. The flower is very large, of fine form, 6 inches across, of a brilliant crimson scarlet, having a short whitish stripe half way down each petal. It has some of the Aulica blood in it; although a long way apart from that species, yet there is no doubt that it is this cross that has given it its winter-blooming qualities. Amaryllis Mrs. Garfield is also in flower, as indeed it is all the year round.

— DESTRUCTION OF PLANT-HOUSES.—During the last gale Mr. THOMAS ROUTFORD had the great misfortune to have three large new span-roofed houses blown down in his new place at Turnford, near Broxbourne. The glazing had just been completed, and the glass was completely smashed, and much of the woodwork spoiled. Being busy preparing plants for the coming season such a disaster at this period is much worse than if it had happened earlier.

—— SPECIMEN PRIMULA SINENSIS FIMBRIATA.—
A half dozen remarkably good plants of these came
from Messis. H. CANNELL & SONS, the Swanley
Nurseries, on Tuesday last. They measured nearly
2 feet in diameter, were grandly furnished with
healthy leaves, and crowned with fine heads of bloom.
They were two-years-old plants, full of vigour, and
of great decorative value. They are just the kind of
plants one likes to see on the exhibition table. The
varieties were—Emperor, carmine, fine and distinct;
Swanley White, with pure white flowers and dark leafstalks; The Queeo, delicate blush; Chiswick Red,
fine in colour; the old white Four-leaved, very fine
indeed; and Swanley Purple, rich crimson-purple.

— FAIRY FLOWERS.—Our attention has been called to a paragraph in a former number, which gave the impression that Messrs. HOOPER & Co. were the importers of the Fairy Flowers which appeared in Covent Garden Market just before Christmas, whereas it appears the credit of the enterprise is due to Messrs. HOWCROFT & WATKINS, 14, Tavistock Row, who brought the entire stock from America, and who a few days ago received a consignment of pink ones which are novel and pretty.

- FATAL BOILER ACCIDENT AT HAREFIELD GROVE.-An inquest was held at Batchworth Heath, on December 21 last, on the body of SAMUEL FOSKETT, age 40, a labourer employed in Mr. GEORGE WEBSTER'S garden at Harefield Grove, who was killed through the bursting of a boiler on the previous Wednesday. From the evidence given by the head gardener, Mr. GOUGH, it appeared that the boiler in question was obtained from Mr. ROBINson, of the Stewkley Iron Works, Stourbridge, and was put in about six weeks previously by Mr. CLARKE, ol Stourbridge; about 3000 feet of 4-inch iron piping were attached to it, and about ten valves were used for connecting, but none of them were nearer than In consequence of a statement made to him by his son he went to the stokehole, and saw the deceased, who looked very black in the face, and apparently was very badly scalded. A fellow workman of the deceased stated that he and others, about seven in all, went into the stokehole to get their dinners, after which FOSKETT went to light his pipe, and had not been down the steps more than two minutes when a report was heard, and steam came up from where deceased was. Witness then crawled from the top of the boiler and helped FOSKETT out. JOHN SAUNDERS, a fitter employed by Mr. ROBIN-SON, of Stourbridge, had examined the boiler after the accident. It consisted of seventeen or nineteen castiron tubes, and was about 18 feet long. The boiler was of an equal thickness all round, and he had broken one of the pipes to ascertain if there was any stoppage in them, but found none. The opening of the furnace would cause a rush of heat into the boiler, and in his opinion the concussion would cause the explosion. The extreme end of the boiler was blown partly away, leaving the sides of the boiler on the ends of the pipe. They had never had a boiler explode before. Mr. CLARKE stated that he fixed the boilers six weeks previously, and had done nothing else but fix boilers and horticultural buildings for the last twenty years. During the inquiry an adjournment was suggested by the jury in order that a Government Inspector might inspect the boilerhouse; but this was deemed unnecessary, and the jury returned a verdict of "Death from severe scalds accidentally received."

- CUPHEA COMMERSONI,-This South American species seems to differ in many minor respects from the few scattered ones occasionally seen in cultivation. These are mostly of a shrubby character, and suitable either for the decoration of the greenhouse, or for planting out in summer, with equally satis The present species is of low spreadfactory results. ing fruticose habit, and seems to enjoy warm treatment from its flowering continuously for two or three months in the stove at Kew. The slender freelybranching twiggy shoots terminate in a raceme of flowers, which open successively, so that the whole plant is generally well studded with bloom. The caylx, usually the most conspicuous part of the flower in this genus, is small and insignificant, while the petals are unusually prominent and of a pale purple colour somewhat resembling the purple Loosestrife.

- THE CHRYSANTHEMUM "AT HOME."-A travelling correspondent of the Daily News, writing from Tokio, Japan, on November 3, thus writes on the Chrysanthemums in the Mikado's garden :-"Just now the Chrysanthemum is brightening all the highways and byeways of Japan, and the Sovereign Lord, whose family have for centuries worn the flower as their crest, bade some 500 guests to see the show in his palace grounds. Regarded as a flower show there is nothing in the world equal to the spec-Three single plants, occupying a shed of considerable size, displayed between them over 1200 perfect flowers. One counted 413, and the others were less only by a few units. In Japan the art of the gardener seems to be guided in the direction of producing a Chrysanthemum of feathery form and delilong slender petals rising in exquisite fringe. Of these there were abundant specimens, perhaps nothing rare in colour, but in development of size and graceful form beyond anything dreamt of in the Temple Gardens."

- MOULD ON ENSILAGE. - As allusion was made to my having examined the matter from the ensilage communicated by Mr. PIM, I may perhaps be permitted to call attention to the very rough figure given by SACCARDO (fig. 934) of a matter on the bark of Alder, which certainly bears a very strong resemblance to what your correspondent has so admirably figured, and to the correctness of which I can bear testimony. As regards the brown matter from the ensilage, it consisted of various moulds, and amongst them fragments of a myxogast, with spores, but nothing in a perfect state. We may be well content to give up the Greek derivation of ensilage, which is more than doubtful, when there is a Spanish verb, ensilar, "to preserve grain underground," from which it is at once derived. To the information before given, our readers may be reminded that such a preservative of grain was observed during the retreat of the 10,000 in Northern Asia Minor, as recorded in XENOPHON'S Anabasis, and what are called Picts' houses (at least the only specimen 1 have seen in Aberdeenshire) might now be used for the same purpose. SACCARDO's plant is referred with a mark of doubt to Stemphylium, with which it has clearly no affinity. His Saccaromyces coprogenus (fig. 911), on fermented dung, may very well be an early stage of something similar. The whole matter, with a view also to BREFELD'S experiments in nährlösungen, is well worth further investigation.

- THE SEASON. - When a few weeks since the sky at morn and eve was illumined by a beautiful but seemingly weird and unearthly glow, there were not wanting weather seers who presaged in these brilliant manifestations evidences of a coming hard winter. It is true that yet we are not more than half through that season commonly called winter, and the usually worst half is to come; but we may well imagine it difficult to believe that gardeners are anticipating a season of severity, or that there is at present any reason to assume hard weather is in store for us ere the spring comes. Almost as a rule a hard winter begins early. So far, the season has been marked by exceeding mildoess, not by a higher temperature, perhaps, than has marked other preceding winter seasons, but still just of that character which has always preceded it. So far, and most happily, we have had little rain, and the season even up till now has enabled the soil to be worked with remarkable facility, and planting to be done at any moment. We can hardly expect such enjoyable, if perhaps, as we think, unseasonable weather to continue long, and if we do not get frost, then we may anticipate that the coming month will make good its title to the ancient appellation of "February, fill ditch," and cause many a stream and dyke to over-flow on to the land. To such a visitation, even if accompanied by high temperature, we can hardly look with satisfaction. A flood of waters after all the beautiful weather we have had would leave the soil for spring cropping in a sad sodden state, and all the labour of the early winter would be neutralised. Better by far for gardeners come frost and snow, which would at least leave the soil well pulverised and suited for the reception of seed when the winter was passed. Still such is the comparatively unseasoned condition of all vegetable products now growing that we could not regard a visitation of severe frost without dread, even if the soil ever so greatly benefited. We should be glad now to get through without either hard frost or flood, and can but hope for the best. One thing that is clear is that our winter seasons, changing with the times, have given the traditional old winters the go-by for the present, if not for ever. As an illustration of the mildness of the time we may mention that in one of the suburbs of London we noticed lately a hedgerow of Cherry Laurels with the flowers almost expanded.

— THE VINE LOUSE IN VICTORIA. — We understand that a committee of the Entomological Society, appointed in order to examine certain Vine roots received from the Government of Victoria, has decided that Phylloxera is present in considerable numbers upon the roots examined.

- SPECIMEN CYCLAMEN PERSICUM .- The fine specimens sent by Mr. HENRY LITTLE from Hillingdon on Tuesday last to the meeting of the Royal Horticultural Society illustrated in a remarkable degree the value of the Cyclamen as a mid-winter flowering plant. They were of large size, fine in foliage, above which was a superb head of flowers. The larger specimens were three years old, the smaller two years; and Mr. LITTLE stated that though in full bloom now, so continuous is the succession of bloom that he hopes to show these self-same specimens in competition in March next. In fact, a grower of a collection of Cyclamen persicum can have plants in flower from September until May, nearly or quite three parts of the year. Two of Mr. LITTLE'S new varieties shown on this occasion were especially noticeable for their colour, viz., Mrs. H. Little, singularly deep and novel; a kind of shaded bright crimson or burnt carmine-a colour that seems as if it will stand and endure to the end. The other was Amethyst, the most distinctly purple Cyclamen we remember to have seen-crimson on the ground, with a deep and abiding flush of rich purple. Mr. LITTLE has been singularly successful in the production of rich-coloured Cyclamens of high quality, and a First-class Certificate of Merit was awarded to Crimson Beauty, a bright rosy-crimson variety, with a dash of purple, good habit and very free.

NAMING ARTICLES AT FLOWER SHOWS. Is it advisable to make this compulsory under pain of disqualification? We are reaching the time when schedules of prizes are being made or revised, and regulations considered. There is scarcely a schedule of prizes that does not contain a proviso to the effect that all contributions for exhibition must be correctly named, and in some that no award will be made unless this is carried out. But if a judge were to disqualify on this ground the managers would be the first to enter a protest against his action. It cannot be applied in all its severity without working a considerable amount of injustice. Some exhibitors are not aware of the correct names of all the things they grow; and in the case of varieties of any one genus-such as the Dahlia, for instance-things get a little mixed sometimes. Besides, an enemy might remove correct names and substitute incorrect ones, with a view to getting some exhibit superior to his own placed behind his inferior one. It often happens in the case of cut flowers that names are written on thin pieces of paper, when a puff of wind scatters some of them and they are lost. This is a common accident, and one that under the circumstances cannot well be avoided. It is obvious that such a regulation needs to be applied with great care. In some country shows leading exhibitors enter into a good number of classes because they are expected to largely assist in making the show, and they have not sufficient time at their disposal to see that all their exhibits are correctly named. And then there is the matter of incorrect spelling. How many exhibitors are unable to spell correctly? And incorrect spelling is perhaps worse than no names at all. A generous view of this regulation would suggest that it is generally framed with a view to assist as far as possible an accurate naming of subjects, but that it cannot be made justly a cause for disqualification. If this were carried out it would sometimes have to be done in a very sweeping manner, and half the contents of a show might suffer. Judges who are well informed men may sometimes do good service by looking over the exhibits and correcting the nomenclature in cases where it is needed. This supervision is especially needed at country shows. But they must not improve too much, as did that judge who put aside Snowflake Potato as not being a kidney, but an "intermediate" variety, and not to be accepted either as a round or a kidney.

---- EDGING PLANTS,-The continued request to forward the names of plants suitable for forming living edgings proves the universal liking that exists for such edgings to flower-beds and walks in contradistinction to terra-cotta, ship-rope, stone, glass bottles, half-bricks, rough flints, clinkers, &c., that we find constantly recommended as being proper things to use. That such-like materials cost less originally, and in the subsequent keeping in order, than live ones, is undoubted, and there all that can be said in their favour has been stated. As to hiding slugs of all colours and of various degrees of voracity, some of the things above mentioned afford these garden fiends as much covert as the living plants. The same plants we should use in the pleasure grounds would hardly be suitable to form an edging in a kitchen garden, as there space is generally a desideratum, as well as neatness, so that if the Cotoneaster rupestris, C. microphylla, C. Simonsii looked well in the former, they would not look equally so in the latter place. And with all our search after something better we have not as yet found a plant which, bearing in mind the ease with which it can be propagated, its hardiness, and its patience under the shears, is better than Box. The Thymes, such as T. lanuginosa, and the variegated form of Lemon Thyme, wander too far "from home," smother small plants, require frequent cutting back, and are, therefore, more suitable as bordering to beds of shrubs, or large herbaceous plants. Some of the Thuias make good bold edging, and are com-paratively cheap, viz., T. plicata, T. Warreana, T. Lawsoniana and varieties. Golden Yew is a very uncommon plant, looks very bright and fresh, and, like all the genera, hears clipping without apparent suffering. The golden Thuia and gold and silver Retinosporas would make similarly excellent edging stuff, but they are rather expensive yet for such work. The Ericas, such as E. mediterra nea, E. vagans, E. herbacea, are capital edging plants, well adapted for American gardens, in which Box looks quite out of place. Berberis Hookeri, Sanguisorba canadensis, does equally well in such quarters; it makes a fine bold edging to fine leaved plants, or to Rhododen-The propagation of Sanguisorba is by root division, when once a stock is obtained. other herbs suitable for the purpose are Hepaticas, Saxifragas, Gentiana acaulis, Campanula pulla and C. pulla alba, Violets, and Ampelopsis hederacea; this last makes a good summer edge, but is leafless in

— DOUBLE DAISES. — These common hardy garden flowers seem to be the creatures of sport in an unusual degree. Sporting is a common property with many flowers, Chrysanthemums and Dahlias especially, but in most cases the sport is a singular and therefore permanent character. Perhaps evolution would be a more scientific term for this tendency to wariation or changeableness, but a case has come under our notice in association with double Daisies which amounts almost to a complete revolution. Probably few, if any persons can tell which of existing double Daisies was the earliest produced, though it would seem that the large flat-petalled white, the same red and white, and the quilled large red are of those most commonly grown. It is by no means improbable that two of these three are products or sports from one another in some way, but from the fact that only the red quilled kind is found to produce

variegated leaved forms it seems evident that if either is the progenitor of the others it must be that kind. As is well known, the red flowered variety, which has handsome variegated foliage, is a sport from the large double quilled red, the flowers retaining the quilled form. A very common second sport is found in a variegated kind that has still quilled flowers of a dirtywhite colour. That sport, however, no one seems disposed to perpetuate. A much prettier sport, however, originated a year or two since at the Bedfont Seed Grounds, the flowers, curiously enough, being flat-petalled and mottled red and white, whilst the foliage is robust and handsomely blotched. From out of this sport has come yet another evolution, in the shape of reversion to robust green foliage, with flowers almost pure white, so that the result of the diverse changes seems to be an allied form to the large flatpetalled double white. No doubt that fine white quilled kind, White Globe, originated as a sport from the large quilled red kind. That too sported into a variegated form, but the flowers remained quilled and pure in colour. It is a curious fact in connection with the Daisy that all deep coloured flowers should have quilled petals, whilst most light coloured ones have flat petals. That White Globe Daisy is an exception to this rule naturally leads to the inference that it is a sport, and not an original variety from seed.

— OSMANTHUS FRAGRAYS. — Under the name of Olea fragraps this desirable greenhouse shrub was figured a long time since in the Botanical Magazine, t. 1552. It is cultivated in Cochin China, China, and Japan for its deliciously scented but diminutive flowers. In sheltered places, against walls, &c., in many places in the South of England, the species does well in the open air, but it flowers more freely if treated as a greenhouse plant. It certainly seems to possess a somewhat elastic constitution, as one cultivator who succeeds well with the plant states that it pays to give it stove treatment, as under these conditions it flowers almost contiouously.

- GARDENERS' ROYAL BENEVOLENT INSTI-TUTION .- The forty-sixth annual meeting of the supporters of this Institution was held on Thursday evening at the Bedford Hotel, Covent Garden, under idency of the Treasurer, EDWARD TIDSWELL, Esq. The balance sheet presented showed a steady advance in the various items of account. The annual subscriptions amounted to £1196 10s., the donations to £704 10s. 4d., and the dividends on stock to £441, which, with the balance brought forward, £377 17s. 9d., and £47 13s. received for advertisements, brought the revenue account up to £2767 11s. 1d. The creditor account showed that £1312 had been paid in pensions, and that 6600 had been invested in Consols. The working expenses, including the Secretary's salary, printing, stationery, advertising, hire of committee-room, expense of annual dinner, &c., brought up the expenditure to £2401 4s. 9d., leaving a balance in hand of £366 6s. 4t. The amount realised by the simultaneous collection made in aid of the Pension Augmentation Fund, was £634 5s. 9d., showing an advance of about £70 on the 1882 collection, and of this sum £600 has been invested in Victoria The total amount of the reserve fund is now £17,750. From the annual report we learn that ten pensioners died during the year, and that the increasing available income of the Institution enabled the committee to put twelve pensioners on the list that day, thus increasing the roll to 104, the largest number ever on the books of the Institution at one time. Two of the new applicants, Benjamin Dew, Ham, Surrey; and M. Moore, Hadnall, Salop, widow of a former subscriber, baving complied with the rules to the satisfaction of the committee, were placed on the list without election in conformity with Rule VI. The report also alluded in appropriate terms to the loss the Institution had sustained by the deaths of Mr. Wrench and Mr. James Gray, the former Treasurer for thirty-four years, and the latter for twenty-five years a valued member of the committee; and it announced that the forty-first annual festival had been fixed to be held on July 2 next, when George Lambert, Esq., F.S.A., Master of the Worshipful Company of Patten-makers, and Warden of the Worshipful Company of Goldsmiths, had kindly consented to preside. The committee also had the gratifying statement to make, that the Council of the Royal Botanical and Horticultural Society of Manchester had most generously granted permission for a held in their garden at Old Trafford during the ensuing summer, under the management of Mr. Bruce Findlay; and that several noblemen and gentlemen in the neighbourhood of Manchester had also promised assistance, by allowing their grounds to be thrown open for the benefit of the Institution. The report and balance-sheet, laid before the meeting, having been adopted, Dr. Maxwell T. Masters, F.R.S., was elected a Vice-President of the Institution in the place of the late Lord Overstone; Mr. Tidswell was again elected Treasurer; and Mr. E. R. Cutler as Secretary for the forty-second time. Messrs. John Lee, J. F. Meston, and J. Willard, were appointed auditors; and the following gentlemen having been elected to serve on the committee, viz.: - Messrs. Roger, Battersea Park; Fraser, Lea Bridge; Kinghorn, Richmond; Cutbush, Highgate; Woodruff, Harrow Road; and Nutting, Barbican, in the place of the members retiring by rotation, the election of pensioners was pro-ceeded with after it had been decided that, as one of the pensioners had died since the voting-papers had been sent out, the recipient of the eleventh highest number of votes should also be placed on the list. At the close of the poll it was announced that the following candidates had been successful : - Ann Larissy, Thomas Rider, Elizabeth Butters, Ann Hopkins, Ann Dawson, Catherine Williams, Jane Barlow, Robert Kennedy, James Watkins, Thomas Forsyth, and James Hutcheson. The members of the committee and a few friends afterwards took supper together at Simpson's, with Major Russell Gole in

— MR. WILLIAM FRASER, who for the last eleven years has been Gardener to the Eatl of SUFFOLK and BERKS, has commenced business as a market gardener and fruit grower, at The Vineyard, Tetbury Hill, Malmesbury.

- THE WEATHER, - General remarks on the temperature, rainfall, and duration of bright sunshine, for agricultural and sanitary purposes, during the week ending Jan. 7, 1884, issued by the Meteorological Office, London :- The weather has continued very cloudy or dull in all parts of the kingdom. Rain bas been very general, and at our north-western and north-eastern stations unusually large quantities have failen. The temperature has been about equal to the mean in the north of Scotland, but above it in all other districts, the excess over eastern, central, and southern England being as great as 5°. The maximum, which occurred on different days in the various directicts, ranged from 48° in "Sotland, N." to 55° in "England, S.W.," and "Ireland, S." The minima in "England, S. W., "and "Ireland, S. The minima were registered in most places on the 1st, and varied from 26° in "Scotland, E.," and "England, N.E.," to 34° in "Ireland, N.," and the Channel Islands. The rainfall has been a little less than the mean in the north of Scotland, the east, south, and south-west of England, and in the Channel Islands, but more elsewhere. At most of our north-western and north-eastern stations the excess has been very great. Bright sunshine has been even less prevalent great. Bright sunshine has been even less prevalent than during the two preceding weeks, the greatest percentage of possible duration being 7 (in "England, E," England, S, W," and "Iteland, S."), while "England, N.E.," and "England, N.W," have been altogether sunless. Depressions observed.—At the commencement of the period pressure was highest over the North Sea, Denmark, and the south of Scandinavia, the wind in our islands being moderate or tesh from the eastward or south-eastward. By the Scannavia, the wind in Out is assays deal, and or fresh from the eastward or south-eastward. By the morning of the 3d, however, the area of highest pressure had been transferred to the South of France, where it remained until the end of the week. During the next day or two some small and ill-defined disturbances passed eastwards across Ireland and England, causing moderate or fresh breezes between S.W. and S.E. As the period drew towards its close a large and rather deep depression travelled in a north-easterly and easterly direction off our north-western and norther coasts, bringing strong S.W. winds (a gale in the W.) to all parts of our islands on the 5th, and fresh to strong westerly and north-westerly winds on the 6th and 7th.

— GARDENING APPOINTMENTS,—Mr. EDWARD COX, late Foreman in the gardens of A. H. SMITTBARRY, Esq., Fota Island, Cork, as Gardener to The O'DONOVAN, Lissard, Skibereen, Co. Cork. —He O'DONOVAN, Lissard, Skibereen, Co. Cork. —He O'DONOVAN, DAVIES has succeeded Mr. BIRD, and not Mr. DRUMNOND, as Gardener to Captain C. G. A. DRUMNOND, at Enderby Itall, Leiesster, as stated in our last number.—Mr. J. IRVINE, Foreman at Lillord Hall, Oundle, has succeeded Mr. Franser as Gardener to the Earl of SUFFOLK and BERKS, Challton Park, Malmesbury.

Home Correspondence.

Ventilating Greenhouses .- The subject of the ventilating Greenhouses,—The subject of the ventilation of plant-houses occupies at times a good deal of space in the columns of the horticultural Press, and yet I do not remember to have seen it scientifically dealt with. Perhaps science has never devoted much attention to the matter; still, perhaps of the property devoted much attention to the matter; still, perhaps some of your specially scientific correspondents could to some extent illuminate it for the benefit of other minds through the medium of your columns. To the inquiry, Why do we ventilate greenhouses? the following replies at once naturally suggest themselves; —to give fresh air to the plants, to permit the escape of bad gases that may have accumulated in the air of the house, to lower the temperature, &c. These replies are, however, by no means entirely satisfactory to an inquiring mind, and suggest many more questions, such as, Is it possible to ventilate a hothouse in winter or during cold weather without lowering the to an inquiring mind, and suggest many more questions, such as, Is it possible to ventilate a hothouse in winter or during cold weather without lowering the temperature, or without having to expend more fuel in keeping it up? The obvious answer to this is, Certainly not. And then is suggested, As ventilation cannot be given to a hothouse in cold weather without either lowering the temperature of the house or making it necessary to incur a greater expenditure of fale in keeping it up, is it possible to grow plants successfully without any ventilation at all? Because, if it is, economy in fuel results. Practice is beginning to say, Yes, in some instances, at least, ventilation is quite unnecessary. It is becoming quite usual now (to mention one instance only) to hear successful Cucumber growers say that they "never ventilate and never shade." We know human beings in badly ventilated rooms quickly become unhealthy, and science tells us that air in confined spaces breathed over and over again loses its coxygen, that human beings require oxygen, which they obtain by the action of breathing, and that when oxygen becomes seriously deficient in the air to be breathed they at once suffer severely from the effects of its deficiency, and that therefore a certain amount of fresh air is absolutely essential to the life and health of fresh air is absolutely essential to the life and health of human beings, in order that the oxygen, without which they cannot exist, may be provided for them. The question now is, is fresh air as essential to the life and healthy growth of plants as it is to that of animals? Many would, I think, feel inclined to say, and thereby endeavour to settle the matter at once, Of course it is. But it is not so easily settled. Science has now long since discovered that common air is a mixture of the two gases, oxygen and nitrogen, and that it always contains small portions (more or less, according to circumstances) of other gases or combinations of elements in gaseous condition; further, that it is as essential for the life and growth of plants that the air by which they are surrounded should contain at least a small percentage of a gas known by the name of carbon dioxide, as it is for human beings that it should contain a proper proportion of oxygen. that it should contain a proper proportion of oxygen. The scientists who have investigated the subject go on to tells us that a large proportion of the dry matter of plants consists of carbon which is taken from the atmosphere through the medium of the leaves, and atmosphere through the medium of the leaves, and that only a small percentage of the dry matter (consisting of incombustible mineral matter and nitrogen) is taken from the ground by the roots; and that the source of the carbon is the carbon dioxide of the atmosphere, in which carbon dioxide exists only in very small proportion; and that, were it not for movements of the air, such as wind, breezes, &c., sufficient of it would not be brought within the reach of plants to enable them to grow; that the plants decompose the carbon dioxide, seizing on the carbon, and storing it up in the formation of their tissues, and liberating the oxygen into the atmosphere. While vegetation consumes carbon, animals are continually evolving it, and it is being continually taken up into the atmosphere in the form of carbon dioxide from decaying animal and vegetable matter, the consumption of ing animal and vegetable matter, the consumption of fuel, &c.; thus growth and decay are respectively ing animal and vegetable matter, the consumption of inel, &c.; thus growth and decay are respectively continually consuming and producing carbon dioxide, thus maintaining between them the necessary balance in the air out-of-doors. Now, in greenhouses where there is no ventilation, there is no wind, and the movements of air must be of the very slightest. How can plants in structures where no ventilation is provided continue to grow and thrive after the carbon dioxide originally present in the confined air has become exhausted? Is there any source within the structure whence fresh carbon dioxide may be generated in sufficient quantity? and if so, is it necessary that fresh air be admitted for any purpose? Is it likely that under any circumstances an injurious surplus of this gas may be evolved, and in that case is it likely to be produced under any circumstances (and if so what) other gases of an injurious nature which require to be got rid of by ventilation? Science is required to throw light on these matters. Is it possible under any circumstances to grow plants Is it possible under any circumstances to grow plants

for long periods in structures where ventilation is not provided? Of course, no house in which the temperature is constantly varying, and in and out of which an attendant is frequently passing, can, strictly speaking, be said to be entirely unventilated, because the expansion of air by heat, and contraction on cooling, would provide some ventilation as well as movement of air, and the passing in and out of the attendant would make some more, while his breathing would provide a small amount of the before-named gas. When we have a Royal Horticultural Society which can offer to its members for a pound or a guinea per annum as good value for money as the Royal Agricultural Society gives to its members, perhaps questions of this kind may stand a better chance of becoming solved than they do at present. T. E. Ewing, Eaton, Norwich, Dec. 31.

Rooting Terminal Buds of the Bramble,— In the Yournal of the Linnean Society (Botany), xviii., p. 400, Mr. Francis Darwin called attention to the well-knownhabit which several species of Bramble have in the autumn of forming roots around the apical bud of



FIG. 10.-BRAMBLE ROOTING AT ITS FREE END.

those branches which may be near or in contact with the ground. The terminal bud, or rather the apical part of such branches immediately beneath the bud becomes somewhat thickened, and emits roots which strike into the ground, the bud afterwards developes into a stem and another plant is established, whereby the area of the species is extended, in a somewhat similar manner as in the Strawberry, thus affording another link in the chain of evidence, If such were wanting, of the relationship of the two genera. The accompanying woodcut (fig. 10) represents two branches of a Bramble emitting roots around their apices, taken from a plant that overhung a small stokehole, and growing in diffused light, but scarcely in shade. Some of the branches, such as the smallest figure in the woodcut, had their apical buds as much as a foot above the coke in the stokehole, others only 2 or 3 inches above it, and some in contact with the coke; in all there were about a dozen branches, and every one of them was developing roots as represented. W.E. Brezon. [Advantage is taken in country churchyards of this propensity by arching over the gravemounds with the shoots of Brambles, which root at their free ends in the manner above described. Ed.]

Scarlet Pelargoniums and Snow.—It does not often occur during one's lifetime to see scarlet Pelargoniums in bloom surrounded with snow, only leaving the trusses of bloom visible. This occurred here some few years since—but I forget the date now. Also again on December 6 and 7 last we had 5 inches of snow, and 7° of frost; but the snow so protected the Pelargoniums that some are standing now, the contrast between the bright scarlet petals and the pure white snow being very remarkable and conspicuous. W. Divers, Wierton, near Maidstone.

Clematis coccinea.—This remarkably handsome climbing plant, after four years' trial, has proved to be one of the most desirable for any purpose where climbing plants are required. The pland is a herbaceous perennial, the stems dying to the surface each winder (this is an advantage where an unobstructed view is required in winter); the stems attain the height of from 8 to 10 or 12 feet, beginning to flower in June and continuing until frost. Single stems have from twenty to thirty flowers on each, and frequently as many as ten stems will start from one crown each season. The flowers' are bell-shaped, in colour a rich deep coral-scarlet, shining as if polished, and lasting a long time when cut'; indeed, one of the most beautiful plants for festooning is to be found in Clematis occinea, with its peculiar shaded green and elegantly cut and varied foliage; if it never flowered it would be a handsome climbing plant. The plant, during our observation, had no insect pests or enemies; it grows freely in any soil, requiring only one or two hours sunshine to strengthen the stem sufficiently to make a successful flowering season, and, above all, is perfectly hardy, standing exposure in our severest winters without harm. Wallem & Legrand, Ghent.

Chrysanthemum Culture,—In answer to an inquiry made by a correspondent in your issue of December 15 as to the most approved methods of growing Chrysanthemums I give you a brief sketch of the method which I have adopted for some years, and which has been attended with the most gratifying results. I put in my cuttings about the last week of December or the first week of January, and place them in a frame where I have the power to turn on a little heat if the weather should become very severe. I put the cuttings into 5-inch pots, six in each, the soil used being simply loam, leaf-mould, or cocca-nut fibre and sand, with a sprinkling of good sharp sand on the surface of each pot. After the cuttings have sufficiently rooted, which will be in about six weeks, I have them potted off singly into 3 or 4 inch pots, and placed in a pit close to the glass, taking care to avoid undue crowding, which would result in spindly weak growths. In this pit a growing temperature is maintained, but at the same time the plants are allowed plenty of air on all available occasions; the great point to aim at being, as all Chrysanthemum growers know, the keeping of the plants in a sturdy condition throughout the various stages of their growth, and to attain the same careful ventilation, watering, and pinching are essential. As soon as the plants begin to show signs of a shift being required I have them again reported—this time into 6-inch pots—using the same compost as before, with the addition of some old hot-bed manure. Allowing pletty of room between each, and giving abundance of air, and also plenty of water at the roots. At this stage they will be benefited by frequent syringings, and also by occasional fumigation with tobacco-paper to keep green-fly in check. At this time, as soon as the roots reach the edge of the pots, I begin to water them with liquid-manure water, that from a cowyard being by far the best I have tried for rooducing a healthy, vigorous growth, and imparting Chrysanthemum Culture,-In answer to an time, as soon as the roots reach the edge of the pots, I begin to water them with liquid-manure water, that from a cowyard being by far the best I have tried for producing a healthy, vigorous growth, and imparting a dark, healthy tinge to the foliage. About the end of June I prepare to shift them for the last time, and for this last shift I do not use pots, but wooden tubs, and to the use of these tubs in preference to pots I attribute my success. They are simply the tubs in which butter has been imported from Denmark and elsewhere, and which can be had at a cheap rate from any provision merchant. They will last one season quite well just as they are, but I have mine all fitted with an iron hoop, which makes them serviceable for three or our seasons. They also of course require some holes bored through their bottoms with an auger, to allow of sufficient drainage. These tubs being larger than the ordinery flower-pot generally used for Chrysanthemums, give the plants more root space, and it seems to me that the more of this you can let a Chrysanthemum have—other conditions being favourable—the more vigorous it will become, and the more abundant crop of flowers it will produce; and the more abundant crop of flowers it will produce; should further, these tubs being broader at the surface of the soil than the flower-pot, allow of more space for the shoots to expand themselves, and in some cases also allows of more shoots being retained, which is a distinct advantage where large quantities of flowers allows of more shoots being retained, which is a distinct advantage where large quantities of flowers have to be produced. And again, not only are these wooden tubs most suitable in so far as they allow of plenty of root space, but they have another advantage,

viz., the plants in them do not become dry readily, as they do not absorb the sun's rays, and get heated like an ordinary flower-pot. Fas. Wilson, Jun., Florist, Greenside Gardens, St. Andrews, N.B.

Is the Rhododendron Poisonous?—The following case, which occurred here some years ago, should finally settle the above disputed question:—A number of sheep in the park (nearly a score) were taken suddenly ill, six of which died almost immediately. On opening one the stomach was found to contain a quantity of Rhododendron leaves, which proved beyond a doubt that death resulted from eating this evergreen. The remaining fourteen, I am informed by the shepherd, never really recovered from the effects, the poison seeming to have so thoroughly pervaded their system that all attempts to bring them into condition for table purpose were useless. A. D. Webster, Penrhyn, North Wales.

Pears Doyenné d'Alençon and Easter Beurré,—Your correspondent, Mr. A. O. Walker (p. 821 of yourlast volume), is scarcely correct in calling Doyenné d'Alençon the same as Easter Beurré Pear—they are very distinct both in growth and fruit. A Pear Congress in 1884 will help us all if we get a fairly fruitful season. Pears are very much out of season bere this year—our late ones being nearly all gone. Geo, Bunyard, Maidstone.

A Fungus Infesting Sweet Williams.—Enclosed I beg to hand you some pieces of Sweet William destroyed by a fungus. We had about 1000 very fine plants for blossoming next year, all raised from seed last summer, and in the autumn we noticed a few patches of the fungus, and used Gishurt Compound and sulphur mixed with it as a solution, applying it with a syringe. We thought we had destroyed it, but find that all the plants that are not dead are dying piecemeal, and there is not one that has escaped. It is quite as destructive as the Hollyhock fungus. We cannot grow one of these seeds from Japan; immediately they are up in the seed pans under glass, they are attacked and destroyed. Not having noticed it on Sweet Williams before, I thought I would send it to you, to see if you know it. W. H. The name of theflungus infesting your Sweet Williams is Puccinia arenariæ, Schum., (P. lychnidearum, Mont. It is curious that the young seedlings in the seed pans are destroyed by the fungus—a similar fact in reference to seedlings of Hollyhocks and Mallows was pointed out in the Gardeners' Chronicle by Mr. Berschey, Mr. Boscawen, and Mr. W. G. Smith. We Bersched Hollyhocks and Mallows. ED.]

Impatiens Sultani.—I was pleased to see the note in your number for December 29, 1583, respecting this plant, and I am glad to be able to confirm all that "F. S." has said of its good qualities. I add, however, that with me it has grown and flowered very freely up to the present time (January 7, 1584) in an intermediate-house, and I have no doubt but that it will prove to be a very valuable and easily cultivated winter-flowering plant. S. Salvozy, Flete Gardens, Evployledge.

Iris reticulata var, cyanea opened its first bloom with me in the open on January 5. The bulbs came from Messrs. Haage & Schmidt. I do not know the origin of the variety, but the flower bas all the characters of I, reticulata Krelagei as far as form is concerned; but the standards are far as form is concerned; but the standards are light blue, and the falls dark blue with a slight tinge only of red. I may remark that I, reticulata Krelagei is with me not only earlier than the typical form, but much earlier and actually precedes I, Histrio, generally opening about the same time as Crocus alatavicus, and before Crocus Imperatori. This variety is also much more variable in colour than the typical form, and probably before long we shall have I, reticulata var, alba, which will please the Iridophils. M. Foster, Shelford.

Corn Marigold. — Having dug up and potted some of these plants last autumn as an experiment to test their winter flowering properties, I am agreeably surprised to find that they are in every way a success. They are now one mass of bloom, and preferred by some to the Marguerites. The only treatment they received was potting in ordinary soil and housing in a pit. S. 7.

Mushrooms in the Open Air.—It is not often that one can pick a dish of Mushrooms outside and totally uncovered on New Year's Day. This, however, was done here on that day this year, a beautiful plateful of this esculent being cut from round the edge of the manure-heap, where they grew on the ashes upon which the manure stood—not, as far as I could see, being influenced by the heat from the manure-heap. A large Jasminum nudiflorum is also in full bloom on an east wall. I also picked a spray of full blown Pear blossom off a pyramid of Doyenne

d'Eté in the Christmas week, and the whole tree will be in full bloom in a day or two, if the present mild weather continues. I an afraid the consequences will be serious when a change sets in. West Cheshire.

Scolopendrium vulgare var, cristatum O'Kelly (Stansfield),—I have received from Messrs. Stausfield, Sale, near Manchester, a plant of Scolopendrium vulgare var. cristatum (O'Kelly), which has recently been found wild in the West of Ireland, and as a natural sport of a hitherto unknown character among our British Ferns well merits the notice, not of Pteridophilists only, but of British botanists generally. From the accompanying figure (fig. 11) it will be seen that, apart from the symmetrical cristation and somewhat singular semisatitate base, the frond is remarkable for being thickly studded with young plants, after the manuer of Woodwardia orientalis; instead, however, of these plants heing scattered singly over the frond as in that Fern, they are produced in linear groups on the upper surface, along the lines which the sori



Fig. 11.—SCOLOPENDRIUM VULGARE VAR. CRISTATUM O'KELLY (STANSFIELD).

(absent in the plant before me) would follow on the under surface, first appearing as warty protuberaces, which speedily develope into plants, as indicated in the figure. This fructification therefore appears to present a somewhat analogous transformation of spore-producing energy to that recently noted among the plumose Athyria. Sundry well-known varieties of Scolopendrium vulgare bear bubblis on their stipes and elsewhere, but one of those proliferous forms in the least resemble that of O'Kelly in the special characteristic indicated, or vie with it in symmetry and beauty. C. T. Drucry, Fernholme, Feret Cate. [This case is worth considering with reference to the relative position of the male and female organs on the scales of Conifers. Ed.]

Vine Culture.—Kindly allow me a little space to make a few observations respecting some young Grape Vines raised here from eyes put in about the end of January, 1883. Single eyes were inserted in 48-pots, and stood on the beds in a Cucumberhouse, not plunged in a strong bottom-heat as I think is the usual practice, for they did not receive any bottom-heat beyond what came up through the bed (which is 3 feet through) from a 4-inch pipe. The atmospheric heat of the house was kept at this time about 60°. The pots were three-parts filled with a

good rich compost, and the remainder with a coarse saad, which I find the eyes callus in most quickly: they soon emitted roots, and made a quick growth. They were potted twice, the last time into 6-inch pots, in which they remained until the last week in May, when they were taken out of this house and plaoted in the borders which bad been previously prepared for them. The border, which is entirely inside, consists of three-parts loam and one part cowdung, with a good drainage. They were about 3 feet high at this time, and soon took root in the new border, and have made a well matured fruiting cane 22 feet in length. I have cut them back to within 6 feet, and iotend fruiting them this season. The house is a lean-to 72 feet long, with a rafter of 17 feet. It stands due south. We have also another vinery 48 feet long, planted in the same manner as the above. The year after planting there was \$\int 20\$ oworth of Grapes cut, and this being the second year of fruiting we have cut \$\int 48\$ 16°, worth, and also took 1st prize at the local show with fruit cut from the same. I hope I shall not be trespassing on the much valued space of your paper, but I should like to show some of your lookperienced readers—such as the young and old school gardeners—that instead of cutting the Vines quite back the first and second year, and not fruiting them until the third year, so that it is some-times four years from the time the eyes are put in, such practice is not accessary. I have had cases of this sort come under my notice this last four or five

Plants in Flower in Cornwall.—The following list of flowers picked in the garden here on December 26, 1883, may be interesting to some of your readers. M. C. B., Trengwainton, Penzance.

Abution Brute de Neige

Abution Brute de Neige

Chary Brd

The Arrengen

Abution Brute de Neige

The King

Theodore Smidt

Acacia armata

Alyssum saxatul

Anterhinum

Arabia alpina

Aubrietta

Anterhinum

Arabia alpina

Aubrietta

Autrrinoma

Aubrietta

Autrrinoma

Aubrietta

Autrrinoma

Aubrietta

Castes

Ca

Laburnum
Limoanthes Douglasii
Marigold Le Proust
Marigold Le Proust
Mignonette
Narieste
Narie

Potato Disease: Protective Moulding.—
In reference to the discussion on Mr. Jeusen's method of protecting Potatos from disease by earthing-up, I would like to state, as the result of long experience in cultivating Potatos on my own land, and of observation on the farms of other people, that—(1.) The Potatos at or very near the surface are more frequently diseased than those at a greater depth, of the same root. (2.) Varieties having a thick skin are less liable to disease than those with a thin skin, the Black Cape Breton Potato and the Red Seedling enjoying almost a perfect immunity from disease, (3.) Soft spongy Potatos (those whose tissue consists of large cells with thin cell walls), such as Jenny Lind and Early Rose, are markedly more liable to disease than solid compact Potatos of high specific gravity. I have recommended the farmers of this province to follow Mr. Jensen's plan as a prudent practical measure to protect their Potatos against disease, whether they believe or dishelieve his theory, George Lawson, LLD., F. Inst. Chem., Frofessor of Chemistry, Dalhousite College, Halfyax, Nova Scotta.

CYATHEA MEDULLARIS.—No idea can be gained of the noble proportions which this Tree Fern attains from specimens cultivated in pots, or where its headroom is restricted in small bouses. In the winter garden at Kew, where it is planted out, and where the temperature all the year round never exceeds that of a cool greenbouse, the great spreading bi-tripinante fronds are quite a feature of the house. Seen from the gallery the immense plumes, of the deepest green, are far more impressive, affording a heautiful contrast to the Araucarias, Dammaras, and other tall cocupants of the house. Besides the root room gained in planting out, the fronds are less liable to damage from the moving about to which those plants in opto are often subject. The specific name is derived from the circumstance that the medulary or pitch visue of the trunk is used as food by the native New Zealaaders.

THE AMARYLLIS.

Some of my hybrids show-first, that fine forms and colours may be obtained by simply crossing some common varieties, and second, that the various forms not considered sufficiently good to retain may, nevertheless, be made to serve a scientific purpose. Thus, not only new and charming varieties for the florist's collection can be raised, but also types which may have great value to the botanist. These various types are either new forms, or reversions to some ancestral types. In the latter case the hybridiser calls them up, as if by magic, from the depths of oblivion, and presents them to the scientific eye as most interesting objects. I think it possible by this means for a botanist, with extensive knowledge of the Amaryllidaceæ, to put together, so to speak, a history of the Amaryllis—or, in other words, to recover the extinct forms through which the Amaryllis has passed. If hybridisers kept a record (a sort of stud-book) of all they did, it would, after five or ten years, give a most interesting collection of facts, by which, very probably, some important laws might be revealed.

I believe that the bars on the petals of A. reticulata are merely a repetition of the stripes along the middle of its green leaves; that A. vittata, which has similar bars on its petals, is a near relative of A. reticulata, and that it got its bars from the same source, viz., the green leaves; but that in course of time the stripes on the leaves of the vittata disappeared, or probably were originally inherited only by the petals. That the one flowers in autumn and is evergreen, and the other in spring and is deciduous, in my opinion signifies In this climate [India] the spring-flowering ones retain their old leaves till and during the time they flower again next spring, and do not get their new crop of leaves till after flowering. Moreover, some of the same spring-flowering ones give a few spikes again in autumo. I have now about a dozen seedlings, obtained by crossing two such last autumn, so that it is not impossible in this manner, and by continued selection, to obtain a breed of autumnflowering Amaryllis from the purely spring-flowering

The Amaryllis equestris, in many of its descendants, produces a distinct incipient bar at the base of each petal. I have a hybrid, named Cavalier, which is scarlet, with a well defined creamy star; each limb of the star has a well defined creamy bar, edged on each side with greeo. Whether this bar belongs to the original equestris or has been obtained in this hybrid by a cross with others I cannot tell.

The Amaryllises which have bars along their petals, or a tendency to them, have their venation rather peculiarly disposed. Here a little dissection may not be amiss. For iostance, let us take Mrs. Garfield. The upper and outer petal has a set of coloured venison each side of the bar, which I would call feathers. The latter petals are, as a rule, the most brilliantly marked. The two lower and outer petals, although of the same size and form as the upper, have only one feather on the upper side of the bar; while the lower and inner petal is quite distinct from all the others, is smaller and altogether of a different character: it is generally without a bar, and often without any distinct venation. It reminds one of the labellum of an Orchid.

I never look at an Amaryllis without thinking of an Orchid. Although at first sight the Amaryllis would seem a regular flower; it is in reality, in some particulars, almost as irregular as an Orchid. In botanical books the structure of an Orchid is referred to a diagram, in which a posterior petal is represented in the inner whorl, but which is stated to be frequently [almost always] anterior by the twisting of the ovary. Curiously enough, I have a hybrid Amaryllis which I named Ulta, and which has most of its flowers upside down-that is, with the odd petal (or labellum) uppermost, while the stamens and pistils repose on the main outer petal, which is lowermost. It may not, therefore, be impossible that Ulta is more like the typical Amaryllis, and that the one usually met with has its ovary twisted, so as to bring the labellum lowermost. Such phenomena are not uncommon. In the Papilionaceæ the vexillum is usually uppermost, but in Clitoria it is lowermost; and in a peloric form of the Clitoria I once had the flower consisted of a whorl of five equal sized vexillum-shaped petals. Orchids have one or two stamens, but it is supposed that the remaining five or four are suppressed. Orchids have a one

celled ovary, but in Aspostasia [and Selenipedium] there are three cells, like that of the Amaryllis. Further, some of my Amaryllises had their pollen in little masses or bars, which would not adhere to the brush; on my pressing them between my fingers they were resolved into the elementary pollen grains. Finally, when in Florence, I saw an Amaryllis which was called robusta. It had the form of a Sprekelia, and its bulb, although planted under the soil, was, they said, invariably pushed above the soil. This character might be taken to point to another link between the Orchid and the Amaryllis.

The distinct character of what I call the labellum in the Amaryllis points, I take it, to some distinct office. The upper three petals, or perhaps five of the petals, were probably intended by their colour and markings to attract insects, while the labellum may have, in some ancestral form, served to protect the stamens and pistil, somewhat after the fashion of the carina in the Pea. It is not unlikely, moreover, that all the three lower petals may have served the latter purpose, or at least the lower halves of the two lower and outer petals and the labellum. There is a feature in the Amaryllis which I have not seen noticed. At the very bottom of the funnel, at the entrance into the nectary, and where the short bristles of the upper petals project inwards, some kinds have a damson-Holland, however, has a deep crimson eye, which contrasts prettily with the green centre. might, in course of time, perhaps, be made to expand, and so add to the beauty of the flower. The bristles above-mentioned appear to serve the purpose of preventing small insects from getting at and robbing the nectar without fertilising the pistil. The long proboscis of a moth, or some such insect, could easily penetrate through the fringe while it balanced itself over the pistil. The damson eye round the fringe has probably served to catch the eye of the insect, so as to enable it to direct its proboscis to the entrance of the nectary.

I would end this notice of the structure of the Amaryllis by observing that most of the leaves are wonderfully adapted to collect the dew and conduct it down to the bulb. They are expanded towards the tip and contracted towards the base. By this form of leaf it would appear that the natural habitat of the Amaryllis is in dry climates, subject to night dews. Is this so? Is this or?

Besides the division of outer and inner petals in the Amaryllis there is another, viz., of upper and lower petals. The former consists of one outer and two inner petals, and the latter of two outer and one inner. This division is seen in an exaggerated form in Sprekelia, in A. robusta of Florence, in my Formosa, San Marco, and others. It is also visible in almost any Amaryllis which has been fortunate enough to have retained its irregular form; the venation of the three upper petals being almost always different from that of the lower three. in Florence in 1880 81 I saw a coloured lithograph of Amaryllis Professor Santarelli. This hybrid was raised by Signor Emilio Bonafedi, gardener to the above Professor. It had the form of the Sprekelia, but the colouring was different, and the petals broader. Its raiser told me it was a cross between A. vittata and robusta. Besides horticultural charm I thought it had great scientific interest. Taking into consideration the A. robusta (of Florence), A. Professor Santarelli, and some of my own hybrids, I have little doubt in my mind that Sprekelia as a separate genus has no raison d'être, and that it should revert to Amaryllis formosissima. While in Florence I tried hard to obtain seeds of the latter, both by self-fertilisation and by crossing it with others I had, but I never succeeded. However, in one of the numbers of the Garden I noticed that a Mr. John Farquharson, of the Acton Nursery, Wrexham, had exhibited in London an Amaryllis which was stated to have been the result of a cross between Sprekelia and an Amaryllis. Very little notice was taken of it, as it was stated it did not come up to Veitch's Amaryllises. I took great interest in this cross, and wrote to Mr. Farquharson. He sent me a bloom to Florence by post. It was rather faded; the colour approached that of the Sprekelia, but the form was that of an ordinary Amaryllis. The possibility of the Sprekelia crossing with the Amaryllis, although with difficulty, is an additional reason for considering it an Amaryllis. The difficulty of effecting this cross may probably be less than that required for self-fertilising any Amarvllis.

As to its being formosissima there can hardly be any question, even in these days of regular florists' flowers. For my part, I think its form lovely, and the splendour and richness of its colour are in my opinion not easily matched. It appears to have been longest known in Europe. According to Shirley Hibberd it was introduced into Spain in 1593. It appears to me very probable that it was the original form from which the "Fleur-de-Lys" of France and the "Giglio Fiorentino" were copied. The latter appears on the coat of arms of Florence, and is to be seen in that city on various shields. [While Iris florentina is common in the fields around the city!

As so many are beginning to interest themselves in the cultivation of the Amaryllis a great desideratum appears to me is a cheap work giving-1st, coloured lustrations and descriptions, history, &c., in chronological order, of all the original Amaryllises, with their habitats and climate, their discoverers and introducers; 2d, coloured illustrations and descriptions of the most striking and distinct hybrids, descendants of the above, with their parentage, raisers, time of flowering, &c., and if possible with the various steps by which the most perfected forms have been obtained. Many of them have been figured and described, they are scattered, and not readily access sible. If any one interested in this matter would collect and publish all that is known about the Amaryllis, with coloured figures, he would, I think, do a great service to the Amaryllis-loving public With sufficient time and patience such a work should not be difficult, but in order to make it as useful as possible its price should be moderate. many amateurs, no doubt, who could tell us a great deal about their experiments in crossing the Amaryllis. Professionals, of course, could tell us much more. have little doubt that many curious forms, the result of hybridising, have been thrown away or are lost, because they did not come within the definition of a florist's flower. These, nevertheless, as I have said, might have been invaluable to a genealogist, in enabling him to decipher the various stages through which the Amaryllis may have passed in its struggle for existence, up to the time of its discovery, when it came under the care and manipulation of man. Instead of throwing them away, these curious, and probably distinct glimpses of the past history of the Amaryllis might be preserved, and made over to some botanical society; thus might be brought together in course of time a collection of immense interest to the student of the origin of species. Here I should like to make a few remarks on the last part of Shirley Hibberd's lecture. He says that the funnel of the Amaryllis is objectionable. I would ask-why? He admires, I suppose, the lovely form of the Convolvulus; then why should not a funnel, approaching that of the Convolvulus, be an addition to the beauty of the Amaryllis? He does not object in toto to the green colour at the bottom of the funnel, am glad to find, because, in my opinion, if the green approaches the shade of the inside of a Melon or Cucumber it is simply charming.

It might be well enough for an individual to encourage a particular type for which he may have a fancy, but I think when a Society does the same thing it becomes different. It is hardly the office of a Society to set a fashion by giving prizes for a particular form of a particular flower. Its office, I should say, is to encourage general excellence in all directions. Would a Society be wise, for instance, in offering a prize for making the form of an Orchid Beauty and excellence, one can safely say, regular? are not qualities that can be restricted to any parti culartype. It does not consist in anything being round, or broad, or large, or this or that. It may have none of these qualities, and still be very beautiful. hear that so and so exhibited an Amaryllis which had all the qualities of what an ideal Amaryllis should be But I would ask of what form is this ideal-that of the formosissima, or that of the Leopoldi? It is evident that the former must have been thought most beautiful, otherwise the specific name would hardly have been given. As far as my own taste is concerned, I really think it formosissima, and should gladly wish to see two or more ideals set up.

See what happened to the Dahlia. First, nothing but a globe—"the great ideal "—was admissible, with each petal disposed as if by rule and square; no Dahlia was perfect unless it submitted itself to this torture. Then came the Cactus Dahlia, which had none of the above qualities. It was nevertheless a

marvel of beauty; and now every one praises the loveliness of the single Dahlia. Probably the time will come when to possess a globular Dahlia will be a sort of crime. It is no wonder that some people rebel against all these vagaries, and go to the fields and mountaios to enjoy the wild flowers just as Nature made them. When a Society puts the "hall mark" on certain flowers with certain qualities a fashion is set up which small horticulturists cannot afford to despise it they wish to sell their plants. But a large horticultural society and amateurs who care not to sell their plants ought to be above this, and should strive for excellence, independently of fashion. I do not mean to say that societies have not done wonders in encouraging the growth, introduction, and improvement of flowers and plants, and in disseminating knowledge of them; but this I say, that societies have been, and may continue to be crotchetty, and prevent us from deriving the maximum of enjoyment we might from the floral world. After all I have said, I fully admit that in the Republic of Horticulture one should do as he pleases with his own. Of course a person who lives by this profession must do what he can, or what pleases others; at the same time I have a notion that there are more ways than one for improving a flower. E. Bonavia, M.D., Surgeon-Major, Etawah.

(To be Continued.)

FORESTRY.

THE DOUGLAS FIR (PSEUDOTSUGA DOUGLASH), -As a substitute for the Larch this beautiful North American Fir has of late years been more frequently brought under notice than perhaps any other. It is a tree that so far seems well suited to the climate of Britain, is perfectly hardy, of easy culture, and not at all fastidious about soil. I am, however, rather dubious as to its value for planting in exposed situations, for several experiments in this way have proved anything but satisfactory; indeed, it is hardly to be expected that a tree inhabiting one of the richest and most delicious valleys in the world would in our variable climate succeed in any but the most sheltered situations. [It is not confined to such spots. ED.] Here a prevailing evil with this tree is the repeated loss of leaders, which on overtopping the surrounding trees are usually broken over, th to many of our finest specimens a flat or table-headed appearance. This might, however, to a great extent be averted, as I believe that a plantation formed of this tree alone, or along with the Silver Fir, whose rate of growth more nearly approaches that of Pseudotsuga Douglasii, would succeed better and be less liable to injury during a storm than when mixed up with the general run of forest trees. This has, indeed, to some extent been already proved here, as in two of our woods, where belts of this Fir alone were planted, they have succeeded better and are not nearly so liable to injury during severe weather as those placed singly throughout the same plantations. With this in view we have at present formed a small plantation of the Douglas Fir in a low-lying, well-sheltered piece of ground, within a short distance of the sea. The plants used were strong, well-rooted, bushy specimens, from 3 to 4 feet in height, and planted at 8 feet apart, the intervening spaces being filled up with Larch for removal at an early date. The Douglas Fir as standards can thus be left at 16 or 24 feet apart, as hereafter found practicable. The soil is good strong loam, from which, as well as the sheltered position, I have every reason to expect more satisfactory results than have heretofore been obtained from this Fir.

This tree has been extensively planted at I'enrhyn—indeed, more so than perhaps any other of recent introduction, Pinus Laricio excepted; but more as an ornamental tree than for general plantation purposes. Within the park are some very fine specimens, which from their large size must have been planted shortly after the introduction of the tree in 1827. Close to the carriage-drive leading from Penrhyn Castle to the model village of Llandegai are three of unusual dimensions, as shown by the following figures:—

No. 1.—Height, 79 feet; girth of stem at 1 foot, 13 feet 6 inches; girth at 5 feet, 11 feet 6 inches; diameter of spread of branches, 66 feet.

No. 2.—Height, 76 feet; girth of stem at I foot, 13 feet; girth of stem at 5 feet, II feet; diameter of spread of branches El feet

spread of branches, 51 feet.

No. 3.—Height, 72 feet; girth of stem at 1 foot,

9 feet 2 inches; girth at 5 feet, 8 feet 7 inches; diameter of spread of branches, 48 feet.

These are well clothed with glossy foliage to the ground, seem in perfect health, and would have been model specimens, had their leaders not been broken over.

As an ornamental tree the Douglas Fir can hardly be surpassed. The dark evergreen, Yew-like appearance of this tree, combined with its rapid rate of growth and massive proportions, rendering it admirably adapted for planting along the outskirts of plantations that can be seen from drives or walks, where it forms a striking contrast to other trees of a more light and airy appearance: The appearance of the tree is usually very symmetrical, with an erect, taper trunk, which, when old, is covered with rough, rugged bark, filled with receptacles of clear, yellow resin, as in the Balm of Gilead. The timber is hard, durable, of a colour almost as deep as Yew, and susceptible of a fine polish. Several spars grown here have been used by boat builders on the Menai Straits, but otherwise the timber has not been generally employed, few trees of a suitable size for planting having been From specimens of the wood, included in a collection of the different kinds grown on this estate, appears strong, firm, and beautifully grained, though more liable to the attack of insects than most other kinds. This I have no doubt is, however, owing to the immaturity of the wood, as I find that most timber cut when in a young state is more liable to dry-rot and the attacks of insects than that felled when of a more advanced age.

From the Pinetum Britannicum I have copied the following regarding experiments with different Pine woods made by Mr. Wilson Saunders, of Lloyds, by which the great superiority of the Douglas over the others experimented upon will be seen.

Lengths of each of the woods commerated in the following table, carefully squared to 1½ inch, were submitted to pressure of weights pendent from the centre, the lengths being supported between standards exactly 6 feet apart. The weight at which each broke, and the amount of deflection from the horizontal line at the time of breaking, are given:—

			Le.	in.	
Douglas Fir			285	4	Fracture rough and long.
Pitch Pine			280	4	Fracture short and even.
Canada Sprud	e		196	4.7	Fracture short and rough.
Red Pine			168	6	Fracture rough.
British Larch			168	5.2	Fracture short and even.
Deodar from t		12-			
layas		• •	154	3.8	Fracture short.

The specimens experimented on were carefully selected from the best description of woods and free from all defects.

The deflection is in inches and tenths of an inch.

Each wood had two trials, and the figures give a
mean result. It will be seen from the above figures
that none of the Firs approached in strength either the
Douglas Fir or the Pitch Fioe, and while these two
were equal in strength there was this great difference,
that while the latter snapped short under a strain of
250 lb, the Douglas yielded unwillingly with a rough
and long beard slowly, toughly, and almost imper-

and rong neared stately occupiedly.

The Douglas Fir is readily propagated from seed, which is borne in great quantity, even by young trees; but it is well to remember that cones collected from medium-sized, healthy trees are always preferable.

It is, however, generally believed that plants raised from British seed are inferior to those grown from seed produced in its native country, and about which much discussion has taken place. In the Transactions of the Botanic Society, Edinburgh, Mr. MacNah published some facts which seem to warrant the conclusion that British raised seeds produced degenerate and inferior plants. Be this as it may, we have raised several lots of strong, healthy plants from seeds collected in the park here, and many of these have been planted-out permanently, the success or failure of which will be carefully noted, and no doubt reported on at a future date. A. D. Webster, Penrhyn Castle, North Wales.

GEUM PYRENAICUM. — A large-flowered form of this pretty rock plant is now in flower on the new rockwork at Kew. Several of the genus are high-class hardy ornamental plants; and this species, with its large golden-yellow blossoms nestling among the rosettes of spreading leaves, is certainly not one of the least desirable.

Floqists' Flowers.

AURICULA.—Writing about the Auricula a few months ago, I stated how useful the alpines were for planting in the rock garden. As soon as sharp frosts and wet touch the plants, the outer leaves decay Time ought to be found to clear off these decayed leaves, and to press the plants firmly into the ground with the fingers. A few of the more common of the show varieties may also be planted out, when they are plentiful enough. The selfs with green leaves are the best for this purpose, as those with farina dusted on the foliage thickly are made unsightly in heavy rains. Those who have the convenience of a house for their Auriculas ought to place them in it at once; and it is as well to keep out frost by means of the heating apparatus. There are some Auriculas which open their flowers very well in frames, others require the aid of a slightly heated house to produce a satisfactory bloom. The seeds of Auriculas will vegetate freely during this month if the pots are in the same house. We have usually sown the seeds in July, in hand-lights in a shady place, where some of them vegetated at once, but others have lain dormant until early spring. We thought it better to keep the seeds in a paper and sow them this year about the middle of January.

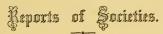
THE CARNATION AND PICOTEE.—I have noticed, on looking over a number of collections of Carnations, that the plants are kept usually very dry at this season—dust dry, in fact. Now it is a mistake to allow the plants to become very dry at the roots. I am not sure whether they are not more liable to be attacked by disease, when kept in that state, than if they were too wet. Our plants are plunged in cocoanut fibre relase in cold frames, where they get plenty of air, as the lights are removed all day if it does not rain, and they are tilted at night. They require water once in two or three weeks; this is sufficient to keep them moist enough, and the plants grow freely when the temperature is above the freezing point.

THE TREE CARNATIONS are now in bloom, and their flowers are more esteemed than those of any others we have. These do best in an atmosphere that is rather dry, with as much ventilation as will admit of the temperature at night being kept up to 50° or 55°. A little weak manure-water occasionally causes the flowers to open freely. Cuttings ought to be put in during the month of January. These early cuttings make very strong flowering plants by September, that continue to produce flowers from that time until long after Christmas.

HOLLYHOCKS .- Those who are anxious to get up a stock of plants will begin as early as possible in the new year to propagate either by root grafting or from cuttings. The growths should be taken off with a hud attached, and they may either be grafted on to a bit of root, or be carefully potted in small pots, using a sandy soil. Some persons, with no better accommodation than a hotbed, manage to propagate them, but in that case it is best not to begin propagating until February, as they are very apt to damp off in the moist atmosphere of a frame. They do best in a mild heat in a propagating-house. A gentle hottomheat should be given to them, and they ought to be covered with a hand-glass. If potted in rather moist potting material they will not require any water for a week at least. Careless watering kills numbers of them. For Hollyhocks, Dahlias, Gladioli, &c., the ground should be prepared now by trenching, if it is not already done. It is not possible to grow either of these up to the highest standard of perfection unless the ground is trenched from 18 inches to 2 feet deep. The whole of them are gross feeders, and require plenty of rich manure as well, but it ought not to be placed in immediate contact with the roots. Our plan is to dig out a treoch of the required depth and say 2 feet 6 inches wide. In the bottom of this trench place a layer of manure, then mark off 2 feet of the ground and dig out a good spit of mould on to the manure, then shovel the loose earth on to it, making it level. Another layer of manure should be placed over this, and another spit dug out on to it, with the loose earth added, will usually get to the bostom of the trench. The bottom of the open trench

ought to be forked up before the manure is put into it. In this way there will be from 6 to 9 inches over the top layer of manure. The surface ought to be lightly forked over several times, to thoroughly expose the soil to the air. When the Dahlias or Hollyhocks are planted some good rich soil ought to be placed over the roots.

PINKS .- A week ago we placed a few pots of the forcing Pinks in a house where they will get a little artificial heat without being unduly forced. taste, the best of all this class is Lady Blanche; the flowers are not so large as some, but the petals are well formed and nicely fill the pods without causing them to burst. These are really charming flowers to cut in March and April. A succession of them should be kept up until the middle of June, which would give three months of white flowers, and the sweetest of white flowers withal. Mrs. Moore is also pretty and very sweet. The flowers of this are white, with a dark centre; they ought to come laced, but this they fail to do in a forcing-house. It does not matter much, as for ordinary purposes of decoration or for bouquets they are as useful without the lacing as with Mrs. Pettifer still maintains its place as a good variety of this type. Of the purple or rosy-purple varieties Derby Day is scarcely worth growing in comparison with Lord Lyons; this is a very useful variety, which we place next in value to Lady Blanche. It has the same dwarf habit of plant, and the flowers are of the same character, a good pod that does not burst, but sufficiently filled with well-formed petals. In forcing these Pinks give them plenty of light by keeping the plants near the glass. See that they do not at any time lack for water, and let them have weak liquid-manure occasionally, gradually bringing them on, in a moderate temperature at first, say about 50°, and not more than 55° to 60° at any time. They are liable to be attacked by greenfly, which must be removed by dipping or fumigating. J. Douglas.



Royal Horticultural: Jan. 8.

SCIENTIFIC COMMITTER.—Sir J. D. Hooker, K.C.S.I., in the chair. Present: Messrs. Houston, Church, Ridley, Loder, G. Murray, Smee, McLachlan, W. G. Smith, Boulger, Wilson, Grote, Moore, Drs. M. Foster, Lowe, and Masters; Rev. G. Henslow,

Secretary.

Polato Disease,—A letter was read from Mr. Plowright, in which he asserted that the conidial tube proceeding from the germinating spore will penetrate the corky rind of the tuber when that is moist, as it its other below ground, but only through the eyes when the tuber is dry. Mr. Mursay stated that the question was, not as to the possibility of such penetration, but as to what was the ordinary method of procedure. A communication from Mr. A. S. Wilsoo on the same subject was also read.

subject was also read.

Mr. Worthington Smith read a paper on the subject
of filtering or sifting fungus spores through sand and
water. Mr. W. G. Smith referred to some experiments he had made for reference to this subject. He said spores of the Potato fungus were not readily procurable in sufficiently large numbers wherewith to make satisfactory experiments, but spores belonging to the smut of Corn (Ustilago carbo) he had in large quantities, and with these the experiments were made. Ustilago spores, being nearly black in colour, pos-

osting optics, the first process of the Potato lungs, which were colourless.

Cylinders of glass were taken, each 8 inches long and half-an-inch in diameter; into one of these of inches of fine sand were placed, the bottom of the tube being first tied over with calico to prevent the sand escaping. A teaspoonful of water charged with Ustilago spores was then poured on to the top of the Usuago spores was then poured on to the top of the sand; in ten minutes the water had all run through, and on examination with the microscope as many spores were present in the water which had percolated through the 6 inches of sand as in the water which had not run through.

A second and similar cylinder was taken and charged with perfectly dry earth in fine powder; water was then poured on the earth to make it quite compact, and more powdered earth and water placed in the tube till a compact 6-inch mass was presented. A spoonful of water charged with Ustilago spores was poured on to the top. In two hours no wate had run through, so the tube was left in a perpen dicular position over a saucer all night. In the morning a part only of the water had run through, and this water was thickly charged with Ustilago

Mr. Smith said he was in the habit of filtering Mr. Smith said he was in the habit of filtering collodion through cotton-wool purified with spirits of wine, so that every particle of dust and all minute atoms of grit might be retained in the wool, and he had never found the purified cotton-wool fail; he therefore placed a plug of wool an inch deep in a third cylinder, and poured water charged with Ustilago spores on to the wool. In a short time most of the water had passed through, and there were as many sources or pearly as many, in the filtered as in the spores, or nearly as many, in the filtered as in the unfiltered water.

In these experiments, as was to be expected, all the spnres did not run through with the water in which they were originally held, some of the spores, together with a little water, remained, but on the application of additional water (as must occur in the case of rain) all, or nearly all the spores doubtlessly ran through. In the water which had passed through the earth a considerable number of spores belonging o two other fungi made their appearance—these

have been present in the earth.

Mr. Smith said he had not the slightest wish to depreciate the value of Mr. Jensen's interesting field experiments, or to under-estimate the value of high-moulding in Potatos, he had merely challenged the experiments with sand, earth, and fungus spores. It had been proved, be said, that spores of a fungus (Dactylium oogenum) could find their way through the shells of fowls' eggs and grow on the membrane within the shell. In the face of a circumstance like this—and several others of a similar nature might be added, said Mr. Smith—the reports of spore-filtering through sand should not be received with too much

credulity.

In the discussion which followed, Professor Foster recalled the fact that the spores of Penicillium contained fatter matter, which rendered them difficult to be wetted. Mr. Murray expressed his disbelief in the power of earth to prevent access of the fungus spores. Professor Church pointed out, with reference to Mr. Smith's experiments, that cotton-wool was naturally greasy, and in that condition offered obstacles to the passage of water, but if the grease were removed by ether, water would pass through the cotton with

rapidity.

Phylloxera in Victoria.—Mr. McLachlan showed specimens of the roots of Vines grown in the colony of Victoria, undoubtedly affected with Phylloxera; and what made the matter even more serious was the fact that the insect occurred on roots of old stumps left in the ground. Dr. Masters remarked that it had been found necessary in English vineries to com-pletely remove the soil of the borders when affected with Phylloxera. Such soil, where possible, should be thrown into deep water.

Coltsfoot in Bloom.—Mr. McLachlan mentioned

the circumstance that he had noticed the common Coltsfoot in bloom on January 7 near Lewisham, the same date as in the year belote last.

Supposed New Species of Freesia.—Professor Michael

Foster exhibited a flower of a species of Freesia not hitherto known in gardens, and which was referred to

Mr. Baker for examination and report.

Chlorophyll.—Professor Church then made some remarks upon a paper by Dr. Tschirch read before the Chemical Society on December 20 last. The author stated that chlorophyll may be prepared by reducing chlorophyllan (*Botan*. Zeitung, 1882, 533) by means of zinc-dust. Professor Church referred to by means of zinc-dust. Professor Church referred to his previous use of zinc-dust for the regeneration of llorophyll, with its original spectrum, in the year 878. (See Chemical News, xxxviii., p. 168.)
Orchid Culture Out-of-doors.—Mr. A. Smee related

some results of his experiments in cultivating Orchids in the open air. He had found that Odontoglossum in the open air. It is not lound that Odonicolosisum crispum would bear as low a temperature as 8° of frost (24° F.), but was killed by 11° of frost (21° F.). O. Rossil var, majus had not only resisted the latter temperature with impunity, but had produced its flowers. A thermometer was hung with the plants, which were slightly protected by a few branches.

FLORAL COMMITTEE.— Present:— Section A: G. F. Wilson, Esq., in the chair; Messrs. H. Ebbage, J. O'Brien, J. Dominy, H. Williams, J. Hudson, H. Herbst, J. Woodbridge, J. Fraser, J. Laing, E. 11ill, H. Ballantyne, and the Rev. G. Houslow. Section 11. Bailantyne, and the Rev. G. Henslow. Section B: Shirley Hibberd, Esq., in the chair; Messrs, H. Bennett, W. Bealby, J. James, J. Douglas, J. Child, G. Duffield, D. C. Lathbury, H. Cannell, and W. B. Kellock. A small but very good display of flowers graced the conservatory on Tuesday for the opening day. Mr. B. S. Williams. opening day. Mr. B. S. Williams sent a charming bank of Cyclamens and Chinese Primroses, the former well bloomed and first-rate in quality, and the la including all the strains of plain-leaved and "fim-briata" varieties that with him have so long been a A Bronze Banksian Medal was awarded. speciality. speciality. A Bronze Banksian Medal was awaroed. Mr. Henry Little also exhibited a remarkably pretty group of flowers, consisting of beautifully-grown Cyclamen and Primulas, alluded to elsewhere, and flowering plants and cut flowers of various Orchids. The latter included fine types of Lycaste Skinneri, and Odontoglossum Roezili, the latter especially being well marked; several nice Odontoglots, a good

pan of Cypripedium Spicerianum, &c. A Silver Banksian Medal was awarded. From Mr. Henry Bennett, Shepperton, came a box of twenty-four blooms of Chrysanthemum Princess Teck, each bloom perfect in form, and the purity of the white heightened by the flush of rose on the lower petals. They were cut from plants grown in the open air, and lifted up and placed under glass in October. Messrs. Cannell & Sons had a Bronze Bank-sian Medal for an excellent group of Primulas, com-mented upon in another column. Mr. Mann, gr., Denton Hall, Grantham, sent two very strongly grown heads of Poinsettia pulcherrima, each with three breaks, in which the bracts were long, of good breadth, and perfect in colour, illustrating what good cultivation can be achieved with skill and an 8-inch cultivation can be achieved with skill and an 8-inch pot. From Mr. Ross, gr., Welford Park, Newbury, came several seedling Crotons Joannis x Veitchii, and Joannis x Weismanni; and Mr. H. Eckford, gr., Boreatton Park, Salop, showed a very pretty Primula named Perfection, in colour a flush of purplish-rose with a clear lemon-yellow eye. Mr. Herbst, ol Richmond, brought up a sample half-dozen pots of forced Lily of the Valley, and which won the admiration of all for the perfect development of flowers and foliage. From W. Brockbank, Esq., came a grand plant with a cluster of over 100 white flowers of the Brockhurst variety of Helbeorus niger angustifolius, and which was awarded a Cultural Commendation. R. P. Percival, Esq., Birkdale, Southport, sent a good flowering specimen of the lovely Cattleya Percivaliana, noted in our last; and Lezia anceps Percivaliana, a strong plant of a very the lovely Cattleya Percivaniana, noted in our ias; and Ledia anceps Percivaliana, a strong plant of a very pleasing variety, in which the blush-white is well shown up by the purple-violet on the lip and tips of the sepals and petals. From Messrs, Sander & Co., St. Albans, came a plant of Odontoglossum Hrubyanum, which may be described as a snow-white, almost unspotted form of O. cirrosum, but with enough dif-ference in the labellum and column to make it distinct from that species. It will when well grown no doubt be a fine thing, but on account of the spike being de-formed and the flowers crippled by opening in bad weather, the committee desired to see it again. new Saccolabium giganteum var. illustre, appears to be a giganteum with violaceum growth, and which Professor Reichenbach describes in another column, also came from the same firm. Messrs. James Collind, also came from the same firm. Messrs, James Veiltch & Sons showed one of the prettiest and most interesting hybrid Orchids that has been seen for a long time in Cypripedium Leeanum (see p. 50), and in Dieffenbachia Jenmanni, a speciesfrom British Guiana, one of the most striking new foliage plants that have come under our notice lately. The leaves are long, linear lanceolate, peagreen in colour, with whitish stripes running from the centre to the margin, and mingled with small blotches of the same character over their surface. A particularity weil-nowered specimen of Odontoglossum roseum came from Mr. G. F. Wilson's garden, and a good form of Sophronitis grandiflora was shown by Mr. Salter, gr. to J. Southgate, Esq. Mr. Todman, gr., Bushey Down, Tooting, sent another of his white-flowered seedling Azaleas; and Messrs, Stuart & Mein, of Kelso, sent racter over their surface. A particularly well-flowered some forced flowers of Spiræa confusa, a species with soft grey green foliage and small white flowers.

The awards made were :-

FIRST-CLASS CERTIFICATES.

Section A. To R. P. Percival, Esq., for Cattleya Percivaliana.
To R. P. Percival, Esq., for Lælia anceps Percivaliana.

To Messrs. James Veitch & Son, for Cypripedium Leeanum x. To Messrs. James Veitch & Son, for Dieffenbachia

Section B.

To Mr. Henry Little, for Cyclamen persicum Crimson

CULTURAL COMMENDATIONS.

Section A.

To W. Brockbank, Esq., for Helleborus niger angus-tifolius, Brockhurst var. To G. F. Wilson, Esq., for Odontroglossum roseum. To Mr. J. Salter, for Sophronitis grandiflora superba.

Section B.

To Mr. H. Herbst, for Lilies of the Valley. To Mr. Mann, for Poinsettia pulcherrima.

FRUIT COMMITTEE.—Present: H. J. Veitch, Esq., in the chair; Messrs. W. Paul, G. T. Miles, G. Goldsmith, C. Ross, J. Willard, J. E. Lane, F. Rutland, G. Bunyard, J. Burnett, A. Howcroft, J. Lee, J. Ellam, R. D. Blackmore, J. C. Mundell, W. Denning, J. Smith. and Dr. Hogg. Several varieties of Apples were exhibited by Mr. Taylor, Osborn's Nursery, Hampton, Mr. R. H. Poynter, Taunton, Mr. K. J. Fernle, Chase Lodge, Mill Hill, and Messrs. T. Perkins & Son, of Northampton—none, however, calling for comment except a handsome seedling in the way of Lane's Prince Albert, shown by the lastnamed firm. It is of good size, well coloured, and of high specific gravity, and will be awarded a Certificate if proved to cook well.

The Meather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON,
FOR THE WEEK ENOING WEDNESDAY, JANUARY 9, 1884.

o Dav.	BARON	METER	3	TEMPERATURE THE AIR.				trica duc fr Glai Tab	grome- il De- tions com isher's les 6th lition.	Wino.	1
MONTH AND DAY.	Mean Reading Reduced to 32° Fahr.	Departure from Average of 18 years.	Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 50 years.	Dew Point.	Degree of Humidity. Sat. = 100	Average Direction.	RAINFALL
Jan.	In.	In.									In.
3	29 80	+0.03	49-5	40.0	9 5	45.4	+ 9.7	45 2	94	s.w.	0 04
4	30.00	+0.24	49.5	45.0	4.5	47.6	11.0	46 4	96	S,	0.00
5	29.76	+0.01	49-5	43.2	6.3	47.1	+ 10.6	45.8	95	S.	0.11
6	29.67	-o. c8	51.0	45.0	6.0	18 o	+ 11.6	43 - 1	85	5. W.	0 00
7	29.81	+0.07	46.5	41.0	5.5	43.6	+ 7.3	4I 4	92 {	N.W. W. S. W	0.05
8	30.01	+0.29	45.z	35.2	9.9	41 5	+ 5.3	39 7	95	W. S. W	0.10
9	30.13	+0.40	50.S	42 5			+10.4		97	w. s. w	
Mean	29.88	+0.14	48.8	41.7	7.1	45.3	9.4	43.6	93	w.s.w	0.30

Jan. 3.—Dull, damp day and night; moon visible at times.

4.—Dull, damp day and night; moon visible occa-

- 4.—Bull, damp day and night; moon visitele occasionally,
 5.—Dull day. Rain from 2.30 P.M. Dark sky at night.
 6.—Windy, slight raio, Sun visible frequently in morning. Dark night. This being the first day night, slight raio. Sun visible frequently in morning. Dark night. This being the first day noce December 21, 1883, on which sunshine has been registered.

- since December 21, 1883, on which sunshine has
 7.--Fine bright moning; overcast afterooon and
 night.
 8.--Quite clear in early morning. Dull wet day and
 oright.
 9.--Fine and mild; gleams of sunshine throughout the
 day. Fire might; mild and pleasant air.

LONDON : Atmospheric Pressure .- During the week ending January 5, the reading of the barometer at the level of the sea iocreased from 30.26 inches at the beginning of the week to 30.50 inches by 9 A.M. ou the 31st, decreased to 29.94 inches by 9 A.M. ou the 31st, decreased to 29.94 inches by 9 A.M. on the 31st decreased to 29.94 inches by 9 A.M. on the 31st decreased to 29.94 inches by 9 A.M. on the 31st decreased to 29.94 inches by 9 A.M. on the 31st decreased to 29.94 inches by 9 A.M. on the 31st decreased to 29.94 inches by 9 A.M. on the 31st decreased to 29.94 inches by 9 A.M. on the 31st decreased to 29.94 inches by 9 A.M. on the 31st decreased to 29.94 inches by 9 A.M. on the 31st decreased to 29.94 inches by 9 A.M. on the 31st decreased to 29.94 inches b the 3d, increased to 30,19 inches by midnight on the 4th, and was 29.87 inches by the end of the week.

44th. and was 29.87 inches by the end of the week.

The mean reading for the week at the level of the sea was 30.18 inches, being 0.27 inch lower than last week, and 0.19 inch above the average of the week.

Temperature. — The highest temperature in the shade in the week was 49°5, on the 3d, 4th, and 5th; the highest reached on January I was 36°1,

The mean of the seven high day temperatures was 42°5.

43°5.
The lowest temperature was 31°, on January I and 2; on the 4th the lowest temperature was 45°.
The mean of the seven low night temperatures was

37°.3.

The greatest range of temperature in one day was and the smallest was 3°, on 11°.5, on January 2; and the smallest was 3°, on December 31. The mean of the seven daily ranges

The mean temperatures were—on December 30, 37.6; on December 31, 36.2; on January 1, 34.7 on the 2d, 38.4; on the 3d, 46.4; on the 4th, 47.6; and on the 5th, 47.1; of these December 31 and January 1 were below by 1° and 32° repectively, the rest being above by 0°.3, 1°.5, 9.7, 11°, and 10°.6 respectively.

The mean temperature was 4t°, being t°.1 higher than last week, and 4°.1 above the average of the

week.

The highest reading of a thermometer with blackened bulb in vacuo placed in the full rays of the sun was \$4°, on the 5th. The mean of the seven readings was 46°.1.

The lowest reading of a thermometer with its bulb hand on weeks and fully exposed to the character of the seven reading was 40°.1.

placed on grass and fully exposed to the sky was 24°.5, on January 2. The mean of the seven readings was

Rain .- Rain fell on six days during the week, to the amount of 0.30 inch.

ENGLAND: Temperature.—During the week ending January 5 the highest temperatures were 55° at Truco, 54°, 7 at Plymouth, and 54° at Bristol; the highest at Brighton was 49°, at Blackheath 49°, 5, and at Nottingham 49°, 9. The general mean was 51°, 2.

The lowest temperatures in the week were 20°, 4 at Wolverhampton, and 30°, 8 at Brighton and Bolton; the lowest temperature at Truco and Plymouth was 35°, and at Preston 34°. The general mean was 32°, 4.

The createst ranges in the week were 20°, 5° at 10°, 5° at 10°

The greatest ranges in the week were 22°,5 at Bristol, 21°.2 at Wolverhampton, 20° at Bolton; the smallest ranges were 17° at Leeds, 17°,1 at Bradford, and 17°,7 at Leicester. The general mean was 18°,8,

The mean of the seven high day temperatures was highest at Truro, 51°.7, at Plymouth 48°.5, at Sunderland 47°.5; and was lowest at Bradford, 42°.4, at Nottingham 42°.5, and at Leeds 43°. The general

at Nottingnam 42: 5, and at Leeus 43. In egeneral mean was 44. 3.

The mean of the seven low night temperatures was highest at Truro, 41.7, at Plymouth 41.5, at Liverpool 39.3; and was lowest at Sheffield, 36.2; at Wolverhampton 36.4, and at Bolton 36.6. The general mean was 38.

The mean daily range of temperature was greatest at Truro and Sunderland, 10°, at Bristol 8°; and was least at Liverpool and Nottingham, 5°.3, and at Bradford 5°.5. The general mean was 6°.3.

ford §°.5. The general mean was 6°.3.

The mean temperature was highest at Truro, 46°.6, at Plymouth 44°.9, at Sunderland 42°.4; and was lowest at Sheffield and Bradford, 39°.6, and at Nottingham 39°.8. The general mean was 41°.4.

Rain.—The largest fall was 1.33 inch at Bolton, 1.28 inch at Sunderland, 1.03 inch at Preston; the smallest falls were 0.26 inch at Cambridge, 0.30 inch at Blackheath, and 0.42 inch at Leicester. The general mean fall was 0.72 inch. Rain fell on every day in the week at Nottingham.

SCOTLAND: Temperature,—During the week ending January 5, the highest temperature was 52°, at Dundee the highest in the week was 47°.4. The general mean was 49°.5.

The lowest temperature in the week was 24°, at Perth; at Leith the lowest temperature was 28°.1.

The general mean was 25°.9.

The mean temperature was highest at Leith, 38°.5; and lowest at Perth, 33°.3. The general mean was

Rain.—The largest fall was 2.14 inches, at Greenock; and the smallest fall was 0.49 inch, at Aberdeen. The general mean fall was 1.06 inch.

JAMES GLAISHER, F.R.S.

Obituary.

WE regret to have to announce the death, on the 21st of last month, of Madame ERNEST BERGMAN, at Ferrières. The deceased lady was in her thirtyfourth year, and was well known to many persons in this country.

Enquiries.

"He that questioneth much shall learn much."-BACON.

British Queen Pea.—I should be much obliged to any reader who will give exact particulars respecting the origin of this Pea. W.

KNIGHT'S DWARF MARROW PEA,—Can any of your readers tell me under what name this Pea lies hidden in the seedsmen's catalogues of the present day? Diss,

Answers to Correspondents.

AMERICAN PAPER: R. L. B. The American Gar-deners' Monthly, published by Ch. H. Marot, 814, Chestnut Street, Philadelphia.

Chestint Street, Philadelphia.

CHOICE EATING APPLES: R. A. Yalland. All land is not equally suitable for Apple cultivation, a medium, well drained loamy soil of considerable depth, overlying rock or gravel, is the best; but almost any soil can be made suitable by drainage, and by the addition of proper composts and manures. Above all, shelter is required for successful orcharding, such as thick plantations of mixed evergreen and deciduous trees, forming wind breaks from N. N. E. and S. W. especially. The site should not be low, for these trees bloom early, and frosts are most damaging in the spring. Plowphing is be had from Fred. Bunyard, 29, Week Street, Maid-

CHRYSANTHEMUM MEG MERRILIES: E. M. You were not the writer whose statement "Wild Rose" questioned.

ERGOT: G. C. J. We believe so, but will get definite information if possible.

information it possible. FENN FRONDS: W. Walters. The fronds sent exhibit appearances consistent with scalding from hot steam thrown off by hot-water pipes that have had water thrown on them; or from cold draughts of air; or from being wetted with very cold water. There are no signs of fungus growth, and the causes are so various that would lead to the same appearances that we are unable to say what has caused the damage.

GRAPES: A Subscriber. With the Muscat you can associate Mrs. Pince's Black Muscat, Madresfield Court, Black Alicante, and Lady Downe's.

MANURE: Orchard. It will be suitable for the Roses and Gooseberries, if trenched into or thoroughly well incorporated with the soil.

MICROSCOPIC PREPARATIONS: H. H. We must really be excused in future from naming badly prepared microscopic specimeso of no special horticultural interest. No. 1 is a Moss in an early stage of development; 2 and 3 are both Jungermannias.

ment; a and a are born jugermannias.

NAMES OF PLANTS: Comon & Reid. Goldfussia anisophylla. — T. W. Barkeria Skinneri. — Morton
Sparke. A yellow form of Odontoglossum pardinum,
so far as we can judge from a solitary flower. — Regrnald Young. Your box was smasshed, and delivered
open, by the postal authorities, and without the Catleya blooms. The Lycaste seems to be only an ordinary Skinneri. The Dendrobe was not recognisable.

NUDIFLORUM: A Constant Reader. It means "desti-tute of leaves." The statement you quote is quite correct. Jasminum mudiflorum always produces flowers while destitute of leaves.

TRYING IT ON: O. P. We do not conceive it to be any part of our duty to advertise the firm in question, nor do we consider the other Berlin seed-growers unable to defend themselves.

CATALOGUES RECEIVED.

B. S. WILLIAMS, Victoria and Paradise Nursery, Upper Holloway, N.—Flower, Vegetable, and Agricultural

Seeds. CHARLES TURNER, Slough—Flower, Vegetable, and

CHARLES TURNER, Slough—Flower, Vegetable, and Farm Seeds, &c.

BARR & SON, King Street, Covent Garden, W.C.—
Choice Seeds for the Flower and Kitchen Garden,
WILLIAM BULL, 536, King's Road, Chelsea—Select
Flower and Vegetable Seeds, &c.
AUSTIN & M'ASLAN, 16, Buchanan Street, Glasgow—
Garden Seeds, Liliums, Gladioli, &c.
KERR & FOTHERINGHAM, Dumfries—Vegetable and
Flower Seeds.

Flower Seeds.
HEINRICH STRAUSS, Ehrenfeld, Germany—Plants and

Seeds.

JOHN K. KING, Coggeshall, Essex—Flower and Vegetable Seeds.

J. & R. THYNE, 60, Buchanan Street, Glasgow—Garden Seeds. Ormiston & Renwick, Melrose—Vegetable and Flower Seeds.

P. J. FERRY, 73, High Street, Banbury—Vegetable and Flower Seeds. JOHN JONES & Co., Oswestry—Wholesale List of Garden and Farm Seeds, E. P. DIXON, 57, Queen Street, Hull—Garden and Farm

Seeds.

WILLIAM PAUL & SON, Waltham Cross, N.—Vege-table, Flower, and Agricultural Seeds.

RICHARD CLEAVER, Bore Street, Lichfield — Vegetable

and Flower Seeds.

LITTLE & BALLANTYNE, Carlisle—Flower and Vege-

LITTLE & BALLANTYNE, Carnisie—Flower and Vege-table Seeds, &c.
WILLIAM CUTBUSH & SON, Highgate, N.—Flower, Vegetable, and Farm Seeds.
W. DRUMMOND & SONS, Sürling—Vegetable and Flower

JOHN LAING & Co., Stanstead Park, Forest Hill, S.E. —Vegetable, Flower, and Farm Seeds, Plants, &c. C. FIDLER, Reading—Seed Potatos. DICKSONS & CO., 1, Waterloo Place, Edinburgh—Vegetable and Flower Seeds.

COMMUNICATIONS RECRIVED.—D. Landreth & Sons.—Totten & Schafer —A. E. R. —J. A.—Daf.—W. Smith & Son.—W. R.—W. Driver.—Dr. W.—A. H. P.—Heath & Son.—H. L. —Chrysanthemum indicum.—G. B.—H. H.—C. G.—W. Br. ckbahs.—J. J. S.—P. B.—J. S. B.—E. B.—G. M.—H. C.—G. H., Leipsig.—G. W.—H. W.—W. J. K.

Markets.

COVENT GARDEN, January 10.

TRADE remains much the same, Best Apples are firm, and Grapes easier. No alteration in Kent Cobs. James Webber, Whotesale Apple Market.

FRUIT.-AVERAGE WHOLESALE PRICES.

Apples, ½-sieve . 1 o - 4 o Cobs, per 1 oo 1 b . 1 o - 2 o Figs, per doren . 1 o - 1 o Grapes, per los lb . 1 o - 4 o Cobs, per 1 oo lb . 1 o - 4 o Cobs, per 1 oo lb . 1 o - 4 o - 5 cobs, per 2 o co

VEGETABLES.—AVERAGE RETAIL PRICES.							
Artichokes, Globe, per daz, 30 - 50 - 1 Grusselm, bush, 40 - 50 - 20 Gards, per bush, 40 - 50 - 50 Gards, 40 - 50 - 50 Gards, 40 - 50 - 50 - 50 Gards, 40 - 50 - 50 - 50 Gards, 40 - 50 - 50 - 50 - 50 - 50 - 50 - 50 -	Herbs, per buoch . 2 0 0 4 Horse Radish, bund . 2 0 0 4 Horse Radish, bund . 2 0 0 6 Horse Radish, bund . 1 0 0 1 Muthrooms, p. bask . 1 0 - 2 0 Mushrooms, p. bask . 1 0 - 2 0 Mushrooms, p. bask . 0 - 2 0 Horse Radishes, per bunch . 0 - 2 Radishes, per bunch . 0 - 4 Radishes, per bund . 0 4 - 0 6 Sakafy, per bund . 6 - 0 Sakafy, per bund . 6 - 0 Sokak, per puncat 1 6 - 0 Sokak, per puncat 1 6 - 0 Sorue, per bund . 0 - 0 Turnips, per bund . 0 - 0 Turnips, per bund . 0 - 0 Turnips, pew, bun . 0 - 0 Turnips, pew, bun . 0 - 0 Turnips, pew, bun . 0 - 0 - 0 Turnips, pew, bun . 0 - 0 - 0 Turnips, pew, bun . 0 - 0 - 0						
90s. to 95s.; Chan	npions, gos. to gos.						

CUT FLOWERS .- AVERAGE WHOLESALE PRICES

s. d. s. d.	s. d. s. d.
Abutilon, 12 bunches 3 o- 6 o	Marguerites, 12 bun. 6 o- 9 o
Arum Lilies, 12 blms. 6 o- 9 o	Mignonette, 12 bua, 6 o- q o
Azalea, white, 12 spr. 1 0- 2 0	Narcissus (Paper-
Bouvardias, per bun. 1 0- 1 6	white) 10-30
Camellias, per doz 3 o- 6 o	Pelargoniums, 12 spr. 1 6- 3 o
Carnations, 12 blms. 1 n- 3 o	- 20nal, 12 sprays n 9- 1 0
Chrysanth., 12 blms. 2 o- 4 o	Poinsettia, 12 blooms 6 0-12 p
- 12 bunches12 0-30 0	Primula, double, bun. 1 o- 1 6
Cyclamen, 12 blooms n 3- 0 6	- single, 12 bun 6 0- 9 0
Epiphyllum, 12 blms. o 6- 1 o	Roses (indnor), doz. 2 o- 6 p
Eucharis, per doz 6 o- 9 o	- coloured, doz 3 p- 0 0
Gardenias, 12 blms 18 0-36 0	Tropæolum, 12 bun. 1 0- 2 n
Heliotropes, 12 sp o 6- 1 o	Tuberoses, per doz., 4 o- 6 o
Hyacinths (Roman),	Tulips, 12 blooms 1 c- 2 0
12 sprays 1 6- 2 0	Violets, 12 bunches 1 0- 1 6
Lapageria, white, 12	- French, per bun. 1 c- 1 6
blooms 3 o- 6 o	- Parme, per buo. 5 c- 7 p
- red, 12 blooms 1 o- 3 a	Wallflower, 12 bun 4 0- 6 0
Lilac, white Fr., bun. 8 o-10 0	White Jasmine, per
Lily-of-Valley,12 spr. 1 6- 3 p	bunch 0 6- 1 0
PLANTS IN POTE _AVER	ACP WHOLECALE PRICES

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.							
s. d. s. d.	s, d, s. d.						
Aralia Sieboldi, doz. 12 n-24 o	Ficus elastica, each 1 6- 7 o						
Arbor-vitæ (golden),	Foliage Plants, vari-						
per dozen 6 o-18 o	ous, each 2 0-10 0						
- (common), dozen 6 o-12 o	Hyacinths, per doz, 9 0-12 0						
Azaleas, each 2 6- 5 0	- Roman, per doz. 18 0-24 n						
Begonias, per doz 6 n-12 n	Lily of the Val., pot 2 c- 3 p						
Bouvardias, doz12 n-18 o	Marguerite Daisy,						
Cyclamen, per doz12 c-30 o	per dozen12 n-18 o						
- Extra size, each 5 0-10 n	Myrtles, per doz 6 o-12 a						
Dracæna term. doz30 n-60 0	Palms in variety,						
- viridis, per doz., 12 0-24 0	each ,. 2 6-21 D						
Epiphyllum, per doz. 18 o- 30 o	Pelargoniums, scar-						
Erica, various, doz. 9 0-24 0	let, per dozen 6 o 12 o						
Euonymus, various,	Poinsettias, per doz, 12 p. 24 o						
per dozen 9 n-18 o	Primula, single, doz. 4 o- 6 o						
Evergreens, in var.,	Solanums, per dozen 8 0-15 0						
per dozen 6 0-24 0	Tulips, per dozen 6 0-12 0						
Ferns, in var., dozen 4 n-18 n							

SEEDS.

LONDON: Jan. 9.—There is now a fair amount of business passing in farm seeds. Foreign red Clover seed remains firm, but inferior parcels of new English, which now offer more abundantly, are cheaper to buy. In white Clover and Alsike values still point upwards. Trefoils meet a quiet sale at tull rates. For Mustard and Raper seed the sale is exceedingly slow. Hemp seed is easier, and Canary seed is neglected and drooping. More money is asked for feeding Linseed. John Sakaw 6: Sons, Seed Merchants, 37, Mark Lane, London, E.C.

CORN.

At Mark Lane on Monday for Wheat the trade was very dull, with prices in some cases rather easier than last week's. Flour was equally dull of sale, and quotations drooping. Barley was firm all round; grinding sorts were 3d, to 6d, dearer on the week, and malting descriptions showed a large rise. Beans and Peas were stationary; in value, with a moderate demand. Flat Maize was rather firmer, and round corn steady. There was no material change in the value of Oats.—On Wednesday the tone of the Wheat trade was depressed, and but little was done to test quotations, which re-Wednesday the tone of the Wheat trade was depressed, and but little was done to test quotations, which remained nominal. Flour was equally dull, with a similar tendency. Barley was firm on the spot, with a moderate inquiry. Beans, Peas, and Maize remained at late values. Oats were a slow sale at unalered rates.—Average prices of corn for the week ending Jan. 5:—Wheat, 395.; Barley, 32s.; Oats, 19s. 3d. For the corresponding period last year:—Wheat, 40s. 7d.; Barley, 32s. 4d.; Oats, 21s.

POTATOS.

The Borough and Spitalfields Markets reports state The Borough and Spitalhelds Markets reports state that good supplies were on offer, and met a quiet demand as follows:—Magnum Bonums, 80s. to 1005.; Regents, 80s.; Champlons, 60s. to 80s. per ton.; and German Reds, 4t. per hag.—The imports into London last week consisted of 30 bags from Hamburgh, 80o Stettin, 3 Amsterdam, 3 acase from Bremen, 9 boxes Ghemleh, and 9 barrels from New York.

Government Stock.—Consols closed on Monday at roth to roth for delivery, and roth to roth for delivery, and roth to roth for delivery, and as on the previous day for the account. Wednesday's closing prices were roch to roth for delivery, and roth to roth for the account. The closing quotations of Thursday were roth to roth for delivery, and roth to roth for the account—all ex div.

Parters"



STERLING OF NOVELTIES

IMPORTANT FACTS.

It is generally admitted that the Vegetable and Floral Novelties introduced of late years by Messrs. CARTER possess sterling qualities to a degree that finds few competitors. J. C. & Co have only to refer to & Co have only to refer to
the splendld introductions,
Stratagem, Telephone, and
Pride of the Market Peas,
Leviathan Beans, Heartwell
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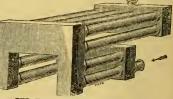
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No. 525.—Vol. XXI. (SERIES,

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NEXT, at half-past 12 o'Clock precisely, about
350 lots of Prize and High-class POULTRY and PIGEONS,
including Birds from some of the principal and most successful
exhibitors and breeders in the kingdom.
On view morring of Sale. Catalogues may be had at the
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Thursday Next.

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6000 LILI splendid con

Also a very fine collection of English-grown LILIES, mongst which will be found extra large bulbs of many varieties. Also FREESIA REFRACTA ALBA.

A choice assortment of HARDY BORDER PLANTS and BULBS.

STANDARD and HALF-STANDARD ROSES, and 40,000 BERLIN CROWNS LILY OF THE YALLLY.
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ADDRESS PERLIN CROWNS LILY OF THE VALLEY, in lots of roce each

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CATILEYA STRAUSSIANA, Rehb. f.

New Natural Hybrid Cattleya, in Flower.

MESSRS. PROTHEROE AND MORRIS

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at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on

A Superb.

RNIDAY NEXT —
A superb specimen of this fine CATTLEYA, in full Flower.
Being a natural hybrid it is impossible to import the plant, and
it will remain a unique specimen un collections.
On view morning of Sale, and Catalogues had.

Friday Next.

Friday Next.

EPIDENDRUM SCEPTRUM.

MESSRS. PROTHEROE AND MORRIS

67 and 68, Cheapside, E.C., on FRIDAY NEXT, at hall-past
1 o 'Clock precisely, by order of Mr. F. Sauder—

A grand and healthy lot of this, one of the very finest
EPIDENDRUM's extant. Its flowers are golden-yellow and
produced in bunches. It is a truly heautiful Orchid, as the
quantity when compare of Sale, and Carthogues had.

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Friday Next.

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A specially Grand Imported Mass, in Flower.

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are instructed by Mr. F. Sander to include in their

SALE on FRIDAY NEXT, a grand imported mass, in flower,

tully described in Catalogue.

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Special Sale of Orchids in Flower. Special Sale of Orchids in Flower.

MESSRS. PROTHEROE AND MORRIS
beg to announce that their NEXT SPECIAL SALE
of ORCHIOS in FLOWER will take place at their Central
Auction Rooms, 67 and 68, Cheapside, E.C., on TUESDAY,
January 29, at half-past 29 c'Olcok precisely. Among the
plants already entered the following may be mentioned:
— LYCASTE SKINNER IA ELBA, very fine plant.
EDUNTOGLOSSUM. CRISPUM DORMANIANUM
(F. C., R. H. S.).
ODONTOGLOSSUM. EDWARDSI, a grand plant, with
over 50 blooms.

ODONTOGLOSSUM EDWARDSI, a graou pnan, who over 50 blooms.

ODONTOGLOSSUM ANDERSONIANUM.
CYPRIPEDIUM VILLOSUM, large specimee, 35 flowers.
ODONTOGLOSSUM, a special hybrid, &c.
Geotlemen desirous of including lots are requested to forward a list not later than MONDAY NEXT, Jaouary 21.

a list not later than MONDAY NEXT, Jacuary 21.

Sood LILIUM AURATUM from Japao.

M.R. J. C. STEVENS will SELL by
AUCTION at his Great Rooms, 38, King Street,
Covent Garden, W.C., on MONDAY NEXT, January 21, at
half past 22 o'Clock precisely. UIM AURATUM just received
from Japan in very fine condution.
900 LILIUM HARRISII, the Easter Lily of Bermuda.
50 LILIUM PHILIPENINES, the bandsome white Lily
from the Philippine Islands.
Home-grown LILIES in great variety.
An importation of the rare and lovely forms of FREESIAS,
illiported roots of MILLA BIFLORA, from Mexico.
Choice named GLOXINIAS, BEGONIAS, ACHINENES,
And various miscellaneous Hardy and Greenhouse BULBS
and PLANTS, &c.
On view morning ol Sale, and Catalogues had.

Wednesday Next.—(Sale No. 6572.)

SPECIMEN CAMELLIAS, Standard and Dwart ROSES, &c.

M. R. J. C. STEVENS will SELL by
AUCTION, 2t his Great Rooms, 35, King Struc,
Covent Gardea, W.C., on WEDNESDAY NEXT, Jaouany 23,
at half-past 2 o'Clock precisely:—
1200 first-class Standard, Half-Standard, Dwarf, and Climbing
ROSES, from well-known English Nurseries.
Dwart-trained and Pyramid FRUIT TREES, RHODODRING RONS, FYERGRERS, CLIMBING PLANTS, &c.
PLANTS, FYERGRERS, CLIMBING PLANTS, &c.
LIAS, from 3 to 7 feet high, well set with bloom-buds, from a
celebrated English grower.
Hardy Herbaccous BORDER PLANTS in great variety.
GLADIOLI, LILLUMS, TIGRIDIAS, and other BULES,
for apring placting.
On view morning of Sale, and Catalogue, and

On view morning of Sale, and Catalogues had.

Thursday Next - (Sale No. 6573) CATTLEYA SPECIES-Received direct.

CALTLEYA SPECIES—Received direct.

M.R. J. C. STEVENS will include in his Street, Covent Garden, W.C., on THURSDAY NEXT, January 24, at half-past 20 Clock precisely:—
A consigoment of CATTLEYA SPECIES in splendid condition, and fine masses, received direct from the Avila Mountains, Carenas, Venezuela.

On view morning of Sale, and Catalogues had

Thursday Next.—(Sale No. 6573.)
3000 LILIUM AURATUM, just received from Jupan in very
fine condition; and 4 cases of ARAUCARIA EXCELSA.

Y.R. J. C. STEVENS will include the above
in his SALE by AUCTION, at his Great Room,
38, King Street, Covent Garden, W.C., on THURSDAY
NEXI, January 24.
On view morning of Sale, and Catalogues had.

Thursday Next.—(Sale No. 6573.)
CONSIGNMENT from NEW JERSEY.
M.R. J. C. STEVENS will include in his
SALE by AUCTION, at his Great Rooms, 38, King
Street, Covent Garden, W.C., on THURSDAY NEXT,
January 24.—
A Consignment of Hands OF CHUPS—at PRINTS CA.

January 24;—
A Consignment of Hardy ORCHIDS and BULBS from New Jersey, comprising 400 CYPRIPEDUM SPECTABILE, 85 C. ACAULE, 45 C. PUBESCENS, 75 LILIUM CANADENSE, 150 Bulbs of OX ALIS YIOLACEA, &c.

On view morning of Sale, and Catalogues had.

Ob view morning of Sale, and Catalogues had.

Thursday Next.—(Sale No. 6521).

JIMPORTED ORCHIDS.

M.R. J. C. STEVENS will SELL by.
COVERT GARGON, W.C., on THURSDAY, INEXT, January 24, at half-past 12 o'Clock precisely, by order of Messrs, Shuttleworth, Carder & Co.,
A fine Importation of CATTLEYA DOWIANA, in splendid condition and uousually fine masses.
BARKERIA SKINNER, PERIANUM, OCRISPUM, O. PESCATORET, O. PHALENDESIS, MASDEVALIA CROSSII, M. HARRYANA, CATTLEYA TRIANÆ Species, from beyond Popayan, &c.
Oview morning of Sale, and Catalogues had.

Thursday Next.—(Sale, No. 65-21).

Thursday Next.—(Sale No. 6573).

On view morning of Sale, and Catalogues had,

Flowering Orchids.

MR. J. C. STEVENS begs to announce that his NEXT SALE of FLOWERING ORCHIDS will take place on WEDNESDAY, February 6. Gealtemen desirous of entering Plants for this Sale will please send particulars of same on later than 'HURSDAY, January 3r. Auction Rooms and Offices, 38, King Street, Covent Garden, W.C.

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Also, if desired, there would be LET with the above a good SHOP in West Exeter Street, Tiverton, admirably suited for a Greengrocet's Business. Apply for particulars to H, J. W. COULSON, Estate Office, Leat Street, Tiverton, Devon.

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THE GARDENERS' ROYAL

RENEVOLENT INSTITUTION.

At a GENERAL MEETING of the MEMBERS of this
Institution, held on the 10th inst., for the Election of Teo Peasioners, the following was the Result of the Ballot, and
Members Resolved that in consequence of a Vacancey having
cocurred in the List of Peasioners since the Voling Papers were
issued, that the Candidate who had the greatest number of
Voces ther the Teo for whom the Election was called, should be
Elected a Pensioner.

CANDIDATES.

Votes.	Name.			Age
1106	JAMES HUTCHESON			78
2243	THOMAS RIDER			8r
1675	CATHERINE WILLIAMS			72
751	WILLIAM BIRKETT			75
1796	ANN DAWSON			65
1206	THOMAS FORSYTH			8r
594	RICHARD HAWKINS			68
1807	ANN HOPKINS			64
1608	ROBERT KENNEDY			84
1520	JAMES WATKINS	::	- ::	57
167	WILLIAM ARCHER		- :: 1	78
1638	TANKE DADEOUS			
		••	•••	55 68
203			- * *	
2004		••	•••	76
293 t				73
302	ROBERT PRYOR	••	**	73
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May be understood when an Expiring Lease leads to such Prices as the following:—

STANDARD RHODODENDRONS, worth 5, 4, 3, and a guineas, are being sold at 315, 6d., 215, and 105, 6d.
BUSH RHODODENDRONS, 8, 7, 6 to 3 feet high, to be sold at 10s. 6d. to 2s. 6d.
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SPIREA FALMATA, fine forcing clumps.
The largest stock in Europe.
HODGIN'S and other HOLLIES, perfect specimens, 7, 6, 5, 4, 3 and 2 feet, from 21r. to 11.
AVENUE TREES, perfect specimens, 12 to 15 feet, at 5t., 21. 6t., and 22. 6t.
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Extra large FRUITING TREES of APPLES, PEARS, CHERRIES, &c., from 3r. 6d. to 1.

THUILA LOBBIL, 3 to 4 feet.

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GREENHOUSE RHODODENDRONS.

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offer, from a very large stock of various sizes, these ornamental and remarkably free-flowering plants, which are as effective as Indian Azaleas for the decoration of Greenhouses and Conservatories:—

ERVAIOTIESS OF HADDINGTON, blush-white, 2s. 6d., 2s. 6d.
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15s., 2st.
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FRAGRANTISSIMA, large fragrant white flowers, 2s. 6d.
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flowers, 2s. 6d. 3s. 6d., 2s.
LAY ALICE FITZWILLIAM, white flowers, 3 to 4 inches
MADDE SCORE OF STATES AND RA, long funnel-shaped tube, pure
white, with public statemens, 2s. 6d., 3c., 6d., FRINCESS ALEXANDRA, long funnel-shaped tube, pure
white, with public stamens, 2s. 6d., 3c., 6d., FRINCESS ALEXANDRA, splendid specimens, bushes, 2s.

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PRINCESS ROYAL, rich rose-coloured funnel-shaped flowers,
produced in the most abundant manner, quite a gem,
2x. 6d., 3x. 6d., 5x., to 10x. 6d.
PRINCESS ROYAL, splendid specimen bushes, 21z. to 63x.]
PRINCESS ROYAL, splendid specimen bushes, 21z. to 63x.]
PRINCES ROYAL, splendid specimen bushes, 21z. to 63x.]
PRINCES ROYAL, 15t., 2x. 10x. 2x. 6d., 2x. 6d., 15t., 2x. 6d., 2x. 6d.,

CLAPTON NURSERY, LONDON, E.

A SCARCE GARDEN PEA. VANGUARD (Nelson).

An Early Wrinkled Pea, with a moderately vigorous habit of growth, 3 feet to 31 feet high, producing, in the greatest profusion, well-filled pods containing extraordinary large Peas of a most delicious Marrow flavour — a quality entirely absent in early kinds.

Price, 5s. per quart. Cash with order. Post-free.

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H. CANNELL & SONS, THE HOME OF FLOWERS, SWANLEY, KENT.

THURSDAY NEXT.—(Sale No. 6573.)

IMPORTED ORCHIDS.

M. R. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, January 24, at half-past 12 o'Clock precisely, by order of Messrs. Shuttleworth, Carder & Co., a fine Importation of CATTLEYA DOWIANA in splendid condition and unusually fine BARKERIA SKINNERI, TRICHOPILIA SUAVIS, ODONTOGLOSSUM SCHLIEPERIANUM, O. CRISPUM, O. PESCATOREI, O. PHALÆNOPSIS, MASDE-VALLIA CROSSII, M. HARRYANA, CATTLEYA TRIANÆ SPECIES from beyond Popayan, &c.

On view morning of Sale, and Catalogues had.

AUCTION ROOMS AND OFFICES, 38, KING STREET COVENT GARDEN, LONDON, W.C.

S Q U E L C H A N D B A R N H A M
Fruit and Flower Salesmen,
Long Market, Covent Garden, London, W.C.,

Are open to RECEIVE CONSIGNMENT'S of GRAPES, TOMATOS, CUCUMBERS, and STRAWBERRIES; also CHOICE FLOWERS, they having a special Trade for the above.

Consigners are assured that they will receive Full Market Property of the control o

ACCOUNT SALES forwarded daily.

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Mitchell's Gooseberry.

WM. MITCHELL having obtained a Stock of this extraordinary variety of GOOSEBERRY, is now prepared to offer, for the first time, Trees and prepared cuttings for present planting. To all Growers, Salesmen, and Buyers of Fruit attending Covent Garden Market, this fine variety is too well known to need description, but to others it may be described as the largest, greatest cropper, and earliest for picking when green. 1-yr. Trees, 25; per 100; Cuttlings, £5 per 1000. Broadlands, Enfield Highway, Middlesex.

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PRUITT REES (74 acres).—

APPLES, FRARS, PLUMS, CHERRIES, FFACHES, NECTARINES, APRICOTS, &c., as Standards, Dwarfs, Pyramids, Bushes, Cordon and Trained Trees in great variety. VINES: excellent canes, 3. cf. to 10. cf. (ORCHARC VINES). ORCHARC VINES are consistent of the Cordon and Trained Trees in great variety. Or the Cordon and Trained Trees in the Cordon and Trained Trees, with directions for Cultivation, Soil, Drainage, Manure, Pruning, Lifting, Cropping, Treatment under Glass; also information as to Synonyms, Quality, Sier, Form, Shin, Colour, Flesh, Flavour, Use, Growth, Datatot, Sealon, Tist, &c., ee by post. Flavour, Use, Growth, Datatot, Sealon, Tist, &c., ee by post.

Gold Medal Begonias. AING'S CHOICE HYBRIDISED SEED. all new and of unequalled quality. Sealed packets, free by post—single, 1x, 2x 6d, and 5x, i double, 2x 6d, 3x 6d, and 5x. TUBERS, mixed seedlings, by Parcels Post, 4t, 6x, 9x, and unwards per dozen. The Trade supplied. JOHN LAING AND CO., Seedsmen, Forest Hill, S.E.

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"EAUNFORTH'S SEEDLING."

"Estimonial from Mr. THOMAS LAXTON, Bedford:—
"Esamforth's Seedling Raspherry has again proved the best
of all Red Raspherries tried at Girtford (14 varieties)."

Prices—Plating Canes, 25, per 100, 45 per dozen; Fruking
Canes, 35t. per 100, 45 per dozen.

EDMUND PHILIP DIXON, The Yorkshire Seed Establishment, Hull.

KELWAY AND SON'S CATALOGUE of Choice Seeds is now ready, and will be forwarded on application.

ILY of the VALLEY.—Crowns for plant-ing in shrubbery borders, woodland walks, &c.—Covent Garden grower clearing ground—7s. 6d. per bushel of about

No crowns.

SEAKALE, exceptionally fine forcing, and best planting.

Price, on application, very cheap.

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COLLINS BROS. AND GABRIEL, 39, Waterloo Road, London, S.E.

WILLIAM FLETCHER has to offer W LARCH, twice transplanted, 2 to 4 feet; HAZEL, 2 to 4 feet; CHESTNUT, Spanish, 2 to 4 feet; MANETTI STOCKS; WOOD'S GARLAND STOCKS; GENERAL JACQUEMINOT (Dwarfs). Prices on application. The Nurseries, Ottersbaw, Chertsey.

A SPARAGUS for Forcing.—Strong crowns, which will produce a quantity of capital beads, 22. per dozen, 127. 6d, per 100. SEAKALE, Lamous forcing roots, 27. 6d, per dozen, 161. per 100. RICHARD SMITH AND CO., Worcester.

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Pt. AND A. MORRISON, The Nurseries, to their extensive and well-grown stock of SCOTCH FIR and LARCH, of all sizes, from 1-yr. seedings to 2 specifies to the second season of the season of th

of Socialand, and tases to the standard of their obood forounds. This is the best guarantee of their obood forounds. This is the best guarantee of their obood for the forest and the forest and A. M. also grow largely PINUS AUSTRIACA, LARICIO and MONTANA, NORWAY SPRUCE, ASH, ELM (Wych), OAK, SYCAMORE, and other FOREST TREES, as also a large Stock of TREES and PLANTS surfable for Hedges, Underwood, and Game cowpication.

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SUTTON'S YELLOW INTERMEDIATE MANGEL, 355.

BERKSHIRE PRIZE YELLOW GLOBE, 35s. per cwt. CHAMPION YELLOW GLOBE, 35s. per cwt. SHARPE'S IMPROVED PURPLE-TOP SWEDE, 20s.

CHANGES IMPROVED PURPLE-TOP SWEDE, acc., per bushel.

SHANROCK FURPLE-TOP SWEDE, acc., per bushel.

HARTLEVS SHORT-TOP SWEDE, acc., per bushel.

DEVONSHIRE REV-STONE TURNIF, 185, per bushel.

DEVONSHIRE REV-STONE TURNIF, 185, per bushel.

LINCOLNSHIRE RED GLOBE, 185, per bushel.

LINCOLNSHIRE RED GLOBE, 185, per bushel.

GREEN-TOP SCOTCH YELLOW, acc., per bushel.

GREEN-TOP SCOTCH YELLOW, acc., per bushel.

BRADFIELD HALL VELLOW, acc., per bushel; a ve y

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APPLY TO A DUCKERING, Seed Grower and Merchant,

EAST BARWHIN, WERBY, Lincolnshire.

PEACH and NECTARINE TREES.-A Apply to Mr. COOPER, F.R.H.S., Calcot Gardens, Reading, Berks.

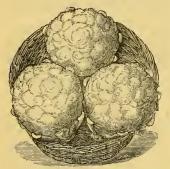
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SEEDS.

JAMES VEITCH & SONS, ROYAL EXOTIC NURSERY, CHELSEA, S.W.,

Have much pleasure in directing attention to the following New and Choice VEGETABLES, which are all of great merit, and can be confidently recommended :-



CAULIFLOWER, Veitch's Extra Early Forcing First-class Certificate Royal Horticultural Society.

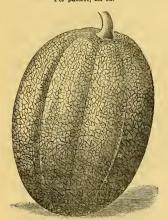
Of dwarf compact habit, with short stems and small leaves; comes into use earlier than any other variety. Highly recommended for forcing or very early use.

Per packet, 2s. 6d.

CAULIFLOWER, Veitch's Autumn Giant. Per ounce, 2s.

NEW CAULIFLOWER, Veitch's Pearl.

This splendid main crop variety has been grown by us for several years, and is the best for general use. The pure white heads are of medium size and of finest quality. Per packet, 2s. 6d.



NEW MELON, The Goodwood.

First-class Certificate Royal Horticultural Society, Aug. 14, 1883. The fruit can be grown to enormous size, Mr. Ruthand having exhibited a fruit weighing 34 lb. 202. It is of handsome form, oval in shape, with a bright orange skin, very evenly netted; flesh thick, very jucy, and of excellent flavour. Per packet, 3s. 6d.

BEAN, Veitch's Improved Longpod.

The earliest and finest of the Longpod section, exceedingly productive, bearing in clusters an abundance of long, well-filted pods. Per quart, 1s.

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A remarkably handsome and distinct variety, emineutly suitable for exhibition, and one of the best for general purposes. Per packet, 1s. 6d.

BORECOLE, Veitch's Dwarf Late Curled. Per ounce, 1s.

NEW BORECOLE, Read's Hearting. First-class Certificate Royal Horticultural Society, 288

This hardy dwarf variety forms a firm compact beart, and stands longer than any other kind before running to seed. Per packet, 1s. 6d.

CELERY, Major Clarke's Fine Solid Red. The best Celery in cultivation. Of medium growth, robust and compact, forming very solid hearts; very crisp, and of excellent flavour. Per packet. 1s.

Per packet, 1s.



CABBAGE LETTUCE, Veitch's Perfect Gem. A most distinct, compact-growing variety, of a rich deep green colour, forming very early a close solid heart, beautifully crisp, juicy, and tender, and of excellent flavour.

LETTUCE, Veitch's Superb White Cos.
A magnificent self-folding variety, growing to an immense ize, of superior quality, very crisp, and fine flavoured. The sest White Cos variety in cultivation.

Per packet, 1s. 6d.

CUCUMBER, Tender and True.
First-class Certificate Royal Horticultural Society, and
awarded First Prize at each of the Spring Shows for three
seasons. A spleadid variety, very symmetrical in shape, and
growing to about ze to 30 inches in length.
Per packet, 1s. 6d.

NEW MELON, Scarlet Premier.

A superb new and distinct scarlet-fleshed Melon, setting very freely, and producing large, handsome, highly coloured, and beautifully netted fruit. The flesh is very solid, thuck, rich, and melting, of exquisite flexavour and delicate aroma. Per packet, 1s. 6d.

NEW TOMATO, Hackwood Park Prolific.

First-class Certificate Royal Horticultural Society, July 4, 483.
An extremely profile ene and early variety, producing huge clusters of handsom first of a large size, which are remarkably smooth eyes from, and of a bright glowing searlet colour. The fiesh is firm and solid, of finest quality, and excellent flavour.

Per packet, 1s. 6d. Per packet, 1s. 6d.

TURNIP, Veitch's Red Globe,
The finest Turnip for garden purposes, very handsome in shape and of fine flavour.
Per ounce, 6d.



NEW BROCCOLI, Veitch's Model.
The best late variety, coming into cutting in May and June.
The heads are of medium giney compact, beautifully white,
and thoroughly protected. It is perfectly hardy, and as a late
sort cannot be surpassed in quality.

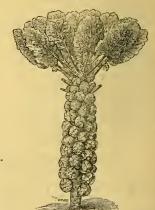
Per packet, 1s. 6d.

BROCCOLI, Veitch's Self-protecting Autumn A most valuable Broccoli for autumn and early winter use. Heads beautifully white, firm and compact, thoroughly protected by the foliage.

Per packet, 1s.

CABBAGE, Ellam's Early Spring. The earliest spring variety, of dwarf, close, compact habit, forming firm solid hearts of excellent quality.

Per packet, 1s.



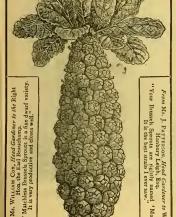
BRUSSELS SPROUTS, Veitch's Exhibition
This grand variety is unequalled for exhibition or for general
use. The stems are entirely covered from top to bottom with
fine large sprouts, which are very firm and solid, remarkably
tender, delicate in flavour, and remain a long time fit for usely Per packet, 1s. 6d.

For full particulars of above and other varieties of Choice VEGETABLE SEEDS see SEED CATALOGUE for 1884, forwarded gratis and

post-free on application. POTATOS .- J. V. & SONS hold large Stocks of all the best kinds for Exhibition and General Purposes.

ROYAL EXOTIC NURSERY, KING'S ROAD, CHELSEA, LONDON, S.W.





THE BEST STRAIN IN CULTIVATION. 6d. and 1s. per packet,

		s.	d.
BEAN (Broad)	Webbs' Kinver Mammoth	1	0 pint
BROCCOLI	Webbs' Perfection 6d. &	1	0 packet
CABBAGE	Webbs' Emperor 6d. &	1	0 ,,
CAULIFLOWER	Webbs' Early Mammoth	1	6 ,,
CELERY	Webbs' Mammoth Red	0	6 ,,
CUCUMBER	Webbs' Perpetual Bearer	1	6 ,.
LETTUCE (Cos)	Webbs' Moostrous	0	6 ,,
LETTUCE (Cos)	Webbs' New Wordsley Gem	1	0 "
LETTUCE (Cabba	age) Webbs' Summerbill	0	6 ,,
MELON	Webbs' Woodfield	1	6 ,,
MELON (New)	Webbs' Pride of Stourbridge	2	6 ,,
ONION	Webbs' Banbury	0	6 "
PEA (Early)	Webbs' Perfection	1	3 quart
PEA (Early)	The Wordsley Wonder	3	6 pint
	Webbs' Stourbridge Marrow	2	6 ,,
PEA (Main Crop)	Webbs' Electric Light	3	0 quart
TURNIP	Webbs' Early Purple-top	0	6 packet

WEBBS' SPRING CATALOGUE, Post-free 1s, Gratts to Customers.

THE QUEEN'S SEEDSMEN,

WORDSLEY, STOURBRIDGE.

NO GARDEN COMPLETE

WITHOUT A LARGE BREADTH

SUTTON'S

ALL HEART

CABBAGE.



HEART CABBACE

last year, we ventured to say that it would become one of the last year, we wentured to say that it would become one or use most popular early dwarf varieties in commerce. We have received aumerous letters testifying to its superiority over all other dwarf Cabbages. The babit is dwarf and compact, with a remarkable absence of outer leaves; in fact, it is absolutely "All Heart." One great meeting of this Cabbage is that it produces firm heads in less time than any other variety.

Per packet 1s., post-free.

"Certainly the finest type of a garden Cabbage I bave ever seen. The stems are so short that no earthing is needed. The beads are pointed, and so close and compact, even to the outer worts. The quality is excellent, and it is exceptionally early. I sowed on May 8, and at this date, September 13, the whole piece is fit for use."—Mr. W. WILDSMITH, Gardener to the Hight Hon. Viscount Eversley.

"A superb and distinct little Cabbage. It grows about 12 inches bigh, and the stems are so short that the heads appear to be ressling on the ground. It is wholly composed of heads of the bighest quality, and it is a perfect diocer-table Cabbage."—Mr. J. Murg. Gardener to C. R. M. Talbot, Esq., M.P., Margam Park.

"I have tried this Cabbage against a number of other dwarf varieties, and it surpasses them all for earliness and dwarf compact habit, with large firm beads of deheate flavour. It is undoubtedly one of the best Cabbages I have ever tried."— Mr. J. Bunkert, Gardener to Mrs. Hope, Depdane.

NEW CUCUMBER, SUTTON'S PURLEY PARK
HERO,—See page 43 of last week's

NEW CELERY. SUTTON'S WHITE GEM. See page 9 of Gardeners' Chronicle, Jan. 5, 1884.

For full particulars of

SUTTON'S NOVELTIES for 1884,

SUTTON'S SPECIAL LIST, Gratis and post-free on application.

THE OUEEN'S SEEDSMEN, READING, !



Gardeners' Chronicle.

SATURDAY, JANUARY 19, 1884.

THE NEW PLANTS OF 1883.

(Concluded from p. 44.)

THOUGH noticed last, the group of plants now to be passed under review is not the least important. It proves to be more limited than usual, but it comprises a few subjects of real value in their respective departments. We refer to the group of

HARDY AND HALF-HARDY PLANTS.

Taking the flowering shrubby subjects first, the most noteworthy which has come under our notice is the Hydrangea rosea, a new Japanese species or variety in the way of H. Hortensia, but a much finer thing, and a superb decorative object. It is of the same bushy habit of growth as H. Hortensia, of which it is probably a variety, since it also has similar soliage, but the heads of flowers are larger, and the colour is a brilliant rose-pink, altogether eclipsing the pale rosy hue of the older and more familiar kind. It comes from Japan, and has been brought into notice by Messrs. Veitch & Sons, to whom a certificate has been awarded for it, both by the Royal Horticultural and the Royal Botanic Societies. To the same firm we are indebted for Leucothoë Davisiæ, a Californian species from the Sierra Nevada, forming a beautiful hardy evergreen shrub, growing 3 to 5 feet in height, and bearing oblong obtuse bright green spioulose-serrate leaves, and erect racemes of small white pendulous pitcher-shaped or ovate flowers, terminal, and from the upper axils forming clusters at the tips of the branches and branchlets; a certificate was awarded to it by the Floral Committee in June last, when it was exhibited nicely in flower, so that it will be a summer bloomer. The plant was named by Torrey in compliment to its discoverer, Miss Davis, who found it near Eureka, Nevada Co.

Amongst the hardy Azaleas some very fine addi-tions have been made known. They are, indeed, English hybridised seedlings, but scarcely come within the group distinguished as florists' flowers, and hence may be included here. Those who know the double yellow Narcissiflora will be aware what a valuable plant this is for forcing, and the same may be expected to hold good of other similar forms of distinct and decided colours. We have, therefore, no hesitation in commending the rubro-plena of Mr. A. Waterer, and the alba-plena of Messrs. Ker & Son, as two of the coming plants for early blooming purposes, and also as good outdoor flowering shrubs for the later spring months. Of the single forms some extraordinarily fine things have been raised at Knapbill. Two of these, already figured in the Florist, are named C. S. Sargent, a magnificent yellow, with orange-yellow blotch; and Henrietta Sargent, one of the finest of the rose-coloured series, with two bright golden blotches on the upper segments. Others, of which portraits will shortly appear, are H. H. Hannewell, a brilliant glowing orange-scarlet, which no painter's pigment can reproduce; and Mrs. Walter Druce, a splendid white, with orange-yellow markings on the upper segments, and a stain of rose colour at the base of the stamens, and on the exterior of the tube. These by no means exhaust the supply, but the rest are as yet unnamed.

A variegated Holly, a variety of Ilex Aquifolium, of distinct character and strikingly handsome, has been brought to one of the Royal Horticultural Society's meetings under the name of laurifolia aureo-marginata; it is a gold-edged variety of the spineless, or almost spineless, group, of which the variety laurifolia is the green type. This plant, which obtained a certificate for Mr. Waterer, has the central portion of the leaves of a dark bronzy-green, with a distinct border of golden-yellow, and is quite an acquisition to the group. Another plant of high merit, and exceedingly rare, if not altogether new, is the Yucca gloriosa variegata of Messrs. Veitch, the leaves of which are decorated with longitudinal bands of yellow tinged with rosy-pink, and forming a conspicuous and effective variegation.

Amongst the deciduous trees and shrubs the first place belongs to Prunus Pissardi, an ornamental deciduous Plum from Persia, having leaves of an intense red colour, as are also the fruits, even in the early stages of their growth. It is not absolutely new, having been figured in 1881 in the Revue Horticole from plants growing in Paris; but it has not yet made its way in England so much as it deserves to do, and as some recent letters in our columns show that it merits (Gardeners' Chronicle, 1883, vol. xx., pp. 444, 472, 504), and as it must do, when more generally The name commemorates the gardener to the Shah of Persia, by whom it was sent to our neighbours across the Channel. Another distinct and interesting tree brought to some of the summer shows is the Acer cratægifolium variegatum, a rather pretty Maple, having the leaves ovate and three-lobed, with acuminate lobes, and variegated with creamy white. This comes from Japan.

HERBACEOUS PLANTS. - This division does not this year give us many additions. The most important probably is the Haplocarpha Leichtlinii, which has been grown in gardens under the name of Gorteria acaulis. It is a stemless South African perennial, with lyrate-pinnatisect leaves, 6 to 12 inches long, bright green above and clothed with white tomentum beneath; the white tomentose scapes, I foot high, bear flower-beads 2½ inches in diameter, having bright yellow-rosy florets stained with purple beneath. It is a showy free-flowering and attractive Composite, not quite hardy, but requiring protection in winter, and not quite new, having passed for a few years under the false name of Gorteria, but its corrected name comes as a novelty, having been only recently assigned to it. Mimulus radicans, from the mountains of New Zealand, is a more decided novelty, and is said to be quite hardy; it has slender branching rooting stems, which creep close to the ground, and bear close-set small obovate obtuse bairy leaves of a bronzy-green, and two-lipped flowers, of which the upper lip is purple and two-lobed, and the lower one three-lobed and white, with a dash of yellow on the palate. Its close-growing carpet-like habit may suggest many decorative uses to which it might be applied. The genus Mimulus has also received some accessions through the aid of the hybridist, the object in the case of these here noted having been to diversify and improve the popular Musk plant. These new varieties were, we believe, raised by Mr. Clapham, and have been brought into notice by Mr. R. Dean; and although perhaps but the stepping-stones to more decided acquisitions, they are in the meantime worth a place amongst dwarf-growing hardy perennials. Two of these improved Musks have appeared, both dwarf and compact in their manner of growth, and both with increased size of flower; the most interesting is the Mimulus moschatus ruber, which has large flowers of a cheerful coppery-red, and may be considered as a fair move towards the acquisition of a scarlet Musk. The foliage is richly musk-scented. The other, M. moschatus grandiflorus, has very large (comparatively) bright yellow flowers, and is altogether distinct from that known as Harrison's Musk.

Amongst the herbaceous perennials of the half-hardy class, to be credited to the past year, are several new hybrid Sarracenias, of great interest, which have been exhibited by Mr. Bull. Two of them have won-firist-class Certificates, namely, Sarracenia Swaniana× and S. Wilsoniana×. The former, raised between S. variolaris and S. purpurea, is a bandsome and well-marked form, with curved funnel-shaped broadly winged pitchers, having a cordate-ovate bilobed lid, which, as well as the inner surface of the tube, is strongly reticulated with crimson veins; it bears most resemblance to purpurea, but the pitchers are more crect.

The latter, Wilsoniana, is bred between purpurea and flava, and is very distinct, the pitchers being quite erect, funnel-shaped, stoutish, constricted below the apex, so that the upper part is campanulate, green, heavily striped with crimson ribs, more or less connected by cross veins, and the lid broadly cordate

reniform, infolded at the sides over the mouth, and strongly marked by dichotomous divaricate ribs, united by smaller veins, the veining all of a deep purple-crimson. Another, S. named Mitchelliana x, a cross between Drummondii rubra and purpurea, is dwarfish and slender in growth, with a particularly refined appearance. The pitchers form a shortish, curved funnel of an olive-green colour, with profuse fine red variegation, the whole surface changing later on to reddish-crimson; the lid is cordate reniform, apiculate, undulated, with a striking network of deep red-crimson. Several other hybrids have been raised, but have not yet been named. They, however, pre-sent very remarkable features, and will add immensely to the interest attaching to a collection of these peculiar half-hardy plants, which have been but little appreciated till within a recent period, when Mr. Stevens and Dr. Moore started their hybridisation. Now we have several beautiful kinds, which have already acquired popularity, and these novelties will assuredly increase their popularity with plant lovers. It is to be noted, too, that in this family, now that their cultivation is better understood, we get magnificent flowers as well as highly ornamental foliage (the pitchers), and therefore there is an inexhaustible fund of interest in the case of the hybrids, since they will in all probability in due time show better still if the flowers increase in diameter, as I expect they will do.

It is very remarkable that the curious wavy lip of Limatodes labrosa should have been replaced by the flat vestita lip, and that these flowers got such a rich universal tinge, when the finest vestita rubro-oculata have but a small red eye, and the colours of Limatodes labrosa are rather light and modest, decidedly by no means dazzling.

This fine thing was kindly sent me by Sir Trevor Lawrence, who has a remarkably fine collection of Calanthe seedlings, quite worthy his Eldorado. H. G. Rehb. f.

PESCATOREA KLABOCHORUM VAR. ORNATISSIMA,

A remarkably fine variety, with very dark mauvepurple tips, and numerous similar spots on the bases of the petals, and a single spot at the base of the odd sepal. It was kindly sent me by Sir Trevor Lawrence. H. G. Rehb, f.

LÆLIA ALBIDA (Bat.) SULPHUREA, nov. var.

A remarkably fine fresh variety, sent me by Messrs. Heath & Son, Exotic Nurseries, Cheltenham. It has very large flowers, with rather narrow sepals. All parts are of the finest sulphur, with some light



Fig. 12.—ROAD-SIDE PLANTED WITH FRUIT TREES—APPLES TO THE LEFT, PEARS TO THE RIGHT. (SEE P. 81.)

novelty and beauty in their inflorescence as well as in their foliar development.

These are but a few of the novelties for which 1883 will be noted in the annals of horticulture, but quite enough to show that there has been no lack of good things. T. Moore.

New Handen Plants.

CALANTHE PORPHYREA, n. hyb.

THIS has a constricted fusiform bulb and a florid hairy peduncle, having the raceme zigzag. The bracts are oblong acute, much shorter than the stalked ovaries. Sepals and petals oblong acute. Lip triclode, side lobes involved, anterior one emarginate, protruded. Spur rising from the suprabasilar part of the column, nearly equal to the stalked ovary. Column hairy inside and outside.

The sepals and petals are of the most exquisite dazzling purple. Lip yellowish at the base, with purple small spots; anterior part fine purple. Spur ochrecoloured.

This is a cross between Limatodes labrosa and Calanthe vestita rubro-oculata, the former being the pollen parent. It is an exquisite thing, and will be mauve hue on each side of the anterior lacinia of the lip. The crests of the lip are orange in front; there are dark purple reticulations at the base of the lip, and dense dark purple lines in front of the column. H. G. Rehb. f.

CHRISTMAS ROSES.

HELLEBORUS NIGER: VARIETIES .- When Curtis commenced his Botanical Magazine in 1790, one of the first plants he selected for illustration was Helleborus niger, the subject of his plate 8. It is an excellent picture, giving all the botanic details, as well as the beautiful appearance of the flowers, and it remains still our best English illustration of the typical form of H. niger. In 1826-7 Robert Sweet published his Hortus Britannicus, or catalogue of plants cultivated in the gardens of Great Britain. To the compilation of this valuable work he was assisted by David Doo. Sweet's Hortus may, therefore, be taken as a very complete list of all garden plants then in cultivation, and no doubt great care was taken to describe the varieties by their proper names, when such notable men joined in the task. Here, then, we find the earliest list of the varieties of Helleborus niger in cultivation, viz. :- 1. H. niger ; 2. H. n. latifolius, broad leaved ; 3. H. n. angustifolius, narrow leaved; the only reference to an illustration being Bot. Mag., pt. 8. The last two of these names appear to have originated on this occasion, and to have been chosen so as to fit the actual specimens before them. What they called latifolius we now call altifolius [which has the right of priority. En.] or maximus; and their augustifolius was probably the greenstalked "true Christmas Rose" of Parkinson and Gerard, the name of which became lost after a few years, to be revived again by Mr. MacNab, wheo Miss Hope's narrow-leaved Hellebore was brought under his notice. Sweet's names are descriptive at any rate, marking well the leaf pecularities of the plants; and it would be easy to make out a pretty long list of leaf names, the variations in leafage being even greater than in the flowers.

Mr. Archer Hind has sent me a number of leaves from seedling plants of H. niger, and they furnish several well-marked varieties. Some have the segments of their pedate leaves narrow, and some broad; some are lanceolate, others obovate; some have the edges entire, others toothed, and with hard, sharp teeth, like miniature Hollies; and others are deeply laciniate. I have also in my garden a series of curions-leaved varieties, raised as seedlings by Mr. H. Brownhill, of Sale, showing all these peculiarities, whereas the flowers vary but little. The colour of the stalks and petioles also varies, as well as the form of the leaf. When first I commenced this inquiry I was under the

to the above conclusion, which had already been arrived at by Mr. Archer Hiod, Mr. Wolley Dod, and probably by others also. The following notes will sum up the conclusions I have arrived at with reference to the varieties of H. niger and their origin:—

1. HELLEBORUS NIGER, the typical form, is the most widely distributed, and as it is annually imported into England by thousands it ought to be plentiful. Messrs. Sander, who import it largely from Austria, tell me that theirs is the ordinary typical form, col-lected in the wild state, and that the leaves vary very much in form. I have received flowers and leaves trom many correspondents, and all have the purple mottled stalks and flowers slightly rose tinted. are several good examples of this in the Kew collection, viz., in J. S. Mill's, Gay's, Bentham's, and Dr. Fendler's herbaria, all of the small, ordinary type, as found wild in the Alps, the Tyrol, and Italy. also growing in Kew Gardens under the name H. niger minor. I suppose the variety major is merely the larger form of this. Of the flowers sent me by Mr. Archer Hind as the typical form there is one which would be large enough to merit this distinc-tion. Some 'nurserymen class an "intermedius,"



FIG. 13.-BUSH-FRUIT GROWING NEAR AMIENS. (SEE P. St.)

impression that the green-stalked characteristic only belonged to our Cheshire variety of H. n. angustifolius. Several others have, however, reached me from various correspondents. Mr. Archer Hind, Mr. Brownhill, and Mr. Geo. Willers, of Cambridge, have all raised green-stalked varieties of marked character. In all cases the flowers are also of a greenish-white. But here again we have no fixed characteristic, as many of the red-stalked Hellebores have nearly as white flowers as those of the green-stalked sorts. The pink stigmas, also, which were considered to be peculiar to H. n. altifolius (Hayne), are also found to be more widely distributed. Mr. F. W. Moore, of Glasnevin, sent me a series of blooms from other forms of H. niger, but of which he does not know the origin, as they have been for some time in the Glasnevin Botanic Gardens, and all of which had the pink styles. Out of some hundred plants of H. n. angustifolius growing at Brockhurst we have also occasionally noticed early blooms which show the pink centres when freshly opened, but which soon become pale and pass into the usual colour. It is thus evident that no botanical characteristic can be assigned solely to one variety, showing clearly that all are closely related, and pass by shades of difference into each other.

By the kindness of many friends I have received in the course of this investigation flowers and leaves from all parts of Great Britain, so that almost every variety must have come under notice, and these have led me which I take to be metely a larger variety of the ordinary niger.

2. H. NIGER MAJOR .- To this class belong our very best Christmas Roses, including also the variety angustifolius, so that we might apply Sweet's names broad and narrow-leaved very fitly to describe the leading divisions. It is to be found figured in our hest botanical works as the niger of Linnœus, the greater size being its only distinction. Plate exi. in Reichenbach's Icones Flora Germanica is a good illustration, and tab. 201 in Jacquio's Flora Austriaca is a most heautifully executed plate, of folio size. both these the name is H. niger (Linne). plate in the former has purple mottled stalks, whilst in Jacquin's illustrations the leaf-stalks are but slightly mottled at the base, and the flower-stalks are shown purely green, thus giving our two varieties. Messrs. Cooling & Son, of Bath, sent me examples of the variety of H. n. major grown in that neighbourhood, and which has great purity of colour and size. The same comes to me from the Royal Botanic Gardens, Edinburgh. These two agree nearly with Reichenbach's figure, and are probably of Austrian origin. Mr. Wolley Dod told me of a very fine form of H. n. major which grew near Hereford, and by the kindness of Mrs. Stanhope, of Byford, I have been furnished with a fine plant and many leaves and flowers. It appears to have been grown in the neighbourhood for a long time, and is

one of the most beautiful Christmas Roses we possess, having fine foliage, large white flowers, with a slightly pink tinge, stouly carried, and in great prolusion. The leaves are intermediate in form between the broad and the narrow varieties, and but for its mottled stalks and slightly pink shade of white, it would come very near indeed to our Cheshire variety. Another good Hellebore grows plentially in Overton parish in Cheshire, in the valley of the Dee. This variety has very large leaves, and smaller flowers than that from Byford, but it is an excellent and very vigorous sort. From Devonshire I have received also excellent examples, and also from Cornwall, all of which may be classed as H. n. major.

3. H. N. ANGUSTIFOLIUS (Sweet) .- Of this there are at least two well-marked varieties. The Wardie Lodge variety is an exceedingly valuable Hellebore, well known to all readers of the Gardeners' Chronicle as almost a fresh discovery of the late Miss Hope's. There is a plate in Hayne (Berlin, 1865), under the oame H. n. altifolius which very nearly represents this flower, having the same kind of root, with purple mottled stalk and petiole, the narrow leaves and the flower being also similar. The pink stigmas, which we now consider the distinguishing feature of altifolius, are wanting, as well as the broad segments in the leaf. I should, therefore, now class Hayne's figure as H. n. major, of the narrow-leaved variety (angustifolius). It has the long petioles and exceedingly narrow leaves which induced Sweet to give the variety that name, as he found the plant in our English gardens. This is a very beautiful Hellebore, and is that to which Mr. MacNab assigned the name angustifolius in 1876, reviving Sweet's nomenclature of 1826. In all probability this variety is of Austrian origin, just as was found to be the case with the other celebrated Scotch variety of altifolius (see Gardeners' Chronicle, November 10, 1883).

The Brockhurst variety differs a good deal from Miss Hope's, although oearly the same in its form of flower and leaf. Of the two it is the finer, having the peculiarly distinctive difference of green stalks and peduncles, with scarcely a trace of purple mottling. I take this also to be a variety of H. n. major. There is a specimen preserved at Kew, in the herbarium Boissier, marked H. niger (Linne), which is extremely like it, and which was found at Lugano. In my former essay on H. o. angustifolius (Gardener's Chronicle, October 27, 1833) I stated that the Irish variety grown by Mrs. Laurenson (and which Mr. Burbidge considered a new sort, to which he proposed to give the Irish name of St. Bridgid's Christmas Rose) was being grown side by side with the Brock-hurst variety for comparison. This trial has resulted in Mr. Burbidge's decision that the two are the

The figure which accompanies this note (fig. 16, p. 85) has been drawn by Mr. W. G. Smith from flowers and leaves taken from each of these trial plants, no difference whatever having been found between them. After seeing examples of almost all the English Christmas Roses, I adhere to my formerly expressed opinion, that this is the most purely beautiful and the best variety of them all. The Rev. H. Tymons has found it in two other Irish gardens, and it appears to be peculiarly suited to the Irish climate, as also it is quite at home in Cheshire.

Mr. Wolley Dod has noticed a very fine variety at Grange-over-Sands, and on obtaining flowers and leaves from thence I find it to be this variety. It also occurs in Worcestershire. This Hellebore appears to have been established for many years in Eoglish gardens. Its deep roots make it most at home in light soils, and it probably obtained a footing in Holland from this peculiarity, and was brought thence to England as far back as the reign of Queen Elizabeth, by the Dutch gardeners who were then employed in English gardens. It does not appear to have thriven in the neighbourhood of London, probably on account of the clay soils, but wherever the conditions were favourable it flourished, and owing to its easy culture it became abundant. Its exquisite blooms, coming just at Christmas time, were eagerly purchased, and for this reason the market gardeners made it a special business to cultivate it. In our neighbourhood it has thus been grown for a very long period. (See Gardeners' Chronicle, November 10, 1883.) This Hellebore, therefore, merits the name of the true Christmas Rose, and I still hold the opinion that it was the variety known to Gerard and Parkinson under

4. II. N. ALTIFOLIUS OR MAXIMUS. - This variety has been so fully described and traced to its original habitat (Gardeners' Chronicle, vol. xx., pp. 527, 686, 762), that I need not dwell turther on it here. It proves to be very widely spread in both Scotland and England, and to have flourished for over forty years in Cornwall, as well as in Devonshire and Aberdeenshire. It is by far the largest and finest of all the varieties of H. niger, and during this season it has worn its roseate hues more frequently than usual. Mr. Tyerman and Mr. Archer Hind find it comes purely white in shady sheltered situations, but wherever exposed to cold winds it loses its pure white colour. I have now on my table a very fine example, with a stall 20 inches long, and bearing two flowers, one of which measures over 5 inches across, being rather larger than the specimen figured in the Gard Chronicle, p. 693, vol. xx. It was grown at Edge Hall, where this grand Hellebore flourishes in a cold clay soil, which is fatal to most others. In nearly all the plants which have been sent to me from English and Scotch gardens, I find the soil adhering to the roots to be a strong clayey loam, as if the plant preferred a strong soil. This is probably the case.

In conclusion, I may say that the culture of all these Hellebores seems to be but poorly understood. I have been surprised to find how few of our nursery-I have been surprised to find how few of our nursery-men know how to grow them really well, and how impossible it seems to be to obtain a really fine plant from any professional gardener. Even in Curtis' time the growing of Hellebores appears to have been a difficulty, for he says that the Helle-borus niger does not thrive near London. On read-ing his cultural directions I think you get a clue to the reason, and probably the same exists still a with gardeners generally. Curtis says, "I'l towes situation moderately moist, and a soil unmanured." Now a moist soil if well drained will be quite favore. Now a moist soil if well drained will be quite favour-able, but the plant certainly requires most liberal treatment. So great a wealth of flower and foliage as a flourishing Christmas Rose has to bear annually, certainly requires a corresponding amount of suitable plant food. In its native habitat, growing in woods, plant tood. In its native habitat, growing in woods, it gets a top-dressing of leaves every autumn, and these decay and feed the plant the following season. Our Cheshire Hellebore farmers give their plants a top-dressing of old sawdust stable-manure every autumn, just as the flower-buds are setting. This autum, just as the flower-buds are setting. This manure is very rich in ammonia, and this seems to be the food the plant requires. Mr. Archer Hind uses soot in the same way, and I believe this material is also rich in ammonia. There are three things to be observed in successfully growing Christmas Roses, viz.:—I. A deep rich soil well drained, but moist; 2. Complete shelter from all cold and drying winds; 3. Liberal top-dressing with suitable manure and leaf-mould each autumn, so as to feed the plant in its bearing season—the manure to be due into the ground bearing season—the manure to be dug into the ground lightly in spring. Perhaps some one acquainted with the management of H. n. altifolius will tell us if its requirements are similar. Wm. Brockbank, Brockhurst, Didsbury, Jan. 5.

Sr. Brigid's Christmas Rose (Helleborus NIGER VAR.).—Quite a protracted controversy has been going on for some time in the London gardening journals with regard to the Christmas Rose (Helle-borus niger), its varieties and their identification. This we do not pretend or presume to go into; but This we do not pretend or presume to go into; but we have no hesitation in pronouncing an opinion as to what we regard the peculiar aspect and peerless beauty of that grand variety which, in compliment to the enthusiastic florist in whose garden at Howth he first saw it, and was so impressed with its merits and distinctness that Mr. Burbidge suggested it deserved a name, and should be known in future as "St. Brigid's Christmas Rose." Leaving this matter others to discuss and settle, what we have now to do it to recommend any who care to have at Christmas. Brigia's Christinas Rose.

The acting in the control of the contro boder and dividing with his hands the curtain of greenery which completely concealed them, and at the same time effectually prevented their defilement from rain or otherwise, a revelation of floral beauty took place which made one stare and stop long to took place which made one stare and stop long to admire. This revelation took the shape of a nest of flowers of spotless white, numbering some dozens, and individually measuring more than 2 inches across. The way in which this variety so effectually conceals its nestlings from sight and preserves them from deflement is not among the least of its recommendations. Irish Farmers' Gazette.

ORCHID CULTIVATION FOR AMATEURS,-III.

In my last I alluded to "slow firing" as only being practicable when boiler-power and piping are amply sufficient to produce under pressure a much higher temperature than that actually required. Moderate fires and abundant moisture on floors, bare wall surfaces, and staging, give us the "genial" temperatures grateful to Orchids as to all other growing vegetation. An Orchid-house in which plants are growing should smell like a flowery meadow during that sudden burst of sunshine which sometimes comes after a summer shower. There must be cleanliness everywhere-floors, walls, pots, and staging alike. No dust in odd corners, no cobwebs, no dry rubbish under the stages and near the pipes, where wood-lice and cockroaches may breed and revel to their heart's delight. This they assuredly will do, if odd corners and empty pots or crocks lie out of sight; and if so, then will come your reward! You may grow your plants fairly well, but good-bye to the plump, succulent flower-spike almost as soon as it peers from its sheath, and the fresh green root tips of Aerides, Vandas, and other similar plants will become the natural prey of these "unbidden guests," every one as hungry as a jungle

If literary "asides" are permissible, I should like to observe that the enthusiastic amateur is just a little impatient; he likes "bone," and even now is quite anxious for me to "get on to the potting and watering chapters," all of which, however, shall come in due course. I now want to remind the E. A. (enthusiastic amateur) of what I have already said, and to add that if he will express his own particular desire for information to the Editor, I shall do my

best to oblige

r. In my first paper I said that specially built Orchid-houses, however convenient, were not absolutely essential to good Orchid culture.

2. That all Orchid cultivators must continually exercise their powers of observance, and have some sympathy with the plants they wish to grow well.

3. That although some Orchids require a high temperature (=60° F. minimum) to grow them well; and although others will grow equally well under "cool treatment" (= 40° minimum), yet that by far the greatest number of all the Orchids now in cultivation may be grown in a light, airy house (preferably a span-roof not over 9 feet high) in which a "medium temperature" is maintained (=50° F. minimum).

4. It will now plainly appear that all known Orchids may be successfully grown in one or other of these three temperatures, and that amateurs who wish for a general representative collection of the best, i.e., most floriferous and showy species, may grow such a collection in almost any kind of low house where a minimum

temperature of 50° can be ensured.

Now, if we go into almost any one of the hundreds of private places, or to many of the nurseries where Orchids are grown, what do we find? Cattleyas and Lælias from Brazil, Odontoglossums from Mexico and the Western Andes. Angræcums from Madagascar and the West Coast, Dendrobiums from the plains of Burmah, as also from the Khasia Hills, from Ceylon, and Australia-Vandas from Java and Borneo, growing along with those from India, Lycastes from Guatemala, Coelogynes from Nepaul, and Cypripediums from east and west alike. Here you may find evergreen and deciduous Calanthes, and so also Coologynes evergreen and deciduous, Pleiones, all in the same house and side by side. In a word, a little thought about elevations and native habitats in an average well-stocked Orchid-house will reveal some curious and highly interesting facts. Here, in the space of a few score feet (superficial), you have plants from nearly all tropical and intertropical lands, from plain and mountain alike, from sea level to a height of at least 7000 or 8000 feet. shall not draw any moral, if such be wanted it will be found in my first paper, on which I hope this third one has thrown a little additional light.

What I now do want to say, however, is a little more anent temperatures-I mean maximum temperatures. Now, my advice is, do not let maximum temperature trouble you. If a little thin scrim or linen canvas shading is over the glass no sunheat in the British islands will give your temperate Orchids too high a maximum temperature during the summer months. Note well that I am not now alluding in any way to "cool Orchids" of the Odontoglossum and Masdevallia types: for these, indeed, a maximum of over 65° is absolutely injurious, far more so than a low minimum, provided such minimum is above the freezing line. As a matter of fact, I have seen hoar-frost or rime on the sphagnum surfacing of Odontoglossum Alexandræ, O. Rossi majus, some Masdevallias, and of Disa, and although the plants survived the freezing it was not evident that they were improved thereby. I said above the freezing line, because I do not believe that even native plants, hardy in our climate (say a Thistle or a Dandelion), are benefited by actual frost.

For "cool Orchids" 40° to 45° is a safe minimum, and 65° a safe maximum, and for the rank and file or "temperate-house" collection take 50° as a minimum perfectly sale and sufficient, and with free ventilation do not mind how high sun-heat raises your maximum.

NOTES ON VEGETABLES.

A NEW CELERY: THE WHITE PLUME,-If I mistake not, this will open an entirely new phase in Celery culture. It sported in the vicinity of Newark, N.J., some three years ago, from what is known as the half dwarf variety, showing a variegation of creamy-white, mainly confined, however, to the centre stalk and leaves of the plant, looking as if Nature were meeting Art half way; for as we know in all other Celeries, this whitening of the centre, so as to make it fit to eat, is only obtained by the slow and troublesome process of banking or earthing up, while in the White Plume Celery no work is necessary other than hoeiog or ploughing sufficient earth to the rows, so as to straighten it. Another advantage in this new variety is that not only the stalks are white and fit for use, but the leaves also, giving it somewhat the appearance of a bunch of white feathers, and hence the name given to it of White Plume. This ornamental feature will be of great value, as it is well known that Celery at our best hotels is nearly as much valued for an ornament for the table as for use, and in this we have the rare combination of these qualities. only one drawback to this valuable new Celery. natural tendency to white prevents it keeping late into winter, and it usually would not be safe to keep it later than the middle or end of January in such sections of the country where it has to be preserved by putting it away in the trenches. But as the greatest quantity of Celery is generally used in early winter and during the holidays for this purpose no other variety is at all so valuable as White Plume, and when it is known that at least three-fourths of the labour saved in growing it, it may well be believed what a boon it will be to all cultivators of this vegetable. To the greater number of amateurs heretofore the great labour entailed in growing Celery has prevented the attempt, but when it is known that it can be now grown as easily as Cabbage or Lettuce, there is but little doubt the area of Celery culture will be greatly extended. Peter Henderson, New York City, in American "Gardeners' Monthly,"

PARSLEY .- This is far better sown in beds of about 4 feet in breadth, instead of in lines round the quarters, for in the latter way it forms capital hiding places for slugs, and is as bad in some gardens as Box edging for harbouring these pests, and with less reason for its existence in such parts of the garden. If put in the bed form it can be easily covered with frames or even hoops, and can be matted over at night, and in the day, time, too, in the event of hard weather. If it can be so managed that the alleys can be thrown out to the depth of 18 inches or more, and warm manure be put into the trenches, a mild warmth could be maintained sufficient to cause the plants to grow slowly all through the cold months, and all the better if they have frame protection, with plentry of air in mild weather.

ENDIVE BLANCHING .- This is found to be best blanched, not by tying it up, as is usually done, but by placing a piece of heavy slate or tile over it, and by pressing it down slightly. In doing this a fringe of the tips of the longest leaves must be left projecting beyond the edge of the tile. The reason this is to afford the plant some means of existence till the blanching is completed. The tile is better than a pot or flower-saucer, for while it perfectly excludes the light it confines no damp air about the plant to cause decay, and at the same time the plant is safe from lrost and rain, which is not the case with tied plants; in fact, these latter are really traps to catch every drop of rain or dew that falls. The smaller sorts of Endive, when they are blanched with a piece of material only a trifle less in diameter than themselves, when pressed flat, have a very appetising look with the slight fringe of crisped green round the creamy white centre.

EARLY FRAME CARROTS.—One of the best varieties to follow the early French Horn so as to form a succession is the Early Nantes. The form of the latter will be preferred by many, as the tapering and almost uselessly small tapering end is missing from it, the root being of a pretty cylindrical form, scarcely tapering at all. It can be sown on the same day as the French Horn, and will come into use about ten or twelve days later.

FRAME RADISHES.-These are very often spoiled by the young men sowing them too thickly, broadcast-which was the common old-fashioned mode of doing it oadly-or in drills, as is the general way now; either the one or the other plan is bad in the limited space of a frame, for the want of air and light for each individual plant will be materially lessened by this reckless thick sowing, and the formation of an edible root be greatly rendered abortive. It is a far better practice to take two seeds between the finger and thumb and press them slightly into the surface of the soil, that should have been previously made tolerably firm. The seeds are best put in lines running from the back to the front of the frame, and should be distant from each other about 4 inches each way. Merely drawing the soil over the bed with the back of a rake or with a smooth lath will cover them sufficiently. M.

ECONOMIC PLANTS IN COORG.

IN a very interesting report on the past season in Coorg, which is dated Mercara, July 25 last, and which was read at a recent meeting of the Agri-Horticultural Society of Madras, some facts are recorded on the vegetation of the district.

COFFEE.—After noticing the failure of the Coffee crop in 1882, the writer says:—"The flowering season of the Coffee trees is always a critical event, and anxiety, mixed with hope and fear, pre-dominates till the verdict is passed, 'The blossom has well set.' The normal condition of a good blossom appears to be early showers in March to invigorate the flow of sap in the trees, and to form well developed flower-buds; during the ensuing blossom, which lasts but two or three days, sunshine after a foggy, steamy morning, and a few light showers soon after the blossom has passed away. But sometimes the rain falls too early, and brings out a January or February blossom, which may set well, provided the succeeding months are not too dry. On the Mercara plateau and the Sampaji valley rain generally keeps off, and a late blossom is the rule, often exposed to heavy showers, and the question arises as to how far these affect an efficient fructification. Some planters say in such a case the pollen has all been washed off, and there is no crop to be expected; others prognosticate failure from stunted flowers, where for want of sufficient rain the petals of the corolla are small, and of a yellowish colour. Most planters naturally expect from a perfect flower the best results, and yet I have heard a practical and most successful planter utter the paradoxical dictum, 'The finest blossom, the worst crop. How are these adverse opinions to be reconciled? Perhaps by laying not too much stress on the appearance of the blossom, but by taking into principal consideration the natural condition of the trees as affected by cultivation apart from the weather. For my own satisfaction I bave ascertained that in a well developed flower-bud fructification may take place in the state of æstivation, or just before expansion into the full blown flower. The experiment is easily made by removing the stamens just before the flower-bud opens and marking the bud for after observation," The rainfall of 1882 was 83 inches, and for the average of the previous five years and the consequent vigour of the trees should have shaken off the borer pest, but it maintained its destructive sway with the usual severity. writer says he has observed whenever dense shade of the right kind (plants of species of Ficus and Cedrela) have long been established on a highly cultivated estate the damage from borer has been least.

CINCHONA.—The next important article of culture in Coorg is Cinchona, and all the best or newest varie-

ties are eagerly sought after by planters. "It is strange," the writer of the report says, "that an industry so liberally undertaken by; the Madras Government and so profitably worked and retained when successful, should have taken so long in gaining ground in Coore."

CARDAMONS.—The systematic cultivation of these fruits in suitable localities has fair prospects of success, and men of pluck and energy are setting to work to redeem lost fortune. Mr. Graham Anderson's example of success in Cardamon cultivation in the Numzuabad district is highly encouraging, and with the established fame of the Coorg or Malabar Cardamons in the home market, even a moderate crop will pay, and the prospects of the presnte year are favourable.

RUBBER cultivation is still in its infancy, but Ceara trees (Manibot Glaziovi) are already bearing fruit in South Coorg. Of the Silky Oak of Australia (Grevillea robusta), introduced in 1876, one of the trees, nearly 50 feet high, blossomed for the first time at the end of May, but it was feared that the mousoon would interfere with the ripening of the seed. The Oil Palm (Elais guiocensis), and the Raia tree (Pithecolobum Saman), are in a flourishing condition, but a nursery of the former proved a failure.

THE AMARYLLIS.

(Concluded from p. 59.)

SPEAKING generally, perhaps those plants which have not been "sat upon" "by a special society have given, I think, the most charming varieties. What has the Auricula Society done for this plant? I saw some exhibitions of Auriculas, and I was always struck with the idea that this plant was cramped within certain artificial rules by prizes and encouragement of certain restricted characters. I am not aware whether a Fuchsia Society is in existence, but judging from the many charming varieties of this graceful plant I should say not. Now that the Amaryllis is becoming popular, it is hoped that its cultivation may not be cramped by hard and fast rules, such as "so many inches of length and breadth of petal;" "the funnel is to be extinguished," &c. Every point encouraged should have some 'good reason, and not be dependent on the mere fancy of an iodividual. I should say, for instance, as to

Form. - The flower should be so expanded as to show as much of each petal as possible without ceasing to form a continuous whorl-that is, the petals should not cease to overlap somewhat, in order that the maximum of display should be given to the detail of each petal. Then, with the above conditions, the broader and longer the petals are the more of the flower there will be to see and admire. It is doubtful, however, whether a plate-shaped Amaryllis would be as beautiful as a Convolvulus-shaped one, other things being equal. I would not say that the Lilium candidum is more levely than the L. auratum, but that both are very beautiful. One of my hybrids, which I named Carina, has a narrow tube, and a limb only 4 inches across, but looking at it from the front it is a little It 'is symmetrical all round; the colour is a shade lighter than Turkey-red, and it displays in the centre a perfect white star, with all its points and rays. In this case the tube is not seen at all from the front, as it is of a greenish-white, and merges into the star. Speaking generally, and with more reference to the Amaryllis in a wild state, I should say the narrower the tube the less of beauty is there in it to display, and that the wider and more expanded the tube the finer its interior is. In the former the tube is out of the race, and the attraction to insects is made by the contrast between the colouring of the throat and the limb. In the latter the tube also enters into competition with the limb and throat. and takes on brilliant colouring and feathering to invite the attention of insects.

Size.—As a rule large flowers, ceeteris paribus, are more striking to the mind than small ones, provided the eye can take in the whole flower at one view.

Substance.—Flowers with substantial petals are very desirable. They last longer, look more self-supporting, and stand wind and dryness of atmosphere better than wafery petals.

Colour.—This depends a great deal on idiosyncracy, and may range from pure white to the intensest erimson, scarlet, carmine, &c., with all their combinations and variegations. For my part I would prefer an intense Pomegranate-red, or the colour of a blood-

red French Poppy, such as would "mesmerise" me and make me look at it almost for ever. Others might prefer other colours.

The smoothness of the petals is a fine thing, but this, with prettily crisped edges, makes a most charming combination. The straightness, curvature, pointedness, or roundness of the petals gives additional character to a fine flower. Sometimes a little twist to the outer or to all the petals, as I have seen, gives piquancy to the outline. I would here remark that some varieties which have not overlapping petals might nevertheless possess an incomparable beauty, Such, in my opinion, is Amaryllis formosissima. If its petals could be made to overlap, like those of an ordinary Amaryllis, it would hardly continue to be called the most charming Amaryllis.

A word about naming varieties of cultivated plants. There is an admitted physiological fact regarding the limit of our memory. This varies in every individual, but I think there is no doubt that, however clastic the memory may be, it is not infinite. Therefore considering the many names civilised man has to remember, not only in one language, but in many, one should be considerate, and give as short a name as is possible. It would appear that the crossing of plants so not the increase, and therefore the varieties requiring names may be infinite. It seems therefore a needless burden and worry to the mind to have to remember a long name, when a short one would do as well. Should be justified, for instance, in calling a plant Amaryllis Vicomtesse Louise de Montmorency pulcherrima when Sappho would do? The former requires the aid of a dictionary to remember it, while the latter can be dealt with in prioting, writing, and talking, with scarcely an effort. In this case a society might exercise a beneficial influence and refuse certificates to plants which have unspeakably long for inappropriatel names. I have some records of crossing of my Amaryllis which may be interesting to students of the Darwioian theory, but these I must leave for some future occasion. In the meantime, if hybridisers would publish now and again records of their work, with their experience of the best way of giving effect to the action of the pollen on the pistil, they might do very useful and interesting service. E. Benavia, M.D., Surgeon-Major, Etawah.

FRUIT NOTES.

FRUIT GROWING .- Having considerable practical experience in fruit growing, I am glad to endorse all that Mr. Gladstone has said on this subject. If it were not that enormous quantities of red and black Currants, also Gooseberries (green and red) are sent to this country, the price of these home-grown fruits would be so high that jam-though sugar is so cheap would be manufactured only at prices prohibitory to a large consumption of the article. Fourteen years ago io Scotland I planted 120 acres with Strawberries, Raspberries, red and black Currants, and Gooseberries, the result of my experience being that there the climate had much to do with the success or nonsuccess of the undertaking. In Aberdeeo, as Mr. Gladstone says, the climate is the most ungenial in these isles, yet that district is the home of the Strawberry, and the fruit grown there has an acidity of flavour and a firmness unknown to those grown Partly from the foregoing reason I near London. found this fruit paid better than any of the other kinds; red Currants and Raspberries coming next. Black Currants and Gooseberries I found to be so uncertain that I discontinued them. The failure of the Gooseberry crop arises from the frequent frosts in May, when the flower is forming or the fruit begins to swell, reducing the crop in such years to one ton as compared with 20 tons in a good The success of a fruit garden depends on its not being too large, so that the fruit can be pulled when ripe, a sheltered situation, and plenty of labour at hand. The farmers within 50 miles radius of London would find Strawberries, Raspberries, and red Currants more profitable crops than grain or roots; but three years ago I brought the matter before them prominently without success. There is one point which I would desire to refer to-that though the population when Mr. Gladstone was young consumed only 15 lb, of sugar per head as compared with 65 lb. at the present day, that does not necessarily mean or show that the population use four times more sugar than in times when it was so dear. The great bulk of this increase is accounted for by the enormous export of confections, jams, and marmalade to foreign countries, where, notwithstanding there are duties levied on them of from ro to 35 per cent., these English preparations more than hold their own. As

one of some experience I would say that the quantity of jams and marmalade exported annually exceeds 12,000,000 lb. weight, about three-fourths of which consists of sugar. "Al" in the "Daily News."

EFFECTS OF GRAFTING. — What may be called physiological differences between plants demand on the part of the cultivator at least as much attention as those which are more obvious at first sight. Thus "Allen's Everlasting" Apple, a seedling from Sturmer Pippin, and so like it that it is difficult to distinguish it, will nevertheless grow on stocks whereon the parent plant refuses to live.

GOLDEN SPIRE APPLE may be recommended, not only for its shapely pyramidal fruit, but also as an ornamental tree for shrubberies. It seems likely to supplant Manx Codlin in some places.

The Poultry Yard.

DUCKS.—I have just been reading "J. A. C.'s" experiences, in the Gardeners' Chronicle of last week, on poultry keeping, and will send you mine as to ducks. I have a mill pond at Valebridge, on the west side of the Brighton line, 2 miles north of the Burgess Hill Station, and a garden, osicr beds, and the mill stream, and small piece of water in connection with it on the east side. I keep eight brood ducks and three drakes with a trace of wild in them, varying the breed from time to time by an exhange of drakes. There is no yard or artificial shelter of any kind for them, but there is a protection in a duck island with Rhododendrons and other plants and shrubs, and in a shrubbery at the foot of the garden, as well as in the osier beds. The young ducks are never shut up to fatten, but all are fed by my gardener and his wife with whole Maize, and thus the young ones are made fit for table. They do everything for themselves, except that, when they are first hatched, the gardener's wife puts the mother and the young ones under a coop for about a fortnight, especially if it is cold, and gives the little ones some ground Oats. They then go back to the water, and there they remain until they are killed. My average quantity for the table is 100; one year it was 120; last year ninety-two, owing to the late cold weather.

What the value of them is per couple I cannot tell, as not one of them was ever sold, but my friends and my poulterer, who sometimes trusses them, say they are excellent ducks, and speaking from my own table I can certainly say it is so.

I have swans in the millpond, and the old birds come up in the early spring to the duck island and build their nest, which my gardener feoces off with wire netting, so as not to interfere with the sitting ducks, and they all live as a happy family until the cygnets are hatched, and then the swan tribe is remitted to the millpond.

I fattened two of the cygnets in a small stew close to the duck island at the end of 1883 in the same way, and one on my own table was pronounced bymyfriends to be most tender and beautiful eating. The other I sent to a friend, an M.P. in a higher grade of the legal profession than myself, and he and his friends gave the same verdict as to the cygnet, and he sent me a most beautiful haunch of home-fed mutton to boot. I scarcely ever lose a young duck by rats or other natural enemies. There used to be some of the common rats about, and plenty of water-rats, but the latter are in oo way carnivorous; and I have a wonderful cat, which will take to the water like a dog, and sometimes bring up a couple of rats in a day to the gardener's cottage. Somers Clarke, 57, Regency Square, Brighton.

PTERIS UMBROSA.—For cool conservatory decoration this Australian Fern is well worth growing, When planted out it forms fine masses of bright glossy green fronds, sometimes nearly a yard in height. The strong erect bright reddish-brown stipes are from 18 inches to 2 feet in height; the frond measures from 12 to 24 inches in length by from 6 to 12 inches in breadth. P. umbrosa is a near ally of the widely distributed P. cretica, but is altogether a larger plant. Like it the fronds are pinnate, the lower pinnæ being themselves pinnate. Some years ago a plant of P. umbrosa kept alive in a sheltered position in the open air for a couple of winters. As seen planted out in the borders in the Temperate-house at Kew it forms a very handsome object.



SEQUOIA SEMPERVIRENS.—It may be interesting to your readers to know that io noe of the gardens of Messrs, Chas. Huber & Co., Hyères, there is a tree of Sequoia sempervirens, planted forty years ago by Mr. Chas. Huber, which has now attained the height of 18 metres (more than 54 feet), and in girth 2½ metres (7½ feet). Eighteen years ago it was the same height as now, but it has gained in girth 1½ foot; the diameter of breadth of foliage is 8 metres 10 centimetres (24 feet 4 inches or more). On the same piece of ground there are some extaordinary specimens of Abies Piosapo and Encalyptus globulus; the latter, which is the largest in Hyères, is thirty-five years old. H. Renton Min (of Stuart & Mein, Kelso), 17, Boulevard National, Hyères.

TSUGA SIEBOLDI. — In this the typical species of a genus not numerically large, we have a beautiful tree for the lawn or pleasure ground. Possibly it may be better recognised in gardens under the name Abies Tsuga, just as T. canadensis and T. Albertiana are. The graceful pendulous habit of the two latter

trees may be seen by the margin of water both in the arboretum and other parts of the gardens at Kew.

Golden and other Catalpas, — Mr. Culver-well's experience with the golden variety of Catalpas syringiflora will be found to tally with that of most persons who have attempted the culture of it or other varieties in the less warm parts of this country. There is not a handsomer tree, nor one that grows freet, or which suffers less from wet soil, for it will grow with its roots in water; but it is necessary to its well-being that the wood should become well ripened. When that is not the case slight frosts will cause injury to it, but when the growth is thoroughly ripe it will stand 20° below zero without injury. The warmest spots in the garden are the proper places for it; it should not be planted at all in clayey soils, and it should have the benefit of the fullest exposure to suoshine. Mr.

SCIADOPITYS VERTICILLATA, — M. Carrière, in a recent number of the Revue Horticole, figures a proliferous cone of this plant produced in the nursery of M. Moser, at Versailles, similar to that figured in Veitch's Manual of Conifers, reproduced in our columns, vol. xviia, p. 112. The plant also fruited at Kew this season, and we believe has fruited in some of the nurseries, as at Combe Wood. M. Carrière also figures some curious branched leaves of



FIG. 14.—PACKING PEACHES POR MARKET. (SEE P. 81.)

are well known, and sometimes designated by gardeners as weeping Spruces. The species under notice shares this character more or less according to size, but is apparently of slower growth and smaller dimensions. The most distinctive feature moreover, is its dense and leafy branchlets, which almost or completely hide the stem. These leaves are linear and emarginate, of a deep glossy green above, with two broad silvery lines beneath, arranged somewhat distichously, but really in many rows of unequal sizes (the smaller ooes being on the upper side). Several fine specimens in the Kew arboretum are conspicuous for their dense habit as stated, and the lively green foliage.

ALNUS CORDIFOLIA, — Deciduous trees are not without interest even in winter, but on the other hand, especially when old and harmonising with their surroundings, seem to convey an impression of beauty or characteristic individuality that is often less recognisable when in full leafage. This species of Alder suits our climate well, and rapidly attains a considerable height, preserving at the same time a beautifully pyramidal form, well furnished with slender spreading or ascending branches. The heart-shaped leaves are dark green, deusely clothing the tree in summer, and renders it even more effective and desirable for the margins of ornamental water than the common A. glutinosa. Even now the trees are attractive by the numerous young cylindrical male catkins, and the oval

this plant, which is of very great interest, but planters in this country would be glad to see it grow faster.

The Apiany.

THE DURATION OF LIFE IN HONEY-BEES.—
Will you kindly tell me what is the average length of life of a honey-bee? C. M. (Shuckard, in his British Bees, states that "Humble-bees are reputed to have a longer life than of one year, and hive-bees are said to survive several years—a duration of existence inconsistent with analogy, and which has been repeatedly and stroogly denied." Hunter, in A Manual of Beekephee is determined by the amount of work it does, and the introduction of Ligorian queens at various seasons enables us to determine this question with almost certainty. After the introduction of a fertile Ligurian queen to a colony of black workers in May, if we examine the hive two months subsequently we shalf find very few black bees remain, they having died and been replaced with Ligurians; and as probably at the time the strange queen commenced her reign some eggs or young larves of her predecessor remained, we may conclude that six weeks is the limit of time a worker-bee will live in summer. Should the new queen be introduced in October, not until April foling will the same state of affairs be found; it is thus evident that the quietude and rest of winter prolongs the bee's life fourfold." ED.]

Notices of Books.

Traité de la Culture Fruitière Commerciale et Bourgeoise, Par Charles Baltet, Paris : Masson. ("Fruit Growing for Market and for Private Consumption," &c.)

There are many reasons just now why this book should receive respectful consideration. In the first place, in view of the unremunerative nature of corn growing in this country, men's minds are exercised on the question-What to grow as a substitute, and how to grow it? The subject has been recently mooted by no less a financial authority than the Premier himself. Again, when the prodigious quantities of fruit imported from France and from America are considered, it is natural to inquire whether our cultivators could not produce more fruit themselves, and divert some at least of the money that now goes to foreign competitors into their own pockets. For various reasons, elsewhere considered, we do not think the British farmer is likely to benefit by fruit culture to anything like the extent which his kind advisers in the daily papers imagine. No doubt under certain circumstances fruit cultivation is a profitable business, and its extension is to be desired, but to advocate its adoption by farcitizen." In the preface M. Baltet tells us how waste lands, deserted farms, roadsides, railway banks, and such-like situations are turned to account; and he goes on to show how the work is to be done, what sorts are to be grown (dwelling especially on those whose hardihood was proof against that fearful winter of 1879-80), and how their culture may be made profitable. He also indicates to the housewife the best sorts to grow for preserving.

The information is arranged alphabetically. One example will suffice to show the mode of treating the subject. Thus, speaking of the Apricot, we have first a paragraph relating to the soil most suitable for its culture, the aspects most favuorable to it, a description of the several varieties arranged according to their season of ripening, plantations for market purposes (in France the Apricot is grown as a standard), the mode of cultivation, of pruning, of gathering and packing the fruit, the method of preserving the fruit, and other details. A similar plan is followed with the several kinds of fruit of all varieties capable of outdoor culture being treated of. Of course the English reader would have to bear in mind the different conditions under which fruit is grown in this country, and make the necessary allowances. Peach growing necessarily occupies a large share of attention, and those of us in

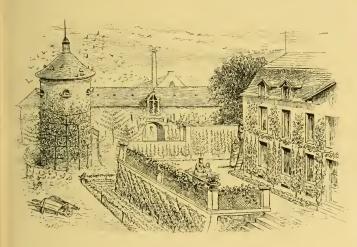


FIG. 15 .- FRUIT-GROWING IN FRANCE.

mers on a large scale, and without heed to local circumstances, is to give bad advice indeed. Those who propose to go into this business on a large scale have only to turn to our annual reports of the fruit crops throughout the country, now continued for several years, to see with what a capricious and uncertain crop they have to deal. Nevertheless, it is certain that we might do more than we do, and that with judicious limitations, according to circumstances, fruit-culture might be adopted to prevent that process of putting all the eggs into one basket which has been so disastrous to British farmers. It is, therefore, useful to see what our friends across the Channel do in the matter of fruit-culture. The climate of the North of France and Belgium, at any rate, is no better than our own on the whole, and the general quality of the fruit grown (barring exceptions) is certainly not equal to our own.

M. Baltet's book comes before us as the work of an accomplished practitioner, with whom fruit-growing is an hereditary instinct, and hence it is specially worthy of attention by those to whom the language in which it is written offers no obstacle. The key-note to the volume is struck in a quotation which may be found on the title-page, and which may be thus freely translated :—"To promote fruit culture, to increase fruit gardens and orchards is to contribute to the prosperity, the wealth, the peace of one's native land—it is the work of a useful man and of a good

this country who lament over the uncertainty of open-air Peach culture, and have heard, as most have, of the extensive cultivation of this fruit at Montreuil, and abused our climate at the expense of the French, may feel some sort of satisfaction at bearing that the losses during the "grand winter" of 1879-80 were estimated at 2,500,000 francs (£100,000)! Nevertheless, by replanting and grafting or inarching where possible, the prosperity of the Peach grower will return. There are at Montreuil 300 hectares (2.4 acres) devoted to Peach culture, or 600,000 metres of wall space, which at 22-25 Peaches per metre yield an annual average of 12,000,000 of Peaches. The earliest Peaches fetch 2-3 francs each; the later ones, which come in after the competition of Southern grown fruits is over, fetch even more. Our illustration (fig. 14), for which we are indebted to the publisher, shows the preparation and packing of the Peaches for the Paris market. The Peaches, when gathered, are laid upon a Vine leaf in a flat basket, and brought to the packing shed; there the fruits are sorted out and brushed. Those engaged in brushing the Peaches have to protect their neck from the down of the fruit, which otherwise causes irritation to the skin. The larger fruits are placed in straw puncets (semelles), eight in each, on Vine leaves; the smaller fruits are packed in baskets holding forty-eight or ninety-six; these are covered over with a cloth. The punnets and baskets are then placed on a tray

(clayon) covered with moss, the whole heing covered with a cloth. These trays are then placed in a large hamper with three partitions or shelves, one above another, and on which the punnets and baskets are placed, the spaces between them being filled in with straw to prevent displacement. Special care is given to fruit of special excellence, but the method of packing such fruit does not seem to have any advantage over our own. The illustration, fig. 15, shows how the walls of farmhouses and cottages might be utilised, and, indeed, are so in France to a much larger extent than here, for no good reason that we know of. How roadsides may be made available is shown in fig. 12, p. 76, where the trees on the one side are Apples, on the other Pears. The reader who may have travelled by diligence in parts of France, Germany, Savoy, and even Switzerland, will recal many such a road. our experience the trees in such situations are often grievously neglected, which looks as if the results did not compensate for the expenses, for unless the ground be well prepared beforehand, the trees staked and tended, suitable sorts planted, the results are not likely to be encouraging. All this, however, demands outlay and Experience alone can show if these can he labour. recouped. The loss from marauding boys is of itself hardly worth considering. The comfort to the traveller is great, but whether the road-surveyor is equally pleased is another matter, for the cost of maintenance of roads so planted must needs be larger than in the case of roads not so planted.

Our last illustration (fig. 13, p. 77) is one which will be familiar to many who find their way to Paris. I represents fruit culture in the swampy marshes near Amiens. Vegetables are chiefly grown in those places, but fruit is also cultivated—principally bush-fruit. Funts here come into requisition both for cultivators' purposes and for collecting the fruit and taking it to market.

The section relating to diseases and insect enemies strikes us as being rather weak. We find no mention of a disease which is very prevalent in Plums and Cherries, and in which the skin separates from the pulp of the leaf, giving the latter a silvery appearance, while "canker" is dismissed in four lines; nevertheless, the book as a whole is comprehensive, full of sound practical information, and free from that diffuseness which renders so many French books tiresome reading.

DORYANTHES EXCELSA.

Last year we recorded in these columns the flowering, for the first time in Europe, of Doryanthes Palmeri at Kew (see p. 409, vol. xvii.) In a short time the only other member of this noble genus of Amaryllidacex—viz., D. excelsa—will also be blooming in the same establishment. Unlike its congener, D. excelsa has not an elongated inflorescence, but a terminal almost spherical cluster of crimson flowers emerging from great half-sheathing crimson bracts. The first flower of this species produced in this country was developed on a portion of a stem, without roots, which had been cut many months before in Australia, and it was principally from this solitary flower that Correa was enabled to found the genus. Some time afterwards a properly developed inflorescence was produced in the greenhouse of the Right Hon. Charles Long, at Bromley Hill, in Kent, probably for the first time in Europe.

This plant was figured in the Botanical Magazine, vol. xli., t. 1685, and a glance at that figure will be sufficient to prove the truth of Salisbury's expression of admiration—"One of the most splendid plants we have yet received from New Holland." That author, in his report-"On the Cultivation of New and Rare Plants," in the first volume of the Horticultural Society's Transactions, says "It will live in a greenhouse, and possibly in the open ground near the sea; but vegetates so slowly that I have recommended all my friends to give it more warmth; for, like the Agaves, it does not flower till it has made a considerable number of leaves. It should have light rich soil in a pot exceedingly well drained; several young plants of it having lately been rotted by having been kept too wet." In a wild state D. excelsa throws up a flowering-stem of from 10 to 20 feet in height, and bears attential cluster, 12 to 14 inches in diameter,

of crimson flowers.

Dr. Bennett, in Australasia, says that it is found in the greatest perfection in the Illawarra district, and attains its full magnitude and beauty about the mountain ranges of that beautiful district of New South Wales. In the "North" Gallery at Kew D. Palmeri is represented in pictures Nos. 600 and 627.

Orchid Potes and Cleanings.

ODONTOGLOSSUM ROSSII MAJUS AND O. CERVANTESII are two of our prettiest dwarf Orchids, and two which not only will stand cold but revel in it, the growths becoming stout and the flowers very fine in a temperature of 45° to 50° in winter. Experiments prove that both these plants will stand frost, and instances are known of them living for years in houses in which no provision had been made for heating by artificial means, and in which they were frequently fozen hard. It is also well understood that they soon die in anything like a hothouse. Notwithstanding these facts, those who strike the happy medium are the most successful. From a house of the temperature mentioned Mr. Cypher sends a massive wax-like bloom of O. Rossii majus, 3 inches across, with a lip 1½ inch across; and also a grand bloom of O. Cervantesii.

DENDROBIUM BIGIBBUM.—A spike about a foot in length and bearing seventeen pretty dark rose-coloured flowers, naturally arranged on it, so as to need but the addition of a little Maidenhair Fern in order to make it a perfect spray for dress ornament, comes from Mr. J. Cypher, of Cheltenham, who grows this plant well and easily, while so many atterly fail with it. According to Mr. Cypher, it needs but to be grown near the glass in full light in a warm and moist but airy house, to have copious supplies of rainwater when growing, and a place in an airy intermediate-house, when its growths are fully made up. D. bigibbum, like many other Orchids, is very difficult to grow until one finds a place to suit it, and then it grows very freely.

EPIDENDRUM SCEPTRUM, Lin.II.— By-the bye some Epidendra have gained general favour, such, for instance, as enemidophorum, Wallisii, syringothyrsus Frederici Guilielmi. There is one that proved very attractive at the late Consul Schiller's, M. Linden's fine discovery, Epidendrum sceptrum. It has pseudobulby, and the general habit of Epidendrum variegatum, but the inflorescence is richer, longer, and the flowers much brighter. Both sepals and petals are orange, with purple-brown spots. The fine rhombic lip is white, with bluish-purple spots, and all the anterior parts are of the same colour, which makes a most curious contrast. Numerous inflorescences in my herbarium are all very florid. The plant would appear not to grow under 6000 feet of height, in New Grenada. II. G. Rehb. f.

STEVENS' ROOMS. - The first special sale of Orchids in flower of the season took place at Mr. J. C. S:evens' rooms, on Wednesday last, and there was a good attendance of Orchid fanciers to do honour to the very fine display of plants brought together on that occasion. The entire available space in the rooms was tilled with fine specimens of most of the popular lavourites which bloom at this time of year, prominent among them being Odontoglossum Alexandræ, in many varieties; Odontoglossum Roezlii; fine masses, well bloomed, of Lælia anceps, L. autumnalis, and its variety, atrorubens; L. albida; Lycaste Skinneri; Cattleya Trianæ, C. Percivaliana, which seems rapidly going up in price; fine pans of Coelogyne cristata, &c. Among the rare plants offered may be noted a distinct-looking, gigantic-flowered Ladia, from Messrs. Backhouse, of York, and which was correctly described in the catalogue as being like L. furfuracea in form and colour, but much The finest form of Lycaste Skinneri alba fetched 12 guineas; Lælia Crawshayana, 4 guineas; Phalænopsis amabilis Dayana, 6 guineas; a fine form of Cattleya Trianæ, 6 guineas; Odontoglossum Edwardii, £7; O. Andersonianum, 9 guineas; a fair plant of Cypripedium villosum, 9 guineas; a fine pan of Cselogyne cristata, 61 guineas; and a good Lælia autumnalis, 61 guineas.

CATLEVA PERCIVALIANA.—The most flattering testimonial that could possibly be given in favour of a new plant, was accorded to this handsome Cattleya on Friday week at Messrs. Protheroe & Morris' Rooms, when Messrs. Veitch & Sons paid 100 guineas for an imported piece that has not yet flowered in this country. This is the highest price that has ever been given under the hammer for an imported piece of

Cattleya, but we are bound to admit that the specimen was an extraordinary mass, and we know now what the variety is like. At Stevens' Rooms, on Thursday, a plant of the white variety, that would weigh about 2 oz. out of the pot, was bought by Baron Schreeder for 19 guineas—something more than its weight in gold!

CATTLEVA GASKELLIANA, another of Mr. Sander's introductions, was also offered at Protheroe & Morris' sale, and a specimen with a hundred red bulbs and leaves fell to Baron Schröeder's bid of 16 guineas. The same grower also gave 20 guineas for a plant of Saccolabium illustre.

ONCIDIUM CHEIROPHORUM,-The flowers of this Orchid are rather small, but they are produced on slender branching panicles, and the bright yellow colour of the curious labellum, together with the contiguity of the numerous individual blooms, render it attractive, and worth the attention of cultivators. Add to this that it is possessed of an odour by no means disagreeable, and we have a subject of some merit for the flower basket. The sepals and petals are slightly tinged with green, but being small and reflexed give all the more prominence to the labellum.

The ordinary divisions of this with the lobes of the crest or callosity, give rise to the fancied resemblance of a hand as expressed in the specific name. One of these lobes projects upwards and backwards in close proximity to the gland of the anther, which is borne on an unusually elongated caudicle. These modifion an unusually elongated caudicle. These modifi-cations doubtless bear direct relationship to the process of fertilisation.

A HYERID ODONTOGLOSSUM.—An extraordinary variety, apparently intermediate between O. maculatum and O. Rossii majus, with the yellow of O. maculatum suffusing a flower of the same shape as those of O. Rossii majus, was acquired by Mr. Lee, at Stevens' rooms, on Thursday.

FRUITS UNDER GLASS.

STRAWBERRIES .- The old method of wintering these, by placing them on their sides in tiers until they formed a stack, is now but little followed. it is well that it is so, for a practice that oftentimes caused plants so treated to remain for weeks together with the soil about their roots dust dry could not possibly be a safe one, and the wonder is it ever became generally adopted. Cold frames are the best places in which to keep Strawberries when at rest; here they can be protected from the injurious effects of the weather when severe, and exposed to its influence when favourable, as well as be conveniently attended to with regard to watering. Failing convenience of this kind they may be safely plunged in beds of ashes or cocoa-nut fibre out-of-doors, provided care is taken to protect their pots from severe frosts by adequate coverings of straw or Bracken. ever mode is adopted, they should not be allowed to suffer from drought. At this early stage forcing by artificial heat should be pursued only in a mild form, and its part may be accomplished principally in the daytime by the valves being opened sufficiently in the morning to cause a circulation through the pipes and closed again in the evening if a night heat of 50° can thus be obtained. What is wanted is bright sunshine, and when this appears allow it to run up the temperature and economise its heat by closing early and syringing the plants overhead. Damp the walls and floors of pits on clear days, but guard against excessive moisture when the weather is dull. When the plants come into blossom keep up a circulation of warm air, and discontinue overhead syringing, and attend to watering in the early part of the day, and about noon go over the flowers with a camel-hair pencil to distribute the pollen. After giving the mode of starting Strawherries early by plunging their pots in bottom-heat repeated trials, and failing to find any advantage therefrom, we have discontinued it. The course we follow instead is this—a number of Melon pits that are not required for early crops are filled with leaves, and over these temporary stages are fixed, upon which the plants are arranged and allowed to remain until they come into blossom; the warmth from the leaves dispenses with much fire-heat, and a humidity is obtained which gathers on the foliage during the night, and under these conditions the plants make early growth.

PEACHES AND NECTABINES -If the trees in the early house have made good progress they will now be coming into blossom; syringing overhead must therefore be discontinued until the fruits are set, but still follow up the damping of walls and borders with tepid water, as anything like parched air would cause a serious check. Insure a buoyant atmosphere by keeping the ventilators a little open night and day so long as the weather remains mild, and keep the night temperature by fire-heat at 55°, with 5° more in the day, or 10° to 15° more from sun-heat, with additional air. About mid-day, when the blossoms are dry, assist fertilisation by passing a camel's hair brush over those that have burst their pollen vessels. A house for succession should now be closed. If it has an external border a covering of fermenting leaves and shutters will prove beneficial, by preventing fluctuations of temperature and encouraging root action. The buds in late houses are becoming exceedingly prominent for the season-dangerously so in those that are unheated-and every available means should be taken to retard their progress; keep the ventilators and doors wide open, and if the internal borders are dry, apply cold water. The severe frosts which we experienced last March, when many expanded blossoms in houses of this description perished, will not readily be forgotten; and should we have a repetition at the same time this year, the chances are it will prove even more disastrous. Proceed with cleaning and tying without delay, for with the buds in their advanced cannot be accomplished too soon; remove inert soil from the surface of the border, and replace it with moderately heavy loam, mixed with old mortar, which should be made firm by treading.

PINES.-Autumn rooted suckers should be in a fit state to repot next month, and the present is a good time to prepare soil for the purpose; the kind most suitable is a light loam full of fibre and roots of grasses, &c., such as is commonly to be met with on hilly sheep-walks, where the finer grasses abound. If turves were procured ten or twelve months ago, and properly stacked, they will now be fit for use, and should be got in readiness by having the loose soil first beaten from them, and then torn in pieces, the necessary quantity thus obtained being placed ridgewise in an airy shed and turned occasionally in order to get it thoroughly dry and sweet. Previous to potting mix with a barrow-load of this soil about half a gallon of soot, and the same quantity of crushed bones. Excellent fruits cap, however, be produced without the aid of either of these fertilisers if guanowater or other similar agent is skilfully employed. A house or pit, as the case may be, should be cleansed for the reception of the plants, the glass being washed both inside and out, the plunging material, tan or leaves, turned and mixed with the necessary additions, and the heat so regulated that the temperature of the bed can be depended upon to keep at about 90°. Our beds are formed of Oak leaves, and have some hotwater pipes under them. In turning over and making additions of leaves to fill up the space caused by decomposition we avoid freshly gathered leaves, preferring those that have done one season's service in pits under Potatos and Melons, as we thereby lessen the risk of violent heating,

VINES .- Now that the shoots in the early house are considerably advanced, and the thermometer outside still ranges unseasonably high, it is well to be able to command an internal temperature correspondingly high-a degree of warmth which it would be hazardous to employ with adverse external conditions. So long as the weather remains dull, and prevents the foliage from assuming its natural dark colour, the atmosphere should not be unduly charged with moisture, especially where the bunches show a tendency to run to tendrils. An error not unfrequently committed is to use water injuriously plentiful in this way, and too sparingly in the borders; the latter should be periodically examined and well soaked with tepid water when necessary, for the Vine enjoys copious supplies at its roots; but the frequency of its application depends entirely upon the state of the Vines, the nature of their horders, and their drainage. As the shoots extend to the limit of their allotted space they should be stopped at as many joints beyond the bunches as space allows without crowding; proceed cautiously in tying these, being content with keeping the leaves clear of the glass until they get a firm hold of the spurs or rods, when they can safely be brought by degrees to the trellis. Stop sublaterals beyond the first joint, and

pick out superfluous bunches, leaving those which are best placed and which should be assisted to fertilise when they come into blossom with the help of a camel's-hair brush. The little trouble this incurs is more than compensated by a more regular size in the berries which it is instrumental in produciog, even with such free-setting varieties as the Black Hamburgh. Where fermenting material is used over outside borders, the desired heat should be maintained by the addition of heated leaves. We formerly followed this plan, and were well satisfied with its results; but our early Vines are now confined to inside borders. Continue to syringe, two or three times daily, the Vines in the house which was closed early this month. If a bed of fermenting leaves is used inside, turn them frequently to allow moisture and heat to escape, this will induce a timely start in the present state of the weather without the aid of fire-heat. A Muscathouse should now be closed, in order to have these in a welt finished state early in the autumn, Thos. Coomber, Hendre Gardens, Monmouth.



PLANTING CABBAGES AND CAULIFLOWERS.—If the present mild weather continues it will be advisable to make a planting of Cabbages from the nursery-beds next week in a warm situation, which will supplement the supply from the autumn-planted ones drawn from the same seed-bed. At the same time a small planting of Cauliflowers should be made in a sunny aspect in drills 3 inches deep and about 24 inches asunder. Plants turned out of 3-ioch pots, inasmuch as they will experience little, if any, check in being transplanted, will be the most suitable for early plantings. The Cabbage plants should be planted in the same way as the Cauliflowers, but need not be so far apart as the latter. A few hundles of Spruce boughs should be provided with which to protect the plants in the event of frosts or cutting winds ensuing, as a little timely forethought and judicious management in this direction invariably leads to good results.

ARREARS OF WORK.—See that all arrears of such work as the wheeling of manure on to vacant pieces of ground and the trenching or digging of the same are proceeded with as opportunity occurs, and do not postpone until a later and busier time work that time and other circumstances will with ultimate advantage allow of being done now. See that the stocks of Onions, Shalots, &c., are looked over occasionally, and that any bad ones that may happen to be amongst them be removed forthwith, and that all green crops, such as Broccoli, Spinach, autumn-sown Onions, and Cabbages, and garden walks be kept free from weeds, and the walks, if necessary, gravelled and rolled at short intervals so as to present a clean and firm surface.

FRAME GROUND.—The subjects in this department should have an abundance of air in the absence of frost and snow—I mean the young Lettuce and Cauliflower plants for spring planting—to insure sturdy growth. Look over the established plants of Lettuce and Endive in this department, and remove therefrom any decayed leaves, and destroy forthwith any slugs that may be found in the frames.

SEED SOWING.—As soon as the condition of the ground will permit of its being done a small sowing of Early Nantes Horn Carrot should be made on a south border. Before drawing the drills, which should be about 1 inch deep, and 1 foot apart, the ground should be dusted over with some new soot, not nnly as a means of fertilising the soil, but also of keeping the roots free from the attacks of wireworm. A small sowing in the same manner and situation should also be made of Early Purple-top Munich and Snowball Turnips, and the Queen or Early White Naples Onion—the latter for drawing young.

FORCING DEPARTMENT.—A good supply of warm during and leaves (about three parts of the latter to one of the former) should be kept in readiness for making the linings of hotbeds on which Potatos, Carrots, &c., are grawing, as a means of maintaining a gentle heat therein, also with which to make fresh beds for similar purposes where necessary. Another batch of Potato sets (in quantity according to the extent of bed or pits to be planted) should be put

in 3-inch pots or boxes in leaf-mould, and placed in an early vinery or Peach-house to start them into growth, and when they have made shoots 2 inches loog they should be planted on the bed in rows 12 or 15 inches upart, and 7 or 8 inches in the row. In making fresh hotbeds, when the frames are placed upon the beds it will be necessary to put a little dung and leaves inside them, so that there may be a corresponding depth in the back and front of the frames, and over this a couple of inches of rotten dung should be put, then 9 or 10 inches in thickness of light garden soil and leaf-mould (about three parts of the former to one of the latter), making the bed of soil as near to the glass as will admit of the respective crops completing their growth without coming in contact with it, and this should be in the frame a few days previously, so as to become slightly warmed before planting the Potatos. In some cases the Potatos will have made so much growth on the shelves in the Potato-house as to render their being set in pots or boxes prior to planting unnecessary. Previously to sowing the Carrot seed the soil should be trodden over, and a few shovelfuls of new dry soot scattered over the surface of the bed, and scratched in with the rake when levelling the soil. Early Nantes Horn Carrot is the best variety for early work, and may be sown in rows at from 9 inches to I foot apart, and where suitable space for early sowings are scarce, a row of Wood's Frame Radish may be sown between the rows of Carrots, covered with half an inch of sifted mould, and patted with the back of the spade to compress the soil. At the outset these frames will require special attention in the way of airing them, and in order to prevent anything like steam arising and becoming pent-up in the frames it will be advisable to leave a little air on them day and night for the present, and subsequently give sufficient air to prevent the occupants of each frame from making a weakly growth. Where Seakale is not forced in the Mushroom-house, another batch of crowns should be covered with pots or boxes, and then with about 3 feet thick of fermenting leaves from the leaf-heap. A batch of Rhubarb crowns may be treated in a like manner. No time should now be lost in making a sowing on a hothed or in boxes, to be placed in heat, of Early London Cauliflower, Brussels Sprouts, and Cabbages, including a pinch of Red Dutch; also a small sowing of Cos and Cabbage Lettuces, and a pan of the most approved sorts of Celery and Leek for early use, and as soon as the plants appear through the soil they should be placed near the glass and in a less warm temperature, where they can have a little air to prevent their making a weakly growth. Keep a supply of good soil in the potting-shed out of the reach of inclement weather, wherein to raise French Beans, and subsequently with which to top-dress them. H. W. Ward, Longford Castle, Wills.

Plants and thein Cultune.

PALMS FOR DECORATIVE PURPOSES .- The cultivation of these Princes of the Vegetable Kingdom in a small state has rapidly risen in favour of late years, and the demand for them seems even to be on the increase. This is especially the case with those varieties that have proved themselves to be of an enduring character when grown under adverse circumstances, and with others which are utilised in the embellish-ment of apartments. Their stately, yet graceful and well-proportioned outline causes them to be in great request for this latter purpose, and when approriately used no other plants can excel them in effect. Where much indoor plant decoration has to be carried out, it is indispensable for the health of the general stock of such plants that a gnodly number should be grown; this is essential also in order to afford a greater diversity in the arrangements and groupings. The complaint is oftentimes made that plants are so frequently spoiled by being used in the house. This in most cases is brought about by a too limited supply for the purpose being kept in reserve. In such cases the plants have to be left beyond reasonable time in situations where it cannot be expected that they will thrive. When plants that have been grown in light glasshouses are transferred to dark rooms the surroundings are so different, the atmosphere so arid, and the exposure to cold currents of air so frequent,

and that too from an open window, sometimes with the outside temperature below the freezing-point, Under these conditions, it is no wonder that complaints are made, which by judicious management might be avoided. To ensure the best possible success, a good reserve stock of plants is indispensable, together with a batch of younger stock coming on to fill their places. Taking this precaution, and a systematic changing of the plants, say at least three times a week, will much reduce the chances of failure. It is also necessary to keep a close watch on all such plants with respect to the watering; on no account should they be allowed to suffer from dryness at the roots, as this, combined with the dry atmosphere of the rooms, will soon cause sickly, yellow foliage, and impaired health. No plants that have been recently potted should be used again till they are well established. Irreparable injury will be caused when this point is overlooked, in the case of young and tender species in particular. The frequent sponging of the soliage is also an essential point in good culture, and improves the appearance of the plants. This need only be done with a weak solution of an insecticide. if there are no mealy-bug or white scale present. Palms in particular are somewhat disposed to attacks from the latter insect, and a form of scale nearly as troublesome, but not so readily recognised by reason of its brownish colour. For these a stronger solution will be necessary in order to dislodge them. Bottomheat for all decorative plants must also be avoided whilst they are liable to be called upon to do duty, from reasons obvious to every practical cultivator.

The present would be a very good time to recruit the stock of Palms for such purposes as we have dwelt upon in these remarks. The immense numbers that are annually raised from seed in this country, and by importations from the Continent, have brought the more popular and the kinds best adapted within the reach of most cultivators. Ifalf dozens and dozens can now be obtained for the price that only a few years back had to be paid for a pair of plants. glance into the houses devoted to their culture by our nurserymen will at once give an idea of the varieties in the greatest request. In the very front rank are the Kentias, chiefly K. Forsteriana and K. australis, for decorative work; these Palms are not surpassed by any others in cultivation. The hardihood of these by any others in cultivation. The hardthood of these plants, combined with the deep green colour of their foliage and compact growth, render them of the greatest value. Seaforthia elegans, Latania (Livistonia) borbonica, Euerpe edulis, Corypha australis, Areca (Kentia) sapida, Phoenix reclinata, P. temis, Area (Kentia) sapida, Phoenix reclinata, P. temis, and P. rupicola are all tolerably hardy kinds, whilst the well-known Cocos (Leopoldinia) Weddelliana, Areca lutescens, and A. Verschaffeltii, which require ordinary stove treatment, should be included in every collection of bothouse plants. Of other good hardy collection of bothouse plants. ordinary stove treatment, snould be included in every collection of hothouse plants. Of other good hardy room plants, Aralia Sieboldii and its variegated form room plants, Aralia Sieboldii and its variegated form are both valuable; so is Aspidistra Iurida variegata and Dracena congesta and D. rubra. For larger vases the Phormiums are all fine objects, and where tall plants can be used the Phorniums. plants can be used the Rhopalas give us a distinct type.

There are many more genera from which selections may be made for use under this heading, but those we have named are among the best for all-round purposes. A good selection of decurative foliage plants is a great boon to those who from necessity rather than choice have much room-decoration to perform, relieving the monottony of and toning down the colours of flowering plants, besides being also a saving in the use of the latter, which are not so well calculated for the purpose, especially where gas is burnt. Any additions that are made to the stock, either by propagation or otherwise at this season of the year, can have good attention given them before greater pressure is brought to bear on the general routine from other departments.

FORCING PLANTS.—Fresh additions to these should be made according to the supply and demand, bearing in mind that a lew plants of any given subject introduced into heat at the time is much better than a greater numberal longer intervals. Azalea mollis and the hardy Rhododendrons may now be started in a gentle heat, whilst Andromeda floribunda, if given the protection of a cold house even, will develope its beautiful spikes to perfection. Lilacs and Deutzias, with the beforementioned plants, will all be benefited by being plunged in a slight hotbed of leaves, the moisture arising from which greatly helps to develope the flower-buds. Lily of the Valley and Hoteia (Spirea) ajapanica should be started now in a brisk heat; a slight covering of each with cocca refuse at the commencement will give the spikes a start in advance of the otherwise rapid formation of foliage. The most advanced of the Hyacirubs, Tulips, and Narcissis should be chosen and accorded a position near the glass, putting in small quantities at frequent intervals. James Hudeon, Gunnersbury House, Acton.

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY, Jan 21 Sale of Liliam auratum Bulbs, at Stevens'
REONESCAY, Jan 23 Sale of Imported Orchids and Lilies, at
Stevens' Rooms.
SATURDAY, Jan 24 Sale of Lilies, at Protheroe & Morris'
Sale of Circhids, at Protheroe & Morris'
Sale of Orchids, at Protheroe & Morris'
Sale of Hardy Plants and Bulbs, at Stevens'
Sale of Hardy Plants and Bulbs, at Stevens'

WITH Wheat at 40s per quarter after a harvest barely up to average, and with only a feeble speck on the agricultural horizon to give a gleam of hope for any substantial improvement of prices in years to come, the question which naturally forces itself upon every one at all conversant with rural affairs is, What is to become of the broad acres of England?-at all events, so far as concerns no inconsiderable portion of them. Within a moderate distance by road of large towns, where the straw, which at present prices makes nearly as much per acre as the corn, can be carted to market, and manure in the shape of backcarriage can be had for a nominal price, or where sufficiently near a railway by which the straw can be sent and manure in return be had at a low cost, then there is some chance of corn growing still being made to pay. But there is much more land that has been so far devoted to corn growing that is outside the range of the above-named advantages than is within it, at any rate so far as being within a reachable distance in the matter of manure, even if the supply of this essential commodity were sufficient to meet an extended demand. As usual when any particular industry goes wrong, there is no lack of advice forthcoming-some sound, with much that is impracticable. Grow less corn, and set to work to produce more milk and butter; grow more vegetables and more fruit. advice under certain conditions, and kept within due limits; but it is well to remind those who seem to consider that if the course they suggest were followed the effects of the low corn prices would be set to rights, that this is more imaginary than real. Thousands of acres of heavy thinskinned land that will grow corn will yield little milk and less butter, unless the cows get a good deal besides the grass and hay which such land produces. And here again it is only within a limited distance of towns, or railways connected with the towns, that the principal article, milk, can find a profitable outlet.

With regard to an increase of culinary vegetable growing, so far as to have any appreciable influence on the position of the cultivators of the land throughout the kingdom, the advice can only have been given in ignorance of the subject. In the neighbourhood of towns supply and demand will, as hitherto, find their correct level. If an additional acre in each parish throughout the rural districts of the kingdom were devoted to vegetable culture, leaving Potatos out of consideration, the price obtained for the produce would not cover the cost of production.

Respecting fruit, the subject requires to be considered in a two-fold aspect, as between soft kinds that perish quickly, and others that will keep more or less. Soft kinds. under which head may be included Strawberries, Raspberries, Currants, and Gooseberries, that are not gathered green, must be gathered without delay as they come due or they are useless; and they must be used quickly afterwards or they are wasted; and to attempt their further cultivation to an extent worth naming could only be done in the vicinity of towns, or large villages, away from which the hands to gather them could not be found. As regards the principal fruits-Apples, Pears, Plums, and Cherries-all these take a considerable time in coming to a bearing state; standard trees are mainly to be reckoned on for planting on a

large scale, and something like eight or ten years may be counted on before much return from them can be expected. Beyond this the land over a large extent of the kingdom, where until recent years corn could be profitably grown, will not answer for fruit culture.

With land that cannot longer be let for the cultivation of corn, and which, either from its nature or situation, will not admit of being profitably employed in the production of any of the commodities which are now so glibly talked about as the means by which all the difficulties that beset the question are to be set right, it is no wonder that proprietors who thus find themselves placed are weighing the question whether it would not be well to plant more or less of such land with a view to the growth of timber, and are further meditating about what to plant. It is a subject deserving of consideration.

There can be little doubt, from the evidence of those whose conclusions are drawn from reliable sources, that the supply of foreign timber, which during the present century has reached the country in unlimited quantities, is not likely to be kept up, neither in regard to quantity nor to quality. This is most apparent from the source whence we have so far had the greatest quantities-North America. Compare the thin, sappy deals that now form the bulk of what we get from that country with those that used to come. A similar state of matters is represented as to the condition of the forests in the Old World, where waste, coupled with consumption, effect a clearance much faster than the growth going on can keep pace with, all pointing in one direction-that higher prices at no very distant date will rule. The question as regards the requirements in time to come in the matter of timber is very different to what it was when the commerce of the world was afloat in wooden walls. The best of the hard woods-Oak, Ash, and Elm-will always be wanted in more or less quantities; but the softer, faster growing kinds, such as Poplar, Willow, and Pine, coming sooner to a useful size, not only give quicker returns in the thinnings, but also in the mature growth, which more than counterbalance the difference in price. The demand for these kinds of timber is more likely to increase than otherwise, from the fact of their being used for purposes that in times past did not exist. As regards the Pine, there can be little question that the Corsican Pine (P. Laricio) should hold the first place, growing faster than any of its congeners; forming smaller branches than other kinds it concentrates its strength in the trunk, which stretches out apace, gaining substance in proportion.

Amongst hard woods, Sycamore now heads the list in demand in many parts of the kingdom, with a probability of its still further taking the lead. It thrives anywhere in the kingdom, where not too much elevated, and the soil not too wet. There are few, if any, trees more worthy of the attention of planters in this country at the present time. Sycamore, with the above-named Pine, Willows, and Poplars, selected to suit soils and situations, seem to hold out the best prospects of a remunerative

THE WEEK.—The annual meeting of the Gardeners' Royal Benevolent Institution, which was being held as we went to press last week, and of which a necessarily brief report only could then be given, is likely to be a memorable one in the aonals of the Iostitution. In the first place, the voting was the highest that has ever been recorded. For the first elected candidate, Mrs. LARISSEY, 2931 votes were giveo, or 466 more than the candidate highest on the list last year obtained; while the lowest on the successful list, JAMES HUTCHESON, obtained 1196, or 319 more than were required last year to carry the eleventh candidate; the total number of votes recorded this year for the eleven successful candidates being 19,774, or 4286 more than the same number received

last year; and the total number polled for the nineteen candidates was this year 24,210. The second special feature was a statement made by the Secretary. to the effect that a gentleman, whose name he was not at liberty to give, had authorised him to say that if the sum of £1750 can be raised and added to the reserve fund during the current year, he will give the (500 that will then be required to make the reserve fund up to £20,000, when the pensions can be raised £4 each.—At the forthcoming annual meeting of the Royal Horticultural Society it is proposed that Viscount ENFIELD, Professor MICHAEL FOSTER, and F. CANE GODMAN, Esq., he elected members of the Council in place of the retiring members, James McIntosh, Esq., SirCharles Strickland, and H. WEBB, Esq. The proposed names will, we expect, be hailed with approbation, though we regret to have to lose such tried friends of the Society as those mentioned. No change is proposed to the officers. The annual meeting will take place on February 12.—A new journal, entitled the Scottish Fancier, and devoted to the breeding and management of dogs, poultry, pigeons, &c., has just been commenced. posed to be published monthly at Id.—Mr. GLAD-STONE'S speech to his tenants at Hawarden, in which he mentioned the subject of fruit growing by farmers, has attracted much attention. Mr. GLADSTONE seems to have been misinformed as to the extent to which fruit culture is already practised, which is much greater than he was aware of. Foreign competition, agaio, does not so seriously affect the British fruit grower as he stated, for it deals with a class of fruit which cannot be profitably grown in this country at an early season, such as that at which the foreign fruit comes into the market. Moreover, by far the greater part of the jam consumed in the country is made in this country, and not imported. The argument that farmers, though they may know how to manage a farm, are ignorant of fruit trees and their culture, may be true, but if it once be brought home to them that there is "money in it," we do not doubt they will soon acquire the necessary knowledge if the locality and the tenure upon which they occupy their land be satisfactory, and they be not burdened, as they are in some counties, with "extraordinary tithes" and prohibitive railway rates. - The alteration in the constitution of the Floral Committee, to which we alluded in our last, is received with approval by several of our correspondents, who see in it "a feeble step towards better things."-We have received the programme of the "International Health Exhibition," an awkward title for the exhibition which is destined to "lollow the fish" at South Kensington. The objects at South Kensington. specially mentioned are illustrations of food, dress, the dwelling, the school and the workshop, and appliances relating thereto. It is clear that gardening and garden products, though not specially mentioned, have a potent influence on health. Class I includes specimens illustrative of upprepared vegetable substances used as food; class 8, drawings and models of vegetable parasites. We could have wished to have seen some special attention given to school play-grounds, school gardens, soldiers' gardens, town squares, and recreation grounds, all of which come fairly within the scope of the programme. Perhaps it is not too late to make a special class for plans and other things connected with them.

—— BEAUTY OF APPROPRIATENESS. — Most of the mistakes made in decorative gardening are trace-able to the use of good materials in the wrong place, or for improper purposes. It is desirable and agreeable to make representations of birds, butterflies, coats of arms, heraldic devices, and the like, hut it is a mistake to do so with flowers and coloured leaves. The increase of taste has well-nigh haoished the monstrosities in Berlin wool work, in which our grandmothers delighted. We see now how ludicrously inappropriate such things are, and we shall not be long before we realise that mosaic beds of the character indicated are as great an outrage on good taste. It does not follow that we are not to have cakes and ale any more, only the cake will be better cooked, and the ale more wholesome.

— A New Chinese Rhododendron.—In the number of the Fournal of Botany for this month is a full description of "a very fine new Rhododendron," allied to R. arboreum, and discovered in the mountains of Lo-fau-shan, by the Rev. B. C. Henry. Dr. Hance, who describes the plant, says that a constant cloud-like mist fills and rises from the gorge



FIG. 16.-HELLEBORUS NIGER, VAR. ANGUSTIFOLIUS: FLOWERS PURE WHITE. (SEE P. 77.)

where the plant grows. Dr. HANCE says that the mountains in question, which are about 40 miles north-east of Canton, form a series of plateaux whence arise peaks, some of them attaining a height of 3500 feet, furnish by far the richest and most interesting botanising ground within accessible distance of Canton, and feels sure that its careful exploration would lead to the discovery of a large number of valuable and ornamental trees and shrubs, as well as betbaceous plants, and trusts that the Kew authorities will endeavour to arrange for the systematic investigation of the locality by Mr. FORD, of the Hong Kong Botanic Garden. We should think it a desirable field for a nurseryman's collector also, provided the state of the country permit.

- THE IRISH SEED POTATO FUND. - The report of the committee of the fund promoted by the Society of Friends for Supplying Seed Potatos to the Distressed Peasantry in co. Donegal has been issued, and from this it appears that altogether about 276 tons were distributed, and the committee having set out with the determination of giving only one bag, containing 2 cwt., to each family, the number of recipients was very considerable. The supply of fresh seed was looked upon as a great boon, and very thankfully received; so much so that instances are known of people walking ten miles each way, several times, with the hope of receiving a bag, and the committee have great satisfaction in believing that a very small percentage indeed was used otherwise than for seed, seeing that the distribution was effected just in the most favourable time for planting. There are thousands of acres of waste land in the country which might possibly be properly cultivated. The accounts show a balance of £105 6s. 3d. in hand, which the committee will endeavour to expend judiciously, and in accordance with the object for which it was contributed. In conclusion, the committee are glad to say they have had reports from various parts of Donegal stating that there is an excellent and abundant return from the seed supplied.

→ Mr. Thomas Hewitt has sold the nursery and seed business carried on by him at Solihull and Birmingham to Messis. C. W. Falcon and J. F. L. Evans, by whom the business will be carried on under the title of Thomas Hewitt & Co.

- THE SEASON'S IRREGULARITIES. - A correspondent writes :- "Amongst the striking evidences of the open mild nature of the midwinter months, none is to me so remarkable as the sweet singing of the birds. It is not at all unusual to hear a lark singing high up in the air just as though it were the month of May, and its mate were nestling its eggs in the bosom of Mother Earth. But even from New Year's Morning till now, without exception, a beautiful thrush has been singing gloriously in a near Oak tree; where, perched on the topmost branches, it carols forth in rich and powerful note its orisons to the rising sun. How many millions of town dwellers are there who would delight to possess the privilege I now have of hearing the song of this bird every morn-Birds seldom trouble the fruit in ing when I wake. this locality; but if they did it must be a selfish soul indeed who would grudge to this beautiful throstle and his mate a little of the food so abundantly provided for man. And why not for the birds also

- AMERICAN CUT FLOWERS. - Some New Yorkers are perhaps a little given to exaggerate. If, however, they fail to plead guilty to that literary vice, then must some New York flower-baskets be remarkably large or the flowers remarkably small. When we are told that a retail dealer in cut flowers orders from the salesman 200 Camellia blooms, 200 Carnations, and some 200 of other flowers, and that these hardly cover the bottom of the retailer's basket, we may be excused for thinking that there is a little stretching somewhere. Two hundred Camellia blooms, each 21 inches over, would cover at least a square yard of surface, and the other 400 flowers would certainly cover as much again; so that it must have been a monster basket indeed that had not its bottom filled! It may be that such a lot of flowers was not dear at the price given-viz., £16-for after an examination of the whole: ale price-list from Covent Garden it is doubtful whether such flowers, if good, could be purchased more cheaply here. No doubt the present winter, so far, has been unusually favourable for forcing, because the external temperature has been

high, and the atmosphere fairly dry. The heavy fogs which prevailed about Christmas were exceedingly trying, but forced plants just then seemed more in need of artificial light rather than of additional heat. That dull dark period would have proved a capital time to have tested the value of the electric light in plant forcing. The metropolitan fogs have left us, in mensoriam, a dirty deposit of soot, rendering glasswahing oeedful. In all other respects, however, the winter, so far, has been on the side of the market florist, but native modesty prevents that hoasting which marks some Transatlantic growers.

- HOYA CARNOSA AS A WALL PLANT, -Curious examples of an admirable method of utilising the back walls of heated greenhouses may be seen at the Royal Nursery, Feltham, where Mr. ROBERTS has converted Hoya carnosa into a pure wall plant by cutting out holes in the wall at intervals of 4 feet, and about 2 feet from the rafters, and placing into these plants turned out of small pots. The holes are small -scarcely large enough, indeed, to get both of a man's hands into comfortably-and yet in these mere crevices the Hoyas have rooted and made remarkable growth; in fact, there are shoots 14 feet in length, and the upper portion of the wall is being fast covered. A small orifice is left on the upper side of each hole, into which water is occasionally poured, but the plants really depend for their moisture chiefly upon atmospheric vapour and syringing. They bloom most freely, and in their curiously restricted root-space thrive admirably.

FIGUS ELASTICA.—Standard Indiarubber plants, perhaps, are not common, but a few growing planted out in a centre bed in one of the span-houses at the above nursery show what noble plants these would make in any roomy conservatory, were they trained up to a tall stem and thee broken to throw out a number of branches to be slightly arched, like to the growth of a Weeping Ash. Mr. ROBERTS' plants show magnificent growth, having shoots that of necessity have been tied to the rafters quite S feet in length, and carrying splendid foliage. As a single-stemmed plant this Figus soon assumes a gawky aspect, but grown as a standard the result is very noble.

——SENECIO MIKANIOIDES.—From Italy we have received specimens of this plant under the name of "Nice Ivy," which proclaim it to be a very ornamental species. It is one of the South African climbing species, with stalked, Ivy.like, 5-7 angled leaves, of a bright green colour; and axillary and terminal, small dense corymbs of 10—12 flowered discoid heads, of a bright yellow colour; usually several of the small corymbs are crowded together at the ends of the branches, and make a very effective display. In the island of St. Ilelena, where it has been introduced, it is known by the name of "Ground Ivy." In this country this showy species must of course he treated as a greenhouse climber, like its congener the handsome S. macroglossus.

- THE SAWBRIDGEWORTH NURSERIES .eighth anniversary in connection with the sick fund attached to the Sawbridgeworth Nursery was celebrated in a very pleasant manner on the evening of January 3. At half-past 5 between fifty and sixty of the Messrs. RIVERS' employe's sat down, in one of the large glass-houses in the part of the nursery known as Miseman's, to an excellent dinner of "old English Christmas fare," which was followed by a series of toasts, which included "The Health and Prosperity of the Messrs. RIVERS," and "The Chairman," the firm's able manager, Mr. CAMP, who in reply gave some interesting particulars relating to the sick fund. including details of the receipts and expenditure. He was pleased to say that the institution was in a flourishing condition, notwithstanding the drain upon their resources, for there had been more than usual sickness last year, and consequently additional claims, beyond what had been known for a long time past. But he was thankful to be able to report that, after all demands had been met, there was still an increase of the balance in the Post-office Savings Bank. This must be very gratifying to them all, and certainly the prospects of the fund-which was doing an excellent work-were very promising. An adjoining greenhouse was set apart for smoking and a general gossip while the "banquetting room" was cleared for a concert, to

which neighbours and friends were invited to the number of about 350, and who thoroughly enjoyed the entertainment.

THE "BOTANICAL MAGAZINE" for December contains an illustration of Eremurus robustus, the finest of the genus, having long close spikes of star-shaped pinkish flowers like those of an Asphodel; it is a native of Ceotral Asia; Gentiana Moorcoftiana, Aërides Emeria, Papaver Hookeri, differing from P. Rheas in its great size, as it forms a bushy herb 4 feet in height; Medinilla Curtisii, the representation of which gives the impression of a twining plant with pendulous branches—the specimen shown at Kensington from which our figure p. 108, vol. xx., was taken, was, however, quite erect.

— DECAISNEA INSIGNIS, Bot. Mag., t. 6731, is a most remarkable plant, originally figured in Sir J. HOONER'S Illustrations of Illumalayan Plants. It is a glabrous, creet, little branched shrub, with unequally pinnate leaves, leaflets ovate lancealte acuminate; flowers polygamous, green, bell-shaped, in long racemes each about \(\frac{3}{2} \) inch long, 6-parted in the male flower; the andrescium is columnar below, dividiog above into six stameos, anthers prolonged into a long pointed appendage; in the female flower the stamens are imperfect and surround three cylindrical recurved many-seeded carpels which ripen into golden-yellow, tuberculate follicles filled with white sweet pulp in which the seeds are embedded. It is included in the tribe Lardizabaleæ of Berberidaecæ, It flowered at Kew.

PRIMULA FROLIFERA, Wall., Bot. Mag., t. 6732, better known as P. imperialis, has been recently received from the mountains of Sikkim, where it was gathered at an elevation of 10,000 to 16,000 feet, having previously been known only from the Khasia hills, at about 4000 to 6000 feet; and from the mountains of Java at 8000 to 9000 feet. The foliage is by far the largest of any Primula, the feaves attaining 18 inches in length and 5 inches in breadth. The flowers are yellow, in whorls placed one above another.

LOTUS FELIORHYNCUS, Bot. Mag., t. 6733, is a very remarkable Leguminous plant, from Tenerific which flowered at Kew last spring. It is a small, much-hranched shrub, covered with silky pubescence. The branches are very slender, thickly best with spreading fillform leaves; flowers 1½ inch long, loosely crowded on short axillary stalks, calyx bell-shaped, irregularly five-toothed. Corolla papilionaccous, twice the length of the calyx, dull crimson, with narrow-pointed standard and wings. Staminal tube long, dividing into nine slender filaments, five looger than the rest; a tenth stamen is free.

— MORINA COULTERIANA, Bot. Mag., t. 6734, is a handsome herbaceous plant, more or less covered with pubescence; leaves linear, spiny at the margins; flowers, greenish-yellow, in dense terminal spikes. A Dipsad, native of Alghanistan, but not so handsome as M. longifolia. Sir Joseph Hooker notes M. betonicoides and M. polyphylla from Sikkim, as worthy of introduction, Phacelia campanularia, t. 6735, is closely allied to Whitlavia grandiflora, and is an annual that, from its deep blue bell-shaped flowers, is sure to be a favourite. It was introduced from South California by Mr. THOMYSON, of Ipswitch.

- LICUALA GRANDIS = PRITCHARDIA GRANDIS. -This comparatively recent introduction presents a handsome appearance in all stages of growth, and is destined as it gets dissemintaed to become more popular than its less favoured congeners. Although thirty species or thereabouts are known to science few have been introduced to cultivation. Generally they are of a low shrubby habit, but the present one, from the appearance of a fine specimen in the Palm-house at Kew, bids fair to attain more tree-like dimensions. The Palm in question has several feet of a stem, and has been flowering for some time. It was added to the Kew collection about eighteen months ago under the name of Pritchardia grandis, a provisional name given to it in Mr. Bull's nursery, and under which it is figured in the Gardeners' Chronicle, n. s., vol. i., fig. 89. The bold and striking habit is here shown off to advantage, but much smaller plants, or even seedlings of no great age are very effective for decorative purposes, and are finding their way into many private collections.

- CLIVIA NOBILIS .- In many private establishments plants of this class are more often treated with neglect than given the treatment they deserve. leathery deep green leaves and masses of pendulous flowers of C. nobilis will always recommend it where well grown. Possibly flower-scapes are less frequently produced in this than in the other species known, but the flowers in an individual umbel are far more numerous, and of an orange-scarlet colour, without the green tips to the perianth-segments so characteristic of C. Gardeni. Imantophyllum miniatum, referred here by the Genera Plantarum, doubtless surpasses it in the intense colour of several garden varieties, but the difference exhibited in the direction of the flowers of the two would warrant the desirability of cultivating both, and improving their respective merits. Imantophyllum Aitoni, figured in the Botanical Magazine, t. 2856, is synonymous with C. nobilis. In No. 5 house at Kew, where it generally flowers about this time, it receives no special treatment.

CRASSULA LACTEA.—This thoroughly useful species for winter flowering was sent to this country from the Cape of Good Hope by MASSON more than a century ago. It is a plant of the easiest cultivation, simply requiring a perfectly well-drained soil — old brick rubbish and loam do very well—and a not too plentful supply of water. Its shortly-stalked somewhat pyramidal panicles of white flowers are freely horne by plants in comparatively small pots during the dull winter months. Good specimens in flower are to be seen in the Succulent-house at Kew. C. lactea was figured in the Botanical Magazine, vol. xilii., t. 1771.

—— IONOSIDIUM ACAULE. — A few years ago Mr. BARRON made excellent use of this little Crucifer at Chiswick. When grown in pots it may be had in bloom almost at any time, and all it requires is a place near the glass in a cool house or cold frame. It was at the Horticultural Society that the species was first raised in this country, and the figure in the Botanical Register, vol. xxxii., t. 51, was prepared from a plant flowered at Chiswick. In the rockwork this tiny annual makes itself at home in damp places, and under favourable conditions reproduces itself freely from seeds. The flowers open white, and afterwards turn a clear lilac colour, and are borne above the small delicate green leaves. Ionopsidium acaule is only found in Portugal, and a nearly allied species, I. albiflorum, is found in Sicily.

- THE BOTANIC GARDEN AT DIJON, - This garden is turned to account, not only for purely botanical purposes, but as a trial-ground for ornamental plants. It thus confers a service on hortiwhile the gardener, finding his interests culture. served, looks all the more tolerantly on those depart-ments in which he is less immediately interested. Thus we find in this garden, not only illustrations of hotanical rarities, or illustrations for the use of the professor and his students, but long lines of plants bedded-out with a view to show what each plant can do, and what are its capabilities for garden purposes. Herbaceous plants and alpine plants, bedding plants in the restricted sense of the word, all are treated in the same fashion. The same plan is carried out with reference to trees, shruhs, and flowers suitable for growth in towns. Among these our attention was drawn to Morus Kæmpferi, a species with lanceolate shining leaves. The gardener has thus an opportunity of seeing what plants are at his disposal, and thus of avoiding, if he choose, that unintelligent monotony which is unfortunately the characteristic feature of so many gardens. The botanic gardens show that there is no poverty of material, the defect lies in routine imitation of others, and want of appreciation and enterprise. In this garden was once, as we have already had occasion to mention, a very complete collection of one thousand varieties of Vine, which must have been very instructive till the Vines were destroyed by the Vine-louse. Another instance of the practical spirit manifest in this garden is shown in the practice of grafting Sweet Chestnuts on the Oak. The Chestnut does not thrive on the limestone district around Dijon, preferring a saudy soil, but by grafting it upon the Oak it may be made to succeed. Of the large Black Poplar we have already spoken, but it may be useful to repeat that there is documentary evidence to show that it is 500 years old. It has a height of 40 metres, a circumference at the base of 12 metres, and of 8 metres at 2 metres above the soil. (A metre may be taken as about 11 yard.) The houses are

small, but contain good collections of succulents, Bromeliads, New Holland plants, Ferns, &c. Caladiums and Gloxinias are planted out in well-drained beds on the stages in the end of May, and are lifted in September. Treated in this manner, the growth and flowering are very satisfactory. The whole establishment, though only an unpretending provincial garden, and suffering from scanty funds, and from the effects of recent severe winters, shows on all sides signs of intelligent management, and of a practical spirit capable of providing for the requirements of science and the wants of horticulture and agriculture. M. Where, who has the superintendence of the garden, is also entrusted with the management of the town squares, the park, and a fruit tree nursery at some distance from the town.

STROBILANTHES ISOPHYLLUS .- As a useful winter-flowering plant this one can be utilised for cut flowers, or for the decoration of either stove or greenhouse, and flowers freely and regularly during great part of the winter. The old plants, if well cut back after flowering, will break evenly and flower abundantly for a number of seasons, and young well-flowered specimens can be obtained in one season from cuttings. Its appropriateness in this respect is shown by the great quantity to be seen during the winter months in the conservatory and several other of the houses at Kew. There is a figure of the species in the Botanical Magazine, 4363. Concerning the fertilisation of the flower, we are informed that there is an interesting phenomenon in connection with the stigma. When the anthers are about to shed their pollen the stigma becomes remarkably irritable, so that if touched by an insect entering the corolla it immediately bends downwards, and huries itself in a cushion of hairs on the lower side of the tube. Crossfertilisation is hereby effected, as the insect can now make its exit without dusting the stigma with pollen of the same flower.

— THE CRYSTAL PALACE COMPANY announce that a series of six horticultural exhibitions will be held at the Palace this year, the first of which—an exhibition of spring flowers—will take place on April 4 and 5. The first summer show will be held on May 23 and 24, and a Rose show on July 5. A grand Harvest Festival, with which will be incorporated the International Potato Exhibition, is fixed for October 7 to 11 inclusive; and on November 14 and 15 a show of Chrysanthemums and hardy decorative shrubs will complete the series.

— THE WEATHER,—General remarks on the temperature, rainfall, and duration of bright sunshine, for agricultural and sanitary purposes, during the week ending Jan. 14, 1884, issued by the Meteorological Office, London :—The weather has continued cloudy or dult in nearly all parts of the kingdom, though for brief intervals the clouds have dispersed. Rain has been much less prevalent than during last week. The temperature has again heen above the mean in all districts, the excess varying from 2° in the north of Scotland to as much as 6° over the east and west of Scotland, and north-east and central England. The maxima, which was high for the time of year, were generally registered on the 9th, and ranged from 50° in "Scotland, N.," to 55° in "England, N.E.," "Scotland, W.," and "Ireland, S. The minima were recorded at most stations on the 12th or 13th, and varied from 37° in the "Channel Islands," The rainfall has been about equal to the mean in "Scotland, N.," to 37° in the "Channel Islands," and "Scotland, E.," but considerably less in nearly all other districts. Eright sunshine has been more general than for some weeks past, although the percentages of possible duration are still small in most places; in the "Channel Islands," and "Scotland, E.," het percentages of possible duration are still small in most places; in the "Channel Islands," and "Scotland, E.," bet considerably less in nearly all other districts. Eright sunshine has been more general than for some weeks past, although the percentages of possible duration are still small in most places; in the "Channel Islands," and "Scotland, E.," the percentages of possible duration are still small in most places; in the "Channel Islands," and "Scotland, and over Scandinavia, and a few subsidiary disturbances over the United Kingdom. The wind has consequently varied between S.W. and N.W. over the whole country, and at all our northern and western stations has been fresh or strong in force.

— GARDENING APPOINTMENTS. — Mr. ALEX. TAIT, for many years Gardener to Lord TORPHICHEN, Calder House, Midlothian, as Gardener to General FEILDEN, C.M.G., M.P., Witton Park, Blackburn, Lancashire.—Mr. R. Bass, for the last five years Foreman at Knypersley, as successor to Mr. DOLBY, Gardener to R. HEATH, Esq., Biddulph Grange, Congleton.

NOTES ON NYMPHÆAS.

DURING the past summer the large collection of Nymphæas at Kew afforded a good opportunity for an attempt at hybridising some of them, with a view of raising some new forms, and if possible of infusing same of the colours of the tropical species into our hardy ones. So far as we know at present the results of the experiments are satisfactory, a good number of those flowers which were operated upon having produced good seeds, some of which have already germinated. Whether we have succeeded in crossing any of the kinds remains to be proved. The habit of closing their flowers during a portion of each day is a well known characteristic of Nymphæas, but it does not appear that any attention has been paid to this peculiarity as one of some importance in enabling us to classify the species and varieties of cultivated Nymphæas. So far as my observations enable me to judge there is a striking regularity in the opening and closing times of the flowers, and a wide difference in regard to the time this occurs in some of the species. It is a well known fact that N. alba, our native Water Lily, closes its flowers in the evening, and unfolds them again on the following morning. Precisely the same thing occurs with N albo-rosea, sometimes called N. sphærocarpa. N. odorata and N. tuberosa, both North American plants, are also night-closing species, opening their flowers again at sunrise the next morning. N. flava, the pretty yellow species, also a North American plant, N. flava, the exhibits the same peculiarity, and an experiment made with a view to testing whether light affected the opening of the flowers of this species, proved sufficiently reliable in its results to show that such was not the case. To this I shall refer again presently. The Old World species, N. Lotus, and its many varieties, open their flowers in the evening at dusk, and remain fully expanded during the whole night, closing again about noon on the following day. following are the details noted during a fortnight's observation of these plants, commencing Sept. 16:-

	6 A.M.	11 A.M.	2.30 P.M.	7 P. M.	11 30 P M.
N. Lotus var.	Open	Open	Closed	Closed	Орец
"", devoniensis.	11	Clos€ d	.,,	Open	19
,, ,, ,, Ortgies- iana . ,, ,, ,, Bouche-	- 11	Open	11	Closed '	11
ana	11	**	29	Open	**
,, ,, ,, rubra	"	Closed	19	71	>>

It is here shown that, so far at least as the time of opening their flowers is concerned, the whole of the above are related to each other. The age of some of the flowers of several of hose observed no doubt had something to do with the slight difference as to time of opening.

The stellata group bears some resemblance to our

The stellata group bears some resemblance to our native species and the North American ones in the time of opening and closing their flowers. Of those in flower at the time of observation the following table shows the result:

	6 A M.	II A. M.	2 30 P.M.	7 F.M.	11 30 P M.
N. stellata	Open	Open	Open	Closed	Closed
,, " var. cyanea	19	21	33	21	13
,, ,, capensis	19	17	Closed	21	
folia	**		Open	,,	,,
lor	Closed	11	32	13	11
ensis.	0	**	19	19	19
lea ,, ,, ,, × Dau-	Open		н	32	
benyana.	Closed	Closed	"	12	**

To this list might be added the Australian species, N. gigantea, which invariably opened its flowers in the morning, and closed them again at dusk.

It appeared to me that by gathering flowers of several of each group and reversing the conditions of light, some modification in the closing and opening of each might be the result. This, however, was not the case; flowers which under normal conditions opened in the evening remained closed all day when kept in total darkness, and expanded most beautifully at the usual time, even when exposed to brilliant gaslight. The same indifference to a change of light was exhibited by those of the stellata group, the flowers

remaining perfectly closed all night in a well-lighted room, and opening in the morning when kept in total darkness.

Whatever may be the purpose for which this closing and expanding of the flowers of Nymphæsa is intended, it appears very remarkable that while some should have this purpose served by opening in the daytime, others would appear to expand only during the night. So strange a modification of habit must be supposed to be due to a great alteration of conditions, and if the agency of insects or birds be requisite for the fertilisation of the flowers—which appears to me very likely—such a change in the expanding time must have been brought about by the absence of the proper agency in one circumstances, which resulted in earlier or later closing hours, whichever might be necessary to eatch the right customers for the honeyed liquid secreted in the cup of the flower.

The floral organs of Nymphæas appear to be constructed specially with a view to cross-fertilisation. When a new flower first opens, the stigmatic surface which lies in the cup formed by the surrounding petals and sepals is covered with nectar, which is clear like water and sweet to the taste. On the second day this has almost wholly evaporated, all that remains being a sticky substance about the stigmas, which is evidently intended to hold the pollen grains. The pollen of this flower is, however, not yet ripe, the anthers being closed, so that pollen from the same flower is apparently prevented from performing its functions. Meanwhile the stigma has become fertilised with pollen from another flower, and when the petals close in a second time several rows of abortive stamens bend over so as to completely cover and seal up the stigma. These stamens remain curved downwards until the flower decays. In one or two in-stances I noticed that pollen was ripe hefore the abortive stamens had covered over the stigma, so that self-fertilisation was possible; but the rule appears to be an arrangement for cross-fertilisation, is above stated. I was unable to fertilise several flowers of N. zanzibarensis, owing to there being no ripe pollen at the time the stigma was prepared to receive it. By saving pollen until a second flower opened, this difficulty was overcome.

As it seemed possible that when the flowers sank below the surface of the water—as most of them do soon after closing—the pollen might be lifted from the stigma, and float to the surface, I tried some pollen in a tub of water to test its sinking capacity. It immediately sank to the bottom, and remained there. Here we have a remarkable arrangement, which prevents currents of water, in which the plants might be growing, from interfering with the process of fertilisation.

fertilisation.

In watching the germination of some seeds of Nymphæa sown a month ago I was struck by the unsual process of development, which appears to be wholly unlike that of any other dicotyledonous plant, resembling, on the contrary, very closely, some of the monocotyledons. I have sketched several germinating seeds, to show the development of the embryo, and the very singular arrangement of the cotyledons, or, as it appears to be, cotyledon. In turning to Dr. Lindley's observations on Nymphæaceæl find that the germination of Nymphæas has been referred to by some authors as evidence of their proper position being with endogens rather than exogens. The accompanying figures (fig. 17, p. 89), show a structure decidedly analogous to that of germinatiog seeds of exogens. Further observation will be necessary before we can come to any conclusion with regard to the question, as to whether the characters of the seedlings of Nymphæa are those of a monocotyledon, rather than of a dicotyledon, as generally supposed. [This question is pretty well settled; see Henfrey's Elementary Course, ed. 3 (1878), p. 202. Ed.]. W. Watson, Kew.

BOWENIA SPECTABILIS.—A female plant of this beautiful Cycad, as well as several others, may be seen in cone in the Palm-house, Kew. Although of considerable interest this fruiting condition adds no material ornament to a plant already sufficiently handsome to merit a place in any collection of stove plants. The broad bipinnate leaves is a feature altogether unique in this order, and more resembles a Fern than a Cycad. Generically it is closely allied to the Zamias, and those genera bearing two seeds on the underside pelitate scales of the female cone. The style-like prolongation of the micropyle is here rather prominent a character more or less conspicuous in the Cycads, inducing some authorities to consider the seeds enclosed in an ovary, whereas they are naked. There is a figure of the plant in the Botanical Magazine, t. 5398, and in the same work, t. 6008, is another figure of the seed-bearing form.

Home Correspondence.

Anemones and Christmas Roses,—These go well together, as they are of the same general form and appearance, and the Anemones help to show off the Hellehore flowers by their brightness and rich variety of colour. Christmas Roses are usually plentiful at this season, as it is their natural time of blooming, and Anemones might be had at the same period if seed were only sown annually on some warm sunny border, where, if the soil be light and dry, they flower freely all through the autumn and winter when the weather is mild, and though checked, they seem little affected by frost, as last year we had blooms uninjured peeping up through the snow, and the same plants are now full of buds and blossom again. The way we manage is to dig and enrich the soil by working in a good dressing of decayed leaves and dung, and after raking the surface the seed is sown in drills a foot or so apart, where it is dropped in patches about the same distance asunder, and when the young plants are up they are thinned out, and only two or three left standing in a place, after which they grow rapidly, and soon spread and begin to show flower. The time to sow is about the middle or ead of March, but if the ground is not then in good order it is better to wait, as the seed may lie wet and rot. Jr. S.

Iris rectulata var, cyanea,—This variety (see p. 57) was first described by Dr. E. Regel in the Gartenflora, 1874 (vol. xxiv. p. 162, tab. 797). from specimens sent from my establishment. These were received there by the kindness of M. Boissier as Iris histrio. These two forms are to be considered as synonyms, and if there is a difference between the specimens cultivated, the reason of it may be found in the raising of seedlings. As to the earliness of the different forms of reticulata, it seems to be difficult to give a rule, and it depends probably upon difference of treatment, and upon the origin of the planted bulbs. Dr. Regel (l. c.) states that all flowers of I. reticulata open about the same time, and I suppose this is quite true if they are found in the same conditions, especially in the wild state. Bulbs introduced from the South flower much earlier the first year than subsequently, when they are cultivated on the open ground. J. H. Krelage, Haarlem, Jan. 14.

The Floral Committee—In the leader (p. 52) on the Floral Committee, and its division into two sections, you mention my being "President of the whole;" will you allow me space to say that I had oo hand in the division? George F. Wilson, Heather Bank, Weybridge Heath, Jan. 12.

Rose Stocks.—At p. 51 your correspondent, "T.S. C.," witting of Rose stocks, says of Manetti cuttings: "Cat them into lengths of 9 inches, taking care to remove all the buds on the lower half," We raise many thousands of Manetti stocks here annually, and have tried both ways. We, however, find that the cuttings root much more freely when planted without any of the buds being removed, that is the experience of other growers? Charles Daniels, Town Close Nurseries, Norveich, Jan. 14.

Early Potting of Lilies.—Reading early in the winter of advice to pot up auratum bulbs in the autumn rather than keeping them in the old dry soil and potting in the spring, I so shifted a seedling bulb that bloomed for the first time last year, transferring it with its fleshy tootlets from a 48 into a 24. The pot with its bulb was kept in a cool house, and the soil fairly moist. Curious to discover whether, whilst in its apparently dormant condition it had been making roots, after having been several weeks potted, I the other day turned the soil out and found that roots had been made freely, and these had already a length of from 2 to 3 inches, following the conformation of the pot, thus showing that they were really made since the potting. This fact may not be new to some cultivators of Lilies, but it is to many, and it strikingly proves the value of autumn potting of the bulbs. It is further a fact that although no evidence of upward growth is to be seen, the bulb has materially enlarged since it was reported. E. [The fact of Lilies making root growth under the conditions described by "E." is well known to experienced Lily growers, but every one does not know that the best time to repot Lilies is within a week or two of the stems having completely died down. Ed.]

Pears Doyenné d'Alençon and Easter Beurré, —I can endorse Mr. Bunyard's remarks respecting the distinctness of these Pears. While employed under my father, the late Mr. John Powell, at Frogmore, I grafted several trees that were headed down, amongst them some Easter Beurrés (the fruits of which nearly always cracked) with Doyenné d'Alençon, which did

well and formed fruit-huds on the young growth, bearing a good crop of fruit the next season, and I believe the trees are still hearing well. I consider the Doyenné d'Alençon one of the best late Pears in cultivation. J. H. Powell, Woodgate, Farnham Royal.

Late Flowering Chrysanthemums.—Your correspondent, Mr. Rust, asks (p. 23) for the names of any good January Chrysanthemums besides those he mentions, I enclose blossoms of Peter the Great and Empress Eugleoie grown out-of-doors in a sheltered position against a wall. C. M. Owen, Knockmullen, Gorey, Ireland.

Bromeliads are not much grown in England, but are much appreciated in Belgium, France, and Germany. In many respects they resemble Orchids-namely, in being epiphytes, like most of the Orchids, and requiring the same treatment; the flowers of a great many of them are splendidly coloured, and last, but not least, the plants are very easily cultivated. Here we have a lot of them hung up near the glass, where they feel quite at home; another lot is standing on a beach oear the glass, which are as good as can be; and for want of room we were compelled to put another lot beneath the bench, and these, too, are all right. Last year I put a Bromeliad on a place where the condensed water from the glass roof dropped down, and in consequence the plant was throughout the winter soaked with water, but it always looked as fresh and healthy as the others. I do not advise treatment of this kind; I mention it only to show that Eromeliads are by no means particular as to treatment. For want of room we have but a small collection, about sixty different species, but we are never without flowers. When one ceases another starts flowering, and this keeps on throughout the year. At present we have about half a dozen flowering, and some more showing bloom. Amongst those flowering and some more showing bloom, amongst those flowering are Bilbergia nutans, Baraquini, and Windix. These are not so showy as, for instance, Bilbergia splendida, A'Echmea Weilbachi, Tillandsia Lindeni, and others, but very interesting, as Bilbergia Windix is one of the first hybrid Bromeliads raised in gardens. Bilbergia nutans and Baraquini are its parents, so that we have a whole family in flower—father, mother, and offspring. The leaves and general habit of B. Windi is that of Baraquini, while the flowers more resemble those of nutans. C. Wissenbach, Royal Gardens, Wilhelmshöhe, mear Cassel, Germany.

Old Kinds of Peas.—Would not "Diss" have been more correct had he inquired whether Knight's Dwarf Marrow Pea is in existence in any shape rather than to have assumed that some one was making it perform an act of trade deceit. I cannot answer for other seed lists, but in that of Messrs. James Carter & Co. I note that both Knight's Dwarf White and Green Marrows are offered with over too other kinds, so that it is evident that bouse finds new and distinct kinds sufficiently abundant without renaming old sorts as novelties, New and distinct Peas crop upas fast as do new kinds of Potatos, and in the race old ones die out. Old gardeners naturally cling to the favourites of their youth, younger men swear by the novelties. It is just as well in this small matter, as well as in greater ones, to remember that there is always as good fish in the sea as ever came out of it. A. D.

Sweet William Fungus.—The Puccinia infecting Sweet William Is by no means uncommon. I have specimens from Hertfordshire, and it has occurred near here in two localities during the past year. It is a true Leptopuccinia. The teleutospores germinate as soon as they are mature, and like those of P. buxi and P. malvacearum, are unaccompanied by zecido or uredospores. P. dianthi is remarkahle, however, as being exceptional in the fact that its promyceilal spores do not bore through the eticle of its host plant, but enter through the stomata. De Bary gives three figures of them doing this. Sown on the totyledons and healthy leaves of Dianthus barbatus on June 21, De Bary found in the experiment that the perfect Puccinia was produced by olly 7. He also found these bodies, when placed upon Silene inflata and Lychnis diurna, produced no effect. This seems to indicate that the Puccinia on Dianthus barbatus, although so closely resembling the Funcinia upon Lychois and Silene, is specifically distinct, although Winter groups them all under the oam P. arenarie. It is very remarkable that the germ-tube of the promycelial spores of this fungus should be the only known exception to the rule that the promycelial spores of this fungus should be the only known exception to the rule that the promycelial germ tube bores its way through the cuticle; but Deary is quite certain upon this point, and 1 do not venture to differ from him, although from some observations I made in 1852 and 1853 I certainly thought I saw one or two instances of penetration. Respecting the infection of young seedling with P. malvacearum, I last year tried to see this. I planted in a pot plunged in the ground out-of-doors seeds of

^{*} De Bary, Champignons Parasites, Annales des Sciences Naturelles, 4 series, vol. xx., pl. 12, fig 7.

Malva sylvestris, and also of Hollyhock, most of which were badly affected with the Puccinia. Healthy seedlings only came up, and it was not until they had grown into good-sized pots 3 or 4 inches high that they became affected with the disease. No doubt in the instance alluded to in last week's Cardeners' Chronicle, if the first diseased seedlings had been pulled up and burnt the rest would have escaped the disease. Charles B. Plowright. 7, King Street, King's Lynn, Yan. 14.

Crocus Imperatonius.—Amongst hardy bulbous plants that will bloom at this time of the year naturally in a cool greenhouse or frame few are more pleasing than is this Crocus. Corms need to get so well established in 48-sized pots that there shall be a good bunch of stems to produce flowers. I have just been blooming a couple of such pots, each producing

it has had to give way to such sorts as Duchess of Oldenburg, Warner's King, and Golden Nugget. The Eve Apple is still to the fore, and although small, as your correspondent says, it possesses a flavour which, so far as I know, is unique, and which renders it so tempting as to have given it the name which it bears, to remind us of our common ancestor's weakness for the fruit. Speaking about permanent labels, I see copper wire recommended for hanging zinc labels to the trees. Thin tar twine is much better, as the copper-wire sets up a galvanic action with the zinc, and very rapidly eats its way through the label. A. H. Pearson, Chilwell, Notts.

Jasminum nudiflorum.—This wioter-flowering plant is generally seen trained up the sides of houses or tled to pillars, but just lately I have met with it put to quite a fresh use, as at a place I passed the



Fig. 17.—GERMINATION OF NYMPH.EA: 1, 2, 3, N. STELLATA; 4, N. LOTUS.

a dozen blooms, all so charming and, as compared with the common forms of Crocus, so refined and pleasing. When neither Snowdrops nor Siberian Squills, the earliest of our outdoor bulbs, are yet in flower, it is something to be proud of to have this lovely Crocus flowering so beautifully, and with absolutely no trouble. Every good gardener should get a dozen pots of this bulb for the delight of his employers. Nothing could give less trouble, as the roots seem impatient of shifting, and will do well if kept from the worms, and provided with a slight top-dressing for two or three years in the same pots. A. D.

The American Summering Apple,—Your correspondent, Mr. Woodford, writing about this Apple, calls it a table Apple. I am inclined to think that the variety be knows can hardly be the same as the old American Summering, which has been grown here for fifty years, and which, although a useful early Apple, is only fit for cooking; even in that capacity

other day I saw fine specimens of it in the shrubbery borders, where it was supported by having old pollard heads to grow on, which the Jasminum had clothed completely, and was in full beauty. Planted, and left to itself, a more showy or elegant object could not well he imagined, as there was no stiffness, for every twiggy shoot was flowing out, and hanging down in the most natural and graceful manner, which quite arrested attention. Except on redbricked houses, the blossoms of this Jasmine do not show off to advantage, but in the borders referred to, with dark-leaved evergreens to back the plants up, the numerous flowers looked particularly bright, and were conspicuous from quite a long distance. 3. Sheppard.

Phylloxera Laws in the Netherlands, — The laws and regulations which are the result of the adhesion of the Government of the Netherlands to the Berne Phylloxera Convention of 1851 have been published and brought into execution. The adhesion was sanc-

tioned by the King of the Netherlands on December 6 last, and was published on December 21, 1883, in the Dutch Mackibdal, No. 178, and in the Dutch Staats and was published on December 21, 1883, No. 300. In the same number is to be found the law which authorises the execution by Royal decree, which was also published in the Staatsblad, No. 181, of the same date. The Royal decree setting forth the modeof execution of the law was executed by the King of the Netherlands on December 24 last, and was published on December 29 in the Staatsblad, No. 248, and in the Staats Courant of the same date, No. 306. The terms of this Royal decree are in general those of the Convention of Berne itself. In article 2 is set forth what can be sent free into and through the Netherlands without special formalities from those who sent them out—among them cut flowers, vegetables (fresh and dried), flower roots, seeds, and fruits of all kinds. By article 3 the introduction and transit of Vines is forbidden from countries where Phyllovera exists. Vines from countries not infested may be introduced by special permission of the Minister of Commerce and Industry. In article 5 the frontier offices through which living plants, &c., other than Vines, can be introduced under the proscribed formalities are stated to be:—Amsterdam, Rotterdam, Dordrecht, Flushing, and Harlingen, as well as sundry specified towns in the interior, with the railways at all the depôts. The method of packing and the necessary documents are those prescribed by the Convention, and which are not covered by the prescribed declarations, must be inspected by some of the experts designated by the Minister, at the cost of the receiver. Article 7 says that if the goods presented at the frontiers are not treated conformably to the foregoing article they will be destroyed. The experts have been appointed by the Minister, and everything is now done in this country to found infested by Phylloxera they will be destroyed. The experts have been appointed by the Minister, and everythin

Growing Hyacinths in Glasses — A New Method.—If anything can be said to be cruel in the vegetable world, it is to expect a spleodid sweet-scented Ityacinths-spike when the roots have to live on nothing but pure water. It is unnatural, and the surprise is the custom has existed so long. This year I resolved to try a different plan. I filled the Hyacinth glasses with drift sand, which contained a small fraction of vegetable refuse, but not enough either to decompose or produce any disagreeable odour. I poured on just as much cooled boiled water as the sand and some vegetable fibre could retain, leaving room for the bulb at the top. Boiling the water is necessary, as it renders it pure; and the glass not being porous, there is no evaporation, and no further water will be required for a long time. So far the result has astonished me. Instead of a puny delicate spike, long drooping foliage, and a flower-stalk unable to support the head, the blooms promise to be monsters, and to be at least second class again next year, and splendidly vigorous. W. T. Murphy, Clonmel.

wigorous. W. 7. Murphy, Clonmel.

Mr. Smith's Experiments on the Filtering Power of Sand.—I congratulate Mr. Smith upon having taken the trouble to put this matter to the test of actual experiment, for there is nothing so convincing as the logic of fact; but I cannot help feeling that if he will only continue his observations he will become before he has done with this subject as firm a believer in the value of Mr. Jensen's system of high-moulding as I am. Mr. Smith has prepared the proper apparatus for observing the faculty damp sand has of retaining the spores contained in water that is allowed to percolate through it, but he has fallen into an error in manipulation which has led him to form an incorrect conclusion. If, however, he will repeat his filtration experiment with the same glass cylinder, but instead of pouring the fluid a few drops at a time, he will find that with much less than 6 inches of sand every one of the spores will be retained in it. The best way to test the spore-retaining power of this column of sand is, after the tube has had the requisite quantity of sand placed in it, to pour a small quantity of water in first, and allow this to run through before the experiment is commenced. By doing this the uniform distribution of the sand is ensured for one thing, and the water which subsequently passes through drops out at the bottom clear and free from any muddiness for another. The intention of the experiment is to simulate what actually happens in a state of Nature, where it is obvious the first shower of rain consolidates the surface of the soil after it has been broken up by the spade of the gardener. This settling or consolidation of the land invariably takes

place in the Potato field, and therefore if we wish to produce the same effect in our experiment we must make some allowance for it. The important point, however, is to pour into the filter the water we are using slowly drop by drop, just as the rain falls. The quantity of water charged with Ustilago spores used by Mr. Smith was a teaspoonful. Of course teaspoons vary quantity of water charged with Ustilago spores used by Mr. Smith was a teaspoonful. Of course teaspoons vary in size, but it is generally considered that a teaspoon ful of water contains 60 minims. I find, however, that the average teaspoon holds double this quantity, namely, 120 minims ; 120 minims of water poured into a glass tube half an inch in diameter forms a column of water ruther more than 2 inches bigh, or about one-third the bulk of the filter-bed of sand employed by Mr. Smith in his experiment, which ran employed by Mr. Smith in his experiment, which ran employed by Mr. Smith in his experiment, which ran employed by Mr. Smith in his experiment, which ran alarge volume of water is poured upon such a comparatively small quantity of sand it is obvious that the tube would contain a pretty uniform mixture of sand, spores, and water. In Nature we never practically meet with such a circumstance—rain does not fall in sheets 2 inches thick, unless from a water-spout. On the contrary, it must be an extraordinarily heavy shower in which 1 inch of rain falls in an hour, so that to obtain a correct idea of what happens in Nature we must pour the water into our tube a few drops at a time just as the rain falls. One minim per minute ted fall into a half-inch tube evices 14 inch in the hour we must pour the water into our tube a few drops at a time just as the rain falls. One minim per minute let fall into a half-inch tube gives 1½ inch io the hour—an unprecedented rainfall, but one which is totally insufficient to wash Ustilago spores through 3 inches of sand; at least, so I find upon experiment. It may be suggested that water falling at this rate—a drop per minute—each drop will soak away as it falls upon the sand, and so have no chance of washing the spores through; but then it must be remembered the object of our experiment is, not to see if we can wash the through; but then it must be remembered the object of our experiment is, not to see if we can wash the spores through so much sand, but to represent what takes place in Nature. Mr. Smith suggests that while some of the spores may have been retained in the sand in his experiment they would only be there waiting for the next shower to wash them further down. But what happens to spores laid in damp situations? They certainly in the course of a few hours germinate, and as certainly verified for want of a more riddus to and as certainly perish for want of a proper pidus to grow in. Charles B. Plowright, 7, King Street, King's Lynn, Jan. 14.

Chrysanthemum Meg Merrilies. - My obchrysanthemum Meg Merrines, — My objections to this and certain other large loose flowered Japanese Chrysanthemums, made just at the end of the year, were so clearly meant to apply to them solely as show flowers, that I marvel that "Wild Rose" or any one else should assume that they were directed against them as ordinary winter flowers. There is no connection between the two things, There is no connection between the two things, because flowers grown for exhibition not only have a short existence, but have absolutely no fitness for long winter keeping; indeed for this latter purpose it is well to remove all the earlier, and of course stronger buds, and leave only the smaller and later ones to produce bloom at and after Christmas. Not only is Meg Merrilles good for this purpose, but so are Fair Maid of Guernsey, Ethel, Baronne de Prailly, and some others that are not of the first-class on the show table. Probably it is the general experience that the looser and least densely petalled flowers endure longest when grown for late blooming. X.

Bramble Shoots,-Lithospermum purpureo-Bramble Shoots,—Lithospermum purpureo-cecruleum,—We Cheshire farmers know only too well the habit the common Bramble has of root-ing at the ends of its long shoots, and that in shady damp places these roots begin to grow before the shoot touches the ground. If a brambley hedge is neglected for several years, a Blackberry copse, extending several yards into the field, is formed along it by this habit of the plant. But I am writing to draw attention to a precisely similar habit in a rare British herbaceous plant, I thespergrup purpurse consulern which is found on Lithospermum purpure-occurileum, which is found on heigh. This plant makes purjuh shoots of 2 feet or more in height, with thick terminal tufts of leaves, which in autumn form roots beneath them, even which in attumn form roots beneath them, even before the stalk bends over sufficiently for them to touch the ground, when they at once establish a new plant. The old herbaceous base lives, and grows up pagain, but the connecting stalk dies, and does not root from the leaf axils, it laid, as many stalks do. Somewhat analogous is the viviparous habit of Cardamine pratensis, which makes new plants from the shed lobes of the leaves. L. purpureo-corruleum is well worth cultivating if it can be persuaded to flower freely, the flowers being produced in large bunches, in colour darker than, but nearly as rich as those of the better known L. prostratum. I find it best to cut down the stalks at the end of summer, before the shoots root. C. Wolley Ded, Llandudno, Jan. 14.

Mildness of the Season .- As numerous in stances of the mildness of this remarkable winter are being recorded, perhaps the enclosed buds of Pears and blossom, taken from a standard tree in the gardens here, of Summer Franc Real, with spray of Laburnum in flower and leaf in the middle of January, Ladurium in Hower and leat in the middle of January, may be considered worthy of notice also. In taking a retrospective view of the season, it seems marvellous to think that Christmas has come and gone, and that we are in the middle of January with perpetual and other Roses still flowering on a continuation of last year's growth. It is much to be desired that a change to cold weather may set in soon,

obstruct that a change to cold weather may set in soon, otherwise hardy fruit blossom will stand a poor chance to set their fruits for the present year's crop. John Webster, Gordon Castle, Jan. 14.

—The Roses sent speak for themselves as to the mildness of the winter, even at this bracing place. Arthur Booky, Rose Villa Nurseries, High Harrosate, Jan. 14. [They were very sweet and nice. ED.]

Origin of the British Queen Pea.—I note the enquiry at p. 61 as to the above. The facts of the case are as follows:—About the year 1845 a gentleman in Jersey received a box of Ooions from Spalin, and amongst them were a few Peas scattered about in be box. Being exceptionally large he sawed them, and gave my grandfather (the late Mr. B. J. Saunders, of Jersey), the result of his first sowing. My grandfather thought very highly of the Pea, and grew it on until he had a fair stock, when he sold a quantity to Messrs. Lawson, of Edinburgh, and Messrs. Cormack, of New Cross, London, under the name of St. Peter's Marrow. Both these firms, however, sent the Pea out again under different names—Messrs. Lawson calling it Saunders' St. Helier's Marrow, and Messrs. Cormack selling it as British Queen, by which name it has since been best known. There is no doubt, however, that it has several names even now, and, like it has since been best known. There is no doubt, however, that it has several names even now, and, like many other really good things, it has been christened a good many times. Edmund A. Saunders, The Old Nurseries, Abergavenny. [The Messrs. Lawson, in the supplement to their Agriculturis' Manual, published 1842, mention St. Helier's Wrinkled Marrow as a new variety then, and no doubt it is the same variety as Mr. Saunders meotions. Ed.

Colonel Clarke's Celery.—If your correspondent, J. S.," will procure some seed of the Leicester Red "J. S.," will procure some seed of the Leicester Reed Celery (true), and will send me his address, I will send him a pinch of ours. He will find that they are not the same. How they became confused would eotail a curious story, which I do not choose to rake up. R. T. Clarke, Walton Place, Daventry. The varieties in question are frequently quoted as synonymous, on the strength of a trial at Chiswick a few years ago, and if this is erroneous it would be well if the matter were cleared up. Ed.]

Peports of Societies.

Edinburgh Botanical: Jan. 10.—William B. Boyd, President, in the chair. The Society met at 5. St. Andrew's Square. The following communications

Boyd, President, in the chair. The Society met at 5, St. Andrew's Square. The following communications were read:—

I. "Obituary Notice of the late Professor Oswald Heer, Honorary Fellow," by Andrew Taylor.

II. "On the Common Lupin as a Fodder Plant in Orkney," by William Traill, Esq., M.D., of Woodwick, St. Andrew's. Mr. Taylor read the following letter from Dr. Traill:—

"When taking a walk last September, about a mile to the eastward of the Manse of Sandwick, in the west mainland of Orkney, I was a good deal surprised to come upon a large quantity of the common blue Lupin of our gardens—Lupinus perennis, I believe; about 3 acres of ground were thickly covered with it, but scattered plants extended to a much greater distance; the plants were 2 or 3 feet high, and most of them were covered with ripe seeds; the soil they grew in appeared a thin yellowish loam, mixed with small angular pieces of flagstone, and partially covered with tufts of Heather. On inquiry I found that it was known that the plant had secaped from a garden in the neighbourhood a good many years ago. I observed that in parts where it had been long growing, the tufts of Heather had disappeared, and were replaced by a thin covering of grass. I understand that cattle are partial to this plant, and I observed a cow eagerly cropping it while I was there. I believe this is not the only instance of the Lupin becoming naturalised in Scotland, but it appeared to me to be sufficiently interesting to bring to the notice of the Society, more especially as it seems to be a useful kind of fodder to introduce on waste ground, where hardly anything else will grow."

else will grow,"

III. "Report on Temperature and Vegetation in the
Garden of the Royal Botanic Institution of Glasgow,
from August to December, 1883," by Mr. Robert Bullen,

Curator, August—The highest readings of the thermometer in the shade were 68° on the 3d and 25th respectively. The night temperature varied from 4° to 55° . The fine weather experienced during the early part of the month caused active growth amongst outdoor plants generally. Herbaccous plants, which up to this time were from two to three weeks behind their usual blooming season, now rapidly developed bloom. Heavy rains began to fall

about the middle of the month, and the weather continued more or less broken to the end,

tinued more or less broken to the end.

September.—The highest day temperature was 67°, on
the 3d; the lowest night temperature 32°, on the 30th.
The lowest reading for September last year was 31°,
during the night of the 29th. This month may be characterised as having been most unfavourable for outdoor
operations; rain fell heavily on fourteen days, and although
the average temperature compares favourably with the same
month last year, the excessive moisture and consequent
dull weather presented the timening of many annual and

the average temperature compares favourably with the same month hast year, the excessive moisture and consequent dull weather prevented the ripening of many annual and other seeds which are usually gathered in the garden. The blooming season of both herbaceous plants and annuals was a prolonged on the processing the month were 32°, on the ment were 32°, on the garden. The lowest temperature registered during the month were 32°, on the 2nd; the highest 63°, on the contract of the month; this, taken together with the dull, moist weather which prevailed, prolonged the fall of the leaf considerably, and in some cases caused a second or primitive growth; this was especially so with Rhododendrous which had falled to set bloom-buds. The season is open and favourable for transplanting operations. November.—The highest day temperatures recorded during the month were 49° on the 1st, 2d, and 4th, and 52° on the 3d, and 47°, 48°, and 50° on the 28th, and 24°, or 8° of frost, on the night of the 1st hand 13th, or 11° of frost each night, and 24°, or 8° of frost, on the night of the 1st hand to the 1st hand to the contract of the first week of the month until within the last four or five days the weather has been exceedingly unsettled, and transplanting operations had to be entirely suspended.

teen times, and the total of frost recorded 53\(^2\), or 8\(^2\) less than the total for November last year, when the frost was more continuous, but never below \(^2\) at any time. Since the first week of the month until within the last four or five days the weather has been exceedingly unsettled, and transplanting operations had to be entirely suspended, owing to the frequent and shed vote in dry or slightly frosty weather if due care be taken when filling in the soil to keep the frozen portions on the surface. The dense fog which enveloped this district on the 12th and 13th proved fatal to a number of immature buds of various tender flowering plants.

December—The May-like weather which was experienced showed its effects on most of the hardy and early forms of vegetation, causing the buds of decidious shrubs to swell and premature & the surface of the form of the form of the hardy and early forms of vegetation, causing the buds of decidious shrubs to swell and premature & the surface of the form of the hardy and early forms of vegetation, causing the buds of decidious shrubs to swell and premature & the surface of the hardy and early forms of vegetation, easing the buds of decidious shrubs to swell and premature & the surface of the hardy and early to the surface of the

Notwithstanding the extreme mildness of the season none of the spring flowering plants, whose dates of flowering are annually recorded to this Society are yet in bloom, with the exception of Tussilago fragrans, which opened on December 26 this season, and on January 15 last season; and Dondia epipacits, which began to flower on December 29 this season, and on Pebruary 6 last season; both of these plants, however, are somewhat erratic in their time of flowering, and ought to be struck off the list of spring flowering plants. The Snowdrop, the winter Aconite and Crocus are fast pushing up above ground; but it will be some time, even should the present favourable weather continue, before they are in flower. The Snowdrop opened on January 25 last season, and the winter Aconite on the 27th. To all appearance they will be no earlier this essason. Daphne Mezerceum and Rbododendron attravirens have frequently been in flower by the end of the Notwithstanding the extreme mildness of the season

year; this season they are only in bud. What we have in a remarkable degree this season is a large number of summer and autumn blooming plants with theher they for flowering profitoes of the midness of the season are very conspicuous in the case of the Bay Laurel, which have flower-buds already advanced, the usual time of flowering being April and May; also Ribes sanguineum with much swollen leaf-buds; Roses with young shoots 2 to 4 inches in length. Amongst herbaceous plants, Ferulas, Heracleum, Orobus, and Sisyrinchium are well stard into growth.

The severe storm of wind of December 11 and 12.

Interaction, Olious, and issyntantial and 12, which did so much damage throughout the country, passed over fortunately without doing the slightest damage in the garden.

On the rock garden eight species came into flower duning the month of December, viz., Andromeda floribunda, Helleborns niger angustifolius, H. abschasicus, H. purpurascens, Dondia epipacuis, Hepatica angulosa, Primula denticulata, P. platypetala, making a total for the past year of 905 species and well-marked varieties. Since the New Year came in the thermometer has been ntwo mornings below the freezing point: on the 1st, 1° of frost, and on the 4th, 9°. The following fitty-three species of plants in flower were gathered out-of-doors in the garden to-day, viz.:—

Alnus glutinosa Alchemilla conjuncta Alchemilla conjuocta Arabis procurreos Aster Reevesii Aubrietia deltoidea Calluoa vulgaris varieties Capsella bursa-pastoris Cheiranthus Cheiri Chrysaothemum sincose Corylus Avellana Erica herbacea alba n, hyberoica Garrya elliptica Geum aureum n, coccioeum

- Helleborus niger
 , coccioeum
 Helleborus niger
 , , adgustifolius
 , altifolius
 , altifolius
 , altifolius
 , purpurasceos
 , minor
 , major
 , viridis
 orientalis
- orientalis Hepatica angulosa ,, triloba and varieties

Heracleum giganteum
Helichrysum Stæchas
Iberis superba
Jasmioum nudiflorum
Lamium album
, purpureum
Matbiola iocana
Primula acaulis and varieties
, elatior
, Auricula
, denticulata
Polygala Chamæbuxus
Peroettya angustifolia

Polygala Chamabuxus Pernettya angustifolia Rosa hybrid perpetual , Chinese Ruta graveolens Schizostylis coccinea Sedum spurium Stellaria media Symphytum cancasicum Veronica Buxbaumi , rupestris
Tussilago fragraos
Senecio pulcher
,, vulgaris
Viola tricolor

V. Professor Dickson gave a microscopic demonstration of the structure of the pitcher in the seedling of Nepenthes, as compared with that in the adult plant.

Nepenthes, as compared with that in the admit plant, VI. Miscellaneous communications: ——

1. Mr. Patrick Geddes, on behalf of A. G. More, Esq., Dublin, exhibited and presented to the Royal Botanic Garden a living plant of Selaginella lepidophylla.

2. Mr. George L. Brown exhibited a flower of Tritleia uniflora, obtained that day from his garden, Millburn House, Morningeide.

3. Mr. A. B. Heert sent a living plant of a fine dark form of Primula scaulis.

Manchester Horticultural Improvement: Manchester Horticultural Improvement: 7an. 10.—At the fortnightly meeting, beld in the Old Town Hall, on the above date, Mr. Eruce Findlay in the chair, Mr. F. Robinson read a paper on the Tulip. After alluding to the well-known history of the plant, and the enormous prices formerly paid for them, Mr. Robinson said that as late as the year 1854 Mr. Groom, of Clapham, catalogued show Tulips at enormous prices; Duchess of Cambridge, Princes Mary of Cambridge, and Miss Eliza Seymour, were sold at 100 guiness each; others at fifty, twenty-one, and ten

Mary of Cambridge, and Miss Eliza Seymour, were soid at rog guineas each; others at fifty, twenty-one, and ten guineas per bulb. In the following year, 1855, the whole of Mr. Groom's collection, which consisted of over 200,000 bulbs, was sold by auction, as they stood in the rows, at very low prices, and from this time the Tulip, as a show flower, declined in the public favour at a rapid

rate. Mr. Robinson described the different sections of the late or show-blooming varieties, viz., bizarres, byblemens, roses, and breeders, the three first being again divided into the feathered and flamed forms. The soil needed, the planting time, and the treatment were fully and clearly stated; and he next passed on to the early blooming the planting time, and the treatment were fully and clearly stated; and he next passed on to the early blooming sorts—those mostly used for the decoration of our greenhouses and conservatories, as well to the broad stretches of beds to be seen in the spring in public parks and private gardens, where they are grown in masses in the flower beds. An approximate estimate of the numbers sent from Helland approximate for the therefore services the conditions of the leading services. vate gardens, where they are grown in masses in the flower beds. An approximate estimate of the numbers sent from Holland annually of a few of the leading sorts would be about as follows:—Scarlet Due van Thol, 800,000; White Pottebakker, 300,000; Golden Prince, 500,000; White Queen Victoria, 500,000; and Thomas Moore, 100,000. The total number of flowering bulbs of the Tulip yearly exported by the Datch florists amounts to over a thorogonal to a warrier of vallet of the training of the training only about one-tenth the value of a new Hyacinth. The reason for this difference is that it would take fifty years to get up a stock large enough to send out; while with a Hyacinth, which multiplies rapidly, the same results could be produced in ten years.

In the discussion which followed much light was thrown upon the manner in which the new bulbs were reproduced. For in planting the bulbs in autumn and growth taking place in the spring the flower-stem is plainly observed rising from the centre of the bulb, but when the bulbs are taken up after flower the flower-stem is on the outside of the one taken from the ground. A process has gone on all through the growing season by

which the nutriment first taken up by the roots and passed through the leaves, and receiving fresh naterial from the air, is again passed down the leaves and deposited at the base of the flower-stem, and gradually built up into a new flowering bulb for the following season. Mr. G. Lunt, Mr. Astley, Mr. Tait, Mr. Findlay, and the Hon. Secretary (Mr. W. Swan) took part in the discussion.

It was announced that Mr. B. Findlay would give his paper on the next meeting night, January 24; subject, "A plant: what is it?"

Scottish Hortlcultural Association. Scottish Hortleultural Association. — The ordinary monthly meeting of this Association was held in the Hall, 5, St. Andrew's Square, on Tuesday, the 8th inst., Mr. R. Munro, President, in the chair. Dr. J. M. Macfariane, of the Royal Botanic Garden, lectured on "The changes occurring in the ovule after pollination." His remarks were illustrated by a series of diagrams. Mr. Adam Renton, Lees, Coldstream, exhibited Renton's Monarch Leek, Meesrs, Dicksons & Co. exhibited a plant in flower of Saxifraga Burserian major; and Mr. T. S. Ware, London, eshibited flowers of Narcissus monophyllus and Lachenalia pendula.

The EHenther. STATE OF THE WEATHER AT BLACKHEATH, LONDON,

o DAY.	Baron	ÆTER.	TEMPERATURE OF THE AIR.				duc fr Glai Tab	rome- il De- tions om sher's les 6th ition.	Wino.		
MONTH AND DAY.	Mean Reading Reduced to 32" Fahr.	Departure from Average of 18 years.	Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 50 years.	Dew Point.	Degree of Humidity. Sat. = 100.	Average Direction.	RAINFALL
Jan.	In.	In.			,	,					In.
10	30,20	+0.46	\$1.3	41 5	9.8	46.6	+10.3	39.8	88	W. S.W	0.00
11	29 93	+0.21	47.0	37 • 5	9.5	41.6	+ 5.3	38.2	89	w.	0.03
12	30,24	+0.52	42.5	35.0	7.5	38.6	+ 2.2	33.9	85 {	W.: WNW	0.00
13	30,29	+ o. s6	45.0	35.2	9.8	41.7	+ 5.3	39.8	91 {	S.W.: W S.W.	0.00
2.4	30.28	+0.55	49.0	39.0	10.0	45 O	+ 8-5	41.1	87	N.W.	0 00
15	30.39	+a.66	50 0	42 0	8.0	46.3	+ 98	43.2	89	N.W.	0.00
16	30.45	+0.72	46 5	37.5	9.0	40.7	+ 4.0	38 4	91	Fog.	10.0
Mean	30.25	+0.53	47-3	38.2	9.1	42.9	+ 6.5	39.2	89	Vari'ble	0.04

Jan. 10.—Fine, bright day and night. Lunar halo.

11.—Fine and bright generally. Shower of rain from
11.9 P.M. 07.4 S. W. Fine clear oight.

12.—Fine day, sun sbining at intervals. Fine clear
13.—Fine; dull day and night.
14.—Fine day and oight; dull. The maximum temperature of this day took place at midnight.
15.—Thick fog all the morning; fine afternoon and night.
16.—Thick fog all day and night.

London: Atmospheric Pressure.—During the week ending January 12, the reading of the barometer at the level of the sea decreased from 29.87 inches at the beginning of the week to 29.80 inches by 3 P.M. on the 6th, increased to 29.95 inches by 9 P.M. on the 7th, decreased to 39.97 inches by 3 P.M. on the 8th, decreased to 39.97 inches by 3 P.M. on the same day, increased to 30.43 inches by 3 P.M. and decreased to 30.42 inches by 9 M.M. on the 11th, decreased to 30.42 inches by 9 A.M. on the 11th, decreased to 30.42 inches by 9 A.M. on the 11th, and was 30.46 inches by the end of the week.

The mean reading of the barometer for the week was 30.18 inches, being the same as last week, and 0.27 inch above the average of the week.

Temperature. - The highest temperature in the shade in the week was 51°,3, on the roth; the highest reached on the 12th was 42°,5. The mean of the seven high day temperatures was 47°,7. The lowest temperature was 35°, on the 12th; on the 6th the lowest temperature was 45°. The

on the 6th the lowest temperature was 45°. The mean of the seven low night temperature was 39°.7.

The greatest range of temperature in one day was 9.5°, on January 8°; and the smallest was 5°.5 on the 7th. The mean of the seven daily ranges the 7th.

was 8°.

The mean temperatures were — on January 6, 48°; on the 7th, 43°.6; on the 8th, 41°.5; on the 9th, 46°.6; on the 10th, 46°.6; on the 11th, 41°.6; and on the 12th, 38°.6; and these were all above their averages by 11°.6, 7°.3, 5°.3, 10°.4, 10°.3, 5°.3, and 2°.2, respectively.

The mean temperature was 43°.8, being 2°.8 higher than last week, and 7°.5 above the average of the week.

The highest reading of a thermometer with

blackened hulb in vacuo placed in the full rays of the sun was 74° , on the 11th. The mean of the seven readings was $62^{\circ}.4$.

The lowest reading of a minimum thermometer placed on grass and fully exposed to the sky was 28°, on January 12. The mean of the seven readings was

Rain .- Rain fell on three days to the amount of

ENGLAND : Temperature, - During the week ending ENGLAND: Temperature,—During the week ending January 12 the highest temperatures were 56° at Truto, 54° at Plymouth and Leeds; the highest at Brighton was 50°.3; and at Bristol and Leicester 51°. The general mean was 52°.4.

The lowest temperatures in the week were 33°.2 at Wolverhampton, 34° at Prighton, 34°.8 at Cambridge; the lowest at Truto was 42°, at Plymouth 38°.8, and at Liverpool, 38°.5. The general mean was 36°.1.

The greatest ranges in the week were 18°.7 at Wolverhampton, 18° at Sheffield, Leeds, and Sunderland; the smallest ranges were 13°.5 at Preston, 14° at Liverpool, and 15°.2 at Plymouth. The general mean was 16°.3.

mean was 16°.3.

The mean of the seven high day temperatures was

highest at Truro, 52°.7, at Plymouth 51°.5, at Leeds 49°.9; and was lowest at Bolton, 46°.3, at Brighton 47°, and at Leicester 47°.2. The general mean was

48°.8. The mean of the seven low night temperatures was highest at Truro, 45°.4, at Plymouth, 43°.5, at Liverpool 42°.8; and was lowest at Wolverhampton, 38°.1, at Brighton 39°.2, and at Sunderland 39°.4. The general mean was 41°.1. The mean daily range of temperature was highest at Wolverhampton, 10°.7, at Sunderland 9°.3, at Scheffield 8°.8; and was least at Liverpool, 5°.6, and at Bolton and Preston 6°.2. The general mean was 2°.7.

was 7°.7.

The mean temperature was highest at Truro, 48°.8,

The mean temperature was highest at Truro, 48°.8, at Plymouth 47°.3, at Leeds 45°.9; and was lowest at Erighton, 43°.9, at Bolton 43°, and at Wolverhampton 43°.2. The general mean was 44°.8. Rain.—The largest fall was 1.09 inch at Bolton, 0.62 inch at Preston, 0.53 inch at Plymouth; the smallest falls were 0.04 inch at Truro, 0.13 inch at Leicester, and 0.14 inch at Cambridge. The general mean fall was 0.36 inch.

SCOTLAND: Temperature,—During the week ending January 12, the highest temperature was \$4\cap21\$, at Leith; at Paisley the highest in the week was \$4\cap3\$. The general mean was \$2\cap2\$. The general mean was \$2\cap2\$. The week was 32\cap3\$, at Edinburgh and Perth; at Glasgow the lowest temperature was 36\cap3\$. The general mean was 33\cap3\$. The general mean was 33\cap3\$. The mean temperature was highest at Glasgow, 44\cap3\$, and lowest at Perth, 42\cap3\$. The general mean sas 33\cap3\$.

Kain.—The largest fall was 2.17 inches, at Greenock; and the smallest fall was 0.20 inch, at Dundee. The general mean fall was 0.8\cap3\$ inch.

JAMES GLAISHER, F.R.S.

JAMES GLAISHER, F.R.S.

Obituary.

An inquest was held at Carshalton, on the 9th inst., on the body of JAMES SLOPER, aged fifty-seven, who had been head gardener to the Rev. Dr. Barrett, D.D., Carshalton House School, for the last twenty-six years. Between three and four years ago he became subject to delusions, and his conduct became so alarming that at last a certificate was obtained from two medical men that he was insane, with a view to having him removed to a lunatic asylum; but, the Rector of the parish refusing to sign the certificate, it could not be acted upon. On Saturday morning he was missing when wanted, and a search being instituted his body was found hanging in an Apple-room, his feet being about 2 inches from the floor. The jury returned a verdict that "The deceased committed suicide while in a fit of temporary insanity."

Variorum.

THE PHYLLONERA LAWS .- While we are suffering THE PHYLLONERA LAWS.—While we are suffering from Cabbage worms. Pea weevils, Codling moths, and what not, imported from the Old World, it is strange that the old folks should kick up like this—and so absurdly too. The Phylloxera is already in Europe, in myriad millions, and far more likely to spread by intercourse among each other, than by anything they may get from us. And England too, a party to this farce! A country which has Phylloxera in almost every Grape border—which raises "hothouse Vines" in almost every nursery—and which hopes, of course, to do a good deal of "shopping" with her associates. America could live and prosper without any of these countries, and might very well afford to shut out all importations of every well afford to shut out all importations of every

description from abroad. It could afford to retaliate by just such a regulation. But she has the good sense to know that she cannot get any good at all without the risk of some attendant evil, and is perfectly willing to take the evil with the good, and trust to human knowledge and human progress to improve the good and conquer the bad. It is to be hoped, for the sake of common sense in human nature chiefly, that the contracting parties will see soon how silly they have acted. Common senses, however, does not seem to be a very common article among the rulers of the Old World. Republics make mistakes sometimes, but these asinine exhibits of the Old-World folks must be a source of comfort to those who have faith in popular self-rule. American Garwho have faith in popular self-rule. American Gardeners' Monthly.

Answers to Correspondents.

APPLES: IV. M. Seedling No. 1: fruit large, hand-some; deserving of further trial. Seedling No. 2 resembles Bedfordshire Foundling; very distinct from the Ribston Pippin. The Cat's-head is a well known useful sort.

ARGENTINE REPUBLIC: R. O. Apply to the Minister in London, Dr. Don Manuel R. Garcia, 15A, Clifford Street, Bond Street, W.

tGNONIA RADICANS: F. This is propagated in the nurseries by grafting on root-cuttings of Catalpa. BIGNONIA RADICANS: F.

CAVIES AS FOOD: H. E. W. Not quite suitable to

Our columns.

ERGOT ON GRASSES: G. C. Y. If Ergot is sown with Grass seed the Grass produced is not likely to injure animals unless ergotted; but the strong probabilities are that if the two are sown together the Grass will be ergotted. Whether planted with Grass seed or kept in hay, the Ergots are capable of producing new Ergots in the following summer. Ergots do not rot in the soil, but rest in a hibernating living state all through the winter and spring. At the time when Grasses are in flower in the following summer the Ergots burst on the ground and produce a fungus, and this fungus bears spores or seeds; the spores blow on to the Grass flowers, and at once produce new Ergots. It is obvious, therefore, that a good plan for the prevention of Ergot in notoriously ergotted districts is to flowering; the spores will then have no Grass flowers to light on. W. G. S.

to light on. W. G. S.
FLAS IN COTTAGE: 7, C. We think if the place
could be treated with burning sulphur, at twice, with
an interval of two or three days, so as to allow of the
eggs, which will not be destroyed by it, to hatch out,
the insects secreted in walls, ceilings, &c., might be
got rid of. If the carpets, bedding, &c., could be
beaten in the open air, and such things as would not
be injured by the fumes of sulphur might also undergo
the process of disinfection. Floors and other woodwork in the building could be washed with a strong solution of Gishnert Compound, or with water and paraffin,
several times at intervals. Pyrethrum (Persian Insectpowder) could be used in bedding, and the like, until
the insects were exterminated.

Fungi: J. J. & S. The Agaries sent appear to belong to Agarieus rachodes; considered edible when fresh, but not so when in the last stages of putridity.

IFSh, Dik HORSAL: "A. Y. Yours is not the scarce edition, and is worth, perhaps, a sovereign. You can send it to us at that price.

KILLARNEY FERN: A. M. If 2 feet in diameter, and well grown, it should be worth about 7 guineas.

well grown, it should be worth about 7 guineas.

MYRTLE: William Foster. The ternate growth of foliage is obtained by stooling old plants, as the Willow is treated when grown for basket Osiera. The plants are best cut over in early spring; got to break in an intermediate-house, and pushed on by liberal treatment, so as to get a rapid elongated growth of shoots from 1 foot to 2½ feet in length. As soon as it is seen which are likely to be the best of these, the weaker one must be cut away. The plants will make good stout growth out-of-doors during July, August, and part of September. In October they are required to be ready. Under this treatment most of the shoots produce ternate leaves, although not all. Such shoots as the Jews will not by come in useful for wreaths and bonquet work in winter.

NAMES of FRUIT: W. Smith & Sens. Your Abple is

NAMES OF FRUIT: W. Smith & Sons. You so much bruised that we cannot recognise it

so much bruised that we cannot recognise it.

NAMES OF PLANTS: Buckland. 1, Berberis Fortunei;
2, Podocarpus sp.; 3, Abies amabilis; 4, Phillyrea angustifolia; 5, Abies grandis; 6, Ligustmm latifolium; 7, Cotoneaster microphylla; 8, Arbutus Unedo, — Foreman. 1, Adiantum cuneatum, apparently, but a very bad specimen; 2, Asplenium maximum; 3, Selagiella viticulos; 4, S. stenophylla; 5, Hypnum proliferum; 6, Hymenophyllam tunbridgense.—7, P. Oncidium Wentworthianun, we think.—E, V. B. Iris ensata, Thunb.

RHODOENDRONS: A. A. The Rhododendrons will do well in the loam without any peat, if it is not too heavy. It may be improved by adding the Peat Moss Manure in moderate quantities.

INTELLIGENT READERS, PLEASE NOTE: — Letters re-lating to Advertisements, or to the supply of the Paper, should be addressed to the Publisher, and NOT

CATALOGUES RECEIVED.

JAMES DICKSON & SONS, 108, Eastgate Street, Chester
—Vegetable and Flower Seeds.

DANIELS BROTHERS, Norwich—Illustrated Seed Guide

DANIELS BROTHERS, Norwich—Illustrated Seed Guide for Amateur Gardeners. R. & G. NEAL, Wandsworth Common, S.W.—Flower,

Vegetable, and Farm Seeds. WDEN & Co., Inverness—Vegetable and Flower Vegetable, and Farm Seeds.
HOWDEN & CO., Inverness—Vegetable and Flower Seeds, &c.
WILLIAM FELL & CO., Hexham—Trade Seed Guide.
FERDINAND JÜHLKE'S SUCCESSOR, Erfurt, Germany—
Seeds and Plants.
THOMAS M'KENZIE & SONS, 34, Dawson Street, Dublin
Garden Seed List.
THOMAS KENNEDY & CO., Dumfries—Vegetable and

THOMAS KENNEDY & CO., Dumines—Vegetable and Flower Seeds, S. COLLINS, BROTHERS & GABRIEL, 39, Waterloo Road, S.E.—Seeds, Bulbous Plants, &c. H. & F. SHARFE, Wisbech — Garden and Agricultural Seeds, Wholesale.

Neuron Seeds, Wholesale.

REUBEN FOWLER, Northallerton—Vegetable and Flower than the Company of the Control of

REUBEN FOWLER, Northallerton—Vegetable and Flower Seeds.

D. LANDRETH & SONS, Philadelphia, U.S.A.—Rural Register and Almanac.

ENN REID & Co., Aberdeen—Flower, Vegetable, and Farm Seeds.

LOUIS HASSE, Gera, Germany—Seeds and Plants, &c.
R. & G. CUTHEERT, Southgate, N.—Vegetable and Flower Seeds.

WM. CUTLER, Covered Market, Leeds—Vegetable and Flower Seeds.

Elsey WATKINS, Elshop Stortford—Flower, Vegetable, and Farm Seeds.

STRIKE & HAWKINS, High Street, Stockton-on-Tees—Vegetable and Flower Seeds, &c.

STUART & MEIN, Kelso, N.B.—Amateurs' Guide and Spring Catalogue.

WILLIAM RUMSEY, Joyning's Nursery, Waltham Cross, N.—Select Seeds for the Garden and Farm.

INELAND & THOMSON, 20, Seeds, French Gladfold.

HOPER & Co., and Flower Seeds, French Gladfold.

Plants, &c.
RTIN GRASHOFF, Quedlinburg, Germany—Vegetable, Flower, and Farm Seeds.

COMMUNICATIONS RECEIVED. — J. W.—T. C.—J. OE.— J. R. J.—W. Heals.—J. S.—C. M. O.-J. Macdonald.— H. C. P.—H. W. W.—D. D. OE. R. E. J. G. E.—M. D.— H. B.—J. W. W.—D. D. OE. R. E. J. G. E.—M. D.— H. B.—J. V. J.—W. B. H.—J. Veitch & Son.—S. L.— H. & Sons.—Thrumpston.—R. P.—W. G. K.—R. F. J. W. O.—A. W. B.—A. A.—W. W.—N. E. B.—C. T. D.— E. V. B.—J. P.—Hugo de Vries.—A. F. E.—E. C.

Markets.

COVENT GARDEN, January 17.

TRADE quiet. Best Grapes firm, with a slight rise. Kent Cobs depressed. James Webber, Wholesale Apple Market.

FRUIT .- AVERAGE WHOLESALE PRICES.

Apples, ½-sieve . 1 0- 50 Cobs, per 100 lb125 0-135 0 Figs, per dozen . 1 0- 50 Grapes, per lb 1 0- 50	Lemons, per case 15 0-25 Pears, French, doz. 1 6- 0 Pine-apples, Eng., lb, 1 6- 2
Venner name Aven	on Damais Prices

. 1 . 1	s. d. s. d.	
Artichokes, Globe,	Herbs, per bunch o 2- 0 4	
Artichokes, Globe,	Herbs, per buildi 0 24 0 4	
per doz 3 0= 5 0	Horse Kadish, bund. 3 6- 4 0	
- Jerusalem, bush, 4 o	Lettuces, Cabbage,	
Asparagus, English,	per dozen 1 6	
per 100 9 0	Mint, green, bunch 1 o	
- Buodle, small 5 o	Mushrooms, p. baskt. 1 o- 2 o	
Beans, Freech, lb 1 c	Opious, per bushel 4 o	
Beet, per doz 1 o	- Spring, per bun. o 6	
Cabbages, per doz 1 0- 2 0	Parsley, per bunch o 4	
Carrots, per bun 0 4- 0 6	Radishes, per doz 1 6	
	Rhubarb, per buod, o 4- o 6	
Cauliflowers, Eng-		
lish, dozea 2 0- 3 0	Salsafy, per bundle o 8	
Celeriac, per root 0 4- 0 6	Seakale, per punnet 1 6	
Celery, per bundle 1 6- 2 6	Small saladiog, pun. o 4	
Cucumbers, each I o- 2 0	Spinach, per bushel 4 o	
	Sprue, French, bund. 1 o	
Endive, English, per		
dozea 10	Tomatos, per lb 1 6- 2 0	
Garlic, per lb o 6	Turnips, new, bun. 0 4	
POTATOS Kent Magnums, 90s. to roos. per ton; do., Regents,		
POTATOS Real Magnums, 90s. to 100s. per tou, do., regents,		
gos. to 95s.; Champions, 8os. to gos.		

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.	
s. d. s. d. o Arum Lilies, 12 blms. 6 o o 6 o Arum Lilies, 12 blms. 6 o o 9 o Azalea, white, 12 spr. 1 o 2 o Bouvardias, per bus. 1 o 1 6 Camellias, per doz 3 o 6 o Carnatioos, 12 blms. 1 o 3 o Chrysanth., 12 blms. 2 o 4 o	s. d. s. d. Marguerites, 12 bun. 6 o- 9 o Mignonette, 12 bun. 6 o- 9 o Narcissus (Paperwhite) 1 o- 3 o Pelargoniums, 12 spr. 1 6- 3 o — zoaal, 12 sprays o 9-1 o Poinsettia, 12 blooms 6 o-12 o
- rz buncbes 12 0-30 o Cyclamea, 12 blooms 0 3-0 6 Epiphyllum, 12 blms. 0 6-1 0 Eucharis, per doz 6 0-9 0 Gardenias, 12 blms. 18 0-36 0 Heliotropes, 12 sp 0 6-2 0 Hyaciatts (Roman),	Primula, double, bun. 1 0- 1 6 - single, 12 bun 6 0- 9 0 Roses (indoor), doz. 2 0- 6 0 - coloured, doz 3 0- 9 0 Tropæolum, 12 bun. 1 0- 2 0 Tuberoses, per doz 4 0- 6 0 Tulips, 12 blooms 1 0- 2 0
12 sprays 1 0 - 2 0 Lapageria, white, 12 blooms 3 0 - 6 0 — red, 12 blooms 1 0 - 3 0 Lilac, white Fr., bun. 8 0 - 10 0 Lily-of-Valley, 12 spr. 1 0 - 2 6	Violets, 12 buoches. 1 0-16 — French, per bun, 1 0-16 — Parme, per bun. 4 0-6 0 Wallflower, 12 bun. 4 0-6 0 Whate Jasmine, per bunch 6-10

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

4. d. s. d. s. d.

4. d. s. d. s. d.

5. d. s. d. s. d.

6. s. d. s

SEEDS.

LONDON: Jan, 16 .- There is now a fair demand for farm seeds. French and American red Clover seed is held at full rates; samples of new home-grown come forward pretty freely; for choice qualities there is a steady sale, but indifferent parcels are neglected. Alsike and white keep firm. There is not much doing at present in either perennial or Italian Rye-grasses. More money is asked for Tares. Some wrinkled Peas are now offering at exceptionally low rates. Canary seed is steady. In Hemp seed the tendency is downwards. Feeding Linseed is without change. Some fine new Haricot Beans are obtainable at very reasonable figures. John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, B.C.

CORN.

At Mark Lane on Monday English Wheat showed fully 1s, per quarter decline on the limited business effected. Foreign Wheat was offered freely at the reduction, but in some cases a larger decline was accepted to effect sales. Flour was quoted 6d, to 1s. lower on the week. Barley was firm, and rather dearer; Beans and Peas in limited demand, and rather cheaper. Maize with a slow sale was quoted 3d. under Monday se'noight. Oats moved off slowly without appreciable change in value.—On Wednesday Wheat and flour found flat markets, with an adverse tendency in prices. For Maize markets, with an adverse tendency in prices. For Maize the demand was slack. Earley was steady, but not active. Beans and Peas remained unaltered, and Oats steady, but with slow sales—Average prices of corn for the week ending Jan. 12:—Wheat, 38s. 9d.; Barley, 32s. 1d.; Oats, 19s. 4d. For the corresponding period last year:—Wheat, 40s.; Barley, 32s. 3d.; Oats, 2d. 2d.

CATTLE.

At the Metropolitan Market on Monday the cattle supplies were fully adequate to the demand, which was slow. The number of sheep was large, and from their prime condition the weight of mutton was more considerable. The trade was extremely dull, and prices ruled] lower. Prime calves were scarce and pigs met little demand. Quotations:—Beasts, 4.4d. to 54. 54., and 55. 8d. to 66.; calves, 55. to 55. 8d.; sheep, 55. 4d., on 75. mad 5. 4d. to 55. to 75. ad 75

HAY.

Tuesday's Whitechapel Market report states that supplies were large and trade dull, especially for meadow hay. Quotations: — Prime old Clover, 95s. to 108s.; inferior, 60s. to 75s.; prime second cut, 90s. to 105s.; best meadow hay, 80s. to 86s.; inferior, 40s. to 65s.; and straw, 28s. to 36s. per load.—On Thursday there was a fair supply. The trade was queet, without alteration. — Cumberland Market quotations: — Superior meadow hay, 78s. to 9ss.; inferior, 60s. to 7ss.; superior Clover, 10s. to 11ss.; inferior, 7ss. to 88s.; and straw, 33s. to 38s. per load.

POTATOS.

The Borough and Spitalfields Markets reports state that a large supply was on offer. The trade was slow, at the following quotations:—Magnum Bonums, 90: to 100:, Regents, 80:. to 100:, Champions, 60:, to 80:; Victorias, 80:, to 90:, per ton; German Reds, 3:. to 4:, per bag.

COALS.

The following are the prices current at market during the week:—Walls End—Hetton, 175.; Hetton Lyons, 15s. 6d.; Lambton, 16s. 6d.; Wenr, 15s. 6d.; Hulam, 16s.; East Hardepool, 16s. 3d.; South Hardlepool, 15s. 9d.; Thornley, 16s. 3d.

Government Stock.—Consols closed on Monday, Tuesday, and Wednesday at 101½ to 101½ for delivery, and 101½ to 101½ for the account.—Thursday's final quo-tations were as on the other days for delivery, but at 101½ to 101½ for the account.

GARDEN and FLOWER SEEDS.

THOMAS METHVEN & SONS

BEG TO INTIMATE THAT THEIR DESCRIPTIVE PRICED

CATALOGUE of KITCHEN GARDEN and FLOWER SEEDS, IMPLEMENTS, FRENCH HYBRID GLADIOLI, &c., for 1884,

Is now ready, and may be had, post-free, on application.

EAST LOTHIAN INTERMEDIATE STOCK (true).—White, Purple, Scarlet, and New Crimson. In packets, 1s., 2s. 6d., and 5s. each colour.

WHITE WALL-LEAVED EAST LOTHIAN INTERMEDIATE STOCK —In packets, 2s. 6d. and 5s. each.

SEED WAREHOUSES:-15, PRINCES STREET, AND NURSERY GATE, LEITH WALK, EDINBURGH.

CHOICE GARDEN SEEDS

AT VERY MODERATE PRICES.

CARRIAGE FREE.

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Thomas Kennedy & Co.,

SEED and NURSERY ESTABLISHMENT,

DUMFRIES.

PARCELS POST.

The Trade and others sending Seeds or Plants by Post are respectfully invited to send for PRICE LIST of the new

PATENT COLLAPSIBLE

MADE ENTIRELY OF METAL, AND IN ALL SIZES.

THE COLLAPSIBLE PACKING CASE and PARCELS POST BOX COMPANY.

BYFLEET, WEYBRIDGE,

BOULTON & PAUL, NORWICH.

Horticultural Builders, Manufacturers of Boilers, Valves, &c.

All Boilers shown in this Advertisement are kept in stock, ready to send
off, also experienced men sort to any part of the kingdom. Our men are
generally fixing Boilers in most of the Home Counties, and can be sent at a
short voice to unspect or replace Boilers.

Tubular Check-End Saddle Boiler, fitted with 3 Sockets. This Boiler is fixed in every county in England, giving the greatest satis-fection.

To heat Price 3 ft. Boiler 500 ft. £10 10 0 0 3 ft. 6 in. ,, 750 ft. 13 0 0 4 ft. Friendle 1 ft. 100 f



Terminal-End Saddle Boiler
with 3 Sockets.
A well-known Boiler. Numbers in
use. Following sizes in stock:—
To heat



All Boilers are guaranteed to Heat efficiently the quantity of 4-linch Piping stated

"St. Austel], Feb. 24, 1833—All Soilers work in grassifactorily, and one of my friends wishes me

CATALOGUES Post-free. 180 Pages 8vo, Post-free, twenty-four stamps. LISTS gratis, &c.

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Phoenix Boilers, walves, &c.

Boilers, Valves, &c.

Vertical Boilers, to be fixed without Brickwork.

Brickwork.

The wary best and cheap the wary best an



TESTIMONIAL.



To heat Price. 40 ft. £3 10 0 70 ft. 4 0 0 100 ft. 4 10 0

3 100 ft. 4 10 0
TESTIMONIAL.
"Newark, Dec. 20, 1883. — 1 am greatly pleased with the Nn; Greenhouse and Heating Apparatus. I can easily keep a temperature of 20 to 40° above what it is now weld a time." outside, viz., 30°. W. LUSCOMBE, M.R.C. L.R.C.P."

Gentlemen having Waste or Unprofitable Land

PAMPHLET on NUT TREES.

Mr. COOPER, F.R.H.S, Calcot Gardens, Reading, Berks.

ROSES—ROSES—ROSES.— Forty choice Perpetuals sent to any address on receipt of remittance for art; Purchasers selection from 200 best varieties. List of names on application. Hundreds of testimonials, JAMES WALTERS, Mount Radford Vursery, Exeter, Deven.

SCHOOLMASTER, the most useful new variety, bears every year. First-dass Certificate Royal Horticultural Society. Maidens, 22.64; strong, 27.7, 55. each.

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To the Trade.

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VINES, good FRUITING CANES, 722, 842, per dozen.

VINES, good PLANTING CANES, 722, 842, per dozen.

BY WINES, good PLANTING CANES, 302, 432, per dozen.

BERLING MUSCAT of ALEXANDRIA, FOSTERS'

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Clapton Nursery, London, E.

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SEED POTATOS, grown expressly for seed purposes.
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Yeitch's Improved Ashleaf.
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White Elephant.
They are all well selected.

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e following, viz.;—
Sandringham Kidey,
Vsitch's Improved Ashleaf,
Klever's Royal Ashleaf,
Myat's Prolific Ashleaf,
Pride of Ontario,
Show Make,
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Pride of Ontario,
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HOME GROWN VECETABLE and FIELD SEEDS.

H AND F. SHARPE are prepared to make and AGRICULTURAL SEEDS they have grown this season from choice selected stocks. The quality of the seeds is excellent, and the prices are very low.

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SINGLE VARIETIES—the leading collection in the Trade, numbers of which have received First-class Certificates. POMPON VARIETIES—a most chaste selection, invaluable for Border Decoration and for Cutting. [vation, SHOW and FANCY VARIETIES—all the best sorts in culti-Descriptive priced CATALOGUE of above post-free on application. THOMAS S. WARE, HALE FARM NURSERIES, TOTTENHAM, LONDON.

A SPARAGUS.—One Acre 2-yr. and 3-yr. old for sale, cheap. Apply to Mr. ASHLEY, Dawes Farm, Dawes Road, Fulham, S.W.

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AURELL, Common, 1-yr, 18s; 2-yr, 22s.;
Colchic 1-yr, aga per 1000; 2 feet, fine, 16t. per 100;
45 feet, 25t. per 100.

EVERGREEN OAKS, 4 to 6 inches, 80x. per 1000.

SWEET BAY, 4 to 6 inches, 70x. per 1000.

SWEET BAY, 4 to 6 inches, 70x. per 1000.

ESCALLONIA MACRANTHIA, 12 to 15 inches, 20t. per 100.

COTONEASTER MACROPHYLLA, a feet, 12x. per 100;
IVY, 1000. Sim ONSIL 20 20; feet, 10x. per 100; maculata grandifolia, 155 foot, 20x.

MANETIT STOCKS, strong, 26t. per 100;

GARLIES MITCHELL, Nurseryman, Stranzeer.

New Seedline Potatos.

JAMES FILEHELL, NUSETYMAN, Stranzer.

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JAMES LYE has much pleasure in offering his new varieties, which, from his long experience, he can confidently recommend both for Main Crop and Show purposes. First-class Certificates, &c. Mr. R. Dean, Ealing, Mr. Kerr, Koyal Scotch Fotato Exabilisment; Messas, Diesels, Fotacion and other leading Fotato growers, peak in the higher definition of their excellent qualities. Descriptive and Price LISTS on

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Standard and Dwarf H.P. ROSES on Brier, best show
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HOLLIES, Green, 2½ to 3½ feet, 8os. per to 3½ feet, 5os. per to 3½ feet, 5os. per to 3½ feet, 5os. per to 50s. Varienated HOLLIES, 2 feet, 11. 6d. each; Portugal LAURELS, bushy plasts, 2 feet, 6os. per too; 1ab some prime YEWS.—J. SPOONER, Goldsworth, Woking Station.

CHOICEST CONIFER, -Abies
Donglasii, 1 to 1½ foot, 242 per 100; 1½ to 2½ feet, 302
per 100; 6 to 8 feet, 362 per dozen. Abies taxifolius, 2 to 2½ feet, 302
2½ feet, 302 per dozen. Aracuctai imbercate, 100 per 2½ foot, 302
2½ feet, 302 per dozen. Aracuctai imbercate, 202
2½ feet, 302 per dozen. Aracuctai imbercate, 202
2½ feet, 302 per 102
2½ foot, 302
2½ foot, 302 per 102
2½ foot, 302
2½ feet, 302
2½ feet, 502
2½ CHOICEST CONIFERA.-Abies GARLIES MITCHELL, Nurserymao, Stranraer.

SPECIAL OFFER of FRUIT TREES, at reduced prices to clear the ground:— APPLES, 3 and 4yrs, brached, 5 to 7 feet, 9s. per dozen, 5os. to 6os, per 1co. "Stadoutds, 4yrs, 5 to 6 feet stems, 7os. to 8os. per 1co.

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Standards, 4yr., 5 to 6 feet stems, 7cs. to 8cs. per 1co.

Stock consists of principally Wellington, Lord Suffield, Cox's Orange Pippin, Blenheim Orange.

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RHODODENDRONS, Hybrid Seedlings, various colours, with colour labelled on each plant, fine bushes, 2½ to 3½; feet high, many with buds, 24. to 30. pc dozes; do., fine plants, from good strains, a feet high, 122. per dozes, many with buds.

25. to 15. to 15. pc dozes, many with buds.

25. to 15. pc 15. pc dozes, many with buds.

25. to 15. pc 15. pc dozes.

25. to 15. pc dozes.

26. to 25. pc dozes.

27. to 25. pc dozes.

28. per dozes.

28. pc dozes.

29. to 25. pc 15. pc 1

95. per dozen.

95. per dozen.

ANDROMEDA FLORIBUNDA, nice busbes, 505. to 705.

per 100; extra large, many well budded, 125. to 185.

per dozen.

DAPHNE MEZEREUM, covered with buds, reds, 3s., 4s, to 6s. per dozen; whites, 4s. per dozen.

SKIMMIA JAPONICA, fine bushy plants, well budded, 6s.

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HOLLIES, Siver Variegated, well-furnished plants, with good roots, 18 to 20 inches high, 12s. per dozen; 2 to 3 feet,

30s. per dozeo.

"common, extra transplanted, bushy plants, 1½ to 2 feet,
30s. per 100; larger, 50s. to 70s. per 100.

THORNS, Flowering, ol sorts, 3 feet stems, five heads, 9s. per

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ERICA HERBACEA ALBA (now covered with white flowers),

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All Goods Free on Rail, but a small charge will be made for package. Cash or reference from unknown correspondents.
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6 Come and See.

Grand White Violet, "Swanley, White (Count Brazza).

NOW in full 'flower. Shown and 'much
odmired at the two late meetings of the Floral Committee
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a joy for ever."
Plants full of buds in 5-inch pots, 18x, per dozen; smaller, 22x.
Large clumps from ground, 18x, per dozen; smaller ditto, 10x,
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Single Pompon Dahlia Seed.

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T is well known that Messrs. Moore's,
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purposes. They are really useful and valuable for cut flowers
bearing no comparison with the other ordinary kinds, and
possess merits not hitherto arrived at by others, which was
proved to be the fact last autumn. See Gardener's Chronicle,
Sentember 3, 1833. 1s. per packet.
Mr. J. Sevense, Jiam Hall, Seed turned out spiendle
a sight worth seeing, foo plants; many exclamations of surprise.
The public are much indebted for the perfection you have
brought this grand class of plants to."

Lobelias, Swanley Blue and White,

A DMITTED by all to be the two most A DMITTELD by all to De the two those beautiful varieties ever sent out. A correspondent in the Yournal of Horticultus espeaks of the Elne thus (received two dwarf dense growth and bright. It must spread widely, so the sense with he can be a considered to the sense of the constant of t

Dahlias.

WE have now the whole family, probably in the largest quantities and finest roots for propagating ever before differed, and at the lowest price consistent with quality and correctoess. See our Catalogue, free for 12 stamps.

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RHODODENDRON PONTICUM, 1 to 11/2 foot, 11/2 to

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" choicest named, in 50 to 60 varieties, magnificeot plants,
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" COLLCHICA, 10 1½ foot, 1½ to 2 feet, 2 to 3 feet,
" PORTUGAL, 10 1½ foot, 1½ to 2 feet, 2 to 3 feet,
" ROTUNIFOLIA, 10 1½ foot, 1½ to 2 feet, 2 to 3½ ft.
LAURUSTINUS, ½ to 1 foot, 1½ to 2 feet.

LAURUSTINUS, ½ to 1 foot, 1 to 1½ foot, 1½ to 2 feet.

CATALOGUES of Roses, Fruit Trees, Conifera, Shrubs, &c., free on application.

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BEAUTY OF THE PARTERRE.

YES! Everybody admires good Parsley, wherever seen; very hardy and altogether different, most beautiful, and source, and so lovely that it adds a charm wherever seen; very hardy and altogether different, most beautiful, and source, the Reproposition of the source, The Reproposition of the source, The Reproposition of the source planted in the flower graden, and admired by all. I am anxious to get a long line for flower garden this year. I am glad to see you are advertising it."

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TEN-WEEK STOCK (Large-flowering).

Soleadid mixed, best pot-raised Seed, producing So to
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For separate sorts see CATALOGUE, forwarded gratis and
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TESTINONIAL from Mr. WILLIAM COOMBER, Superintendent Testinonial for Mr. William Coomber, Superintendent of the Royal Botanic Society, Regent's Park, W.:—"Your Large-flowering Ten-week Stocks surpassed any that I had your seen. Rr. er seen, &c." FRED. ROEMER, Seed Grower, Quedlinburg, Germany.

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The PHALÆNOPSIS at the CLAPTON NURSERY are now blooming, and many hundreds with flower-spikes can be seen.

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d. per bushel; 100 for 25; truck (loose, about 2 toos),
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ELACK FIEROUS PEA1, 55 per sake, 3 sakers sakers.

COARE ELOW FEAND, 15, 96, per bushel; 15t, per half
VELLOW FIEROUS LOAM, PEAT-MOULD, and LEAFMOULD, 15, per bushel.
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COCOA-NUT FIBRE REFUSE, best quality, as supplied to the principal Nurseryme an Nobility, as upplied to the principal Nurseryme and Nobility, as per Bag; 15 Bags, 121; 30 Bags, 193, sent to al parts; Truck-load, 245, the to rall, Best LOAM and PRAT. A. FOULON, 32, St. Mary Axe, London, E.C.

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ORCHID PEAT, specially selected and prepared, as supplied to the leading Trade and private. Good smad Peat for Heaths, Ferns, Greenhouse Plants, &c., supplied to any quantity from Truckloads to a few Bushels. Price List free.

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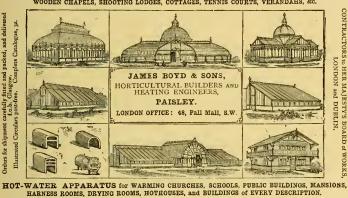
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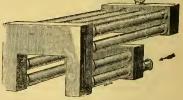
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IRISH LINEN UNDERCLOTHING. A luxury now within the reach of all Ladies.—Chemises, trimmed Embroidery, 5s. 6d.; Night-dresses, 8s. 6d.; Combinations, 6s. r.id.; Baby Lioen, Dress Materials, Flannels, Blaokets, Hosiery, Gloves, Under Vests, Pants, Calicocs; 180. Lace and Linen Curtaios, and Lace Goods of every description. Price List post-free.

OI every description.

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GARDENERS' CHRONICLE.

Established 1841.

No. 526.—Vol. XXI. SERIES.

SATURDAY, JANUARY 26, 1884.

Registered at the General Price 5d.
Post-office as a Newspaper. Post-FREE, 5½d.

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now be made payable at
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THE GARDENERS' CHRONICLE,
Volume XX., JULY to DECEMBER, 1883,
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TIGHTY THOUSAND CLEMATIS, in of the flowers of which we had a fine of the flowers of which become to inches across, and are of every shade, from pure white to the darkest purple) for climbing and bedding the property of the flowers of the flowers

RAPE VINES.—A fine stock in leading varieties, Planting and Fruiting Canes. Apply to FRANCIS R. KINGHORN, Nurseryman, Richmond.

FOR SALE, SUTTON'S KEADING HEBO-WE at Booking Orders for this famous Potato (grown in Scotlew at a Edoking Orders for this famous Potato (grown in Scotlew April 1997), the second property of the property of

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COMPANY (Jown Cowaw), Limited, have this year a
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particulars on application to
The MANAGER, The Vineyard, Garston, Liverpool.

POSES (20 acres).—Well-rooted, many obsourd, truly named, of matured vigorous growth, and of the best knots. Bushes, R. S. & Co. S. selection, St. per dozen, foo. pecking and carriage free for cash with order. Standards, 152, per dozen, or roof ree for 1202. These world-famed Roses cannot fail to give the greatest satisfaction Descriptive LIST free on application.

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Seed Catalogue, 1884.

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URPLUS STOCK.—Handsome and Choice Evergreen and Decidous TREES for Avenues, Pack, Gardens, Streets, &c. Very good and cheap. LIST free by post. RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

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AING'S CHOICE HYBRIDISED SEED,
all new and of unequalled quality. Sealed packets, free
by post—single, 1z, zz 6z, and zz : double, zz 6z, z 6z, arc
to TUERS, mixed seedings, by Parcels Post, 4z, 6z, 4z,
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and JOHN LAING AND GO., Seedamen, Forest Hill, S.E.

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A L BA,
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A NEMONE JAPONICA ALBA
and ROSEA.—30,000 very strong Plants for planting or
potting, 16s. per 100, or 2s. 6d. per dozeo. Special quotations potting, 16t. per 100, or 25. 00., p.
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A SPARAGUS.—Early Purple Argenteuil, the earliest and finest in Covent Garden. Seed from enormous heads, 11. 6d. per packet. Plants, same strain, 101, per 100.

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Monday Next.—(Sale No. 6575.)

IMPORTATION of 10,000 LILIES from Japan, &c.

M.R. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 36, King Street, Covent
O'Cock precisely, an importation of
5000 LILIUM AUKATUM, in fine condition.
2200 L. LONGIFLORUM.
800 L. THUNBERGIANUM.
300 L. SPECIOSUM ROSEUM.
350 L. SPECIOSUM ROSEUM.
350 L. SPECIOSUM ALBUM, just received direct from
Japan.

So L SPECIOSUM AL.

JOINT STREET OF THE STRE On view morning of Sale, and Catalogues had.

Wednesday Next.—(Sale No. 6377.)

PLANTS from Holland.

M.R. J. C. STEVENS will SELL by AUCGArden, W.C., on WEDNESDAY NEXT, January 30, at hall-past zo 'Clock precise's.

Hardy Ornamental CONIFERS, Variegated and Green Hardy Ornamental CONIFERS, Variegated and Green Hardy Ornamental CONIFERS, Variegated and Frist-clast Standard, Dwarf, and Climbing ROSES, from English Nurseries,

Pyzamid and Dwarf-trained FRUIT TREES.

Hardy Herbaccons EORDER PLANTS.

GLADIOLI, LILIUMS, TIGRIDIAS, and other BULES, for spring planting.

for spring planting.
On view morning of Sale, and Catalogues had.

Thursday Next —(Sale No. 6598)
3000 LILIUM AURATUM just received from Japan io very
fine condition.

M.R. J. C. STEVENS will include the above
in his SALE by AUCTION, at his Great Rooms, 38,
King Street, Covent Garden, W.C., on THURSDAY NEXT,
January 31.
On view morning of Sale, and Catalogues had.

Thursday Next—(Sale No. 6578.)

VANDA SANDERIANA.—We are pleased to be able to effer at last a renlly graod importation of this gergeous Vanda. Orchid growers and the Press have been manimum in according to this plant the first place among airmons in according to this plant the first place among and the pressure of the plant the first place among and the pressure of the plant the first place among the plant the first plant the plant the first plant the first

mons in according to this plant the first place among new Introduction. KELILIANA (new type)—A grand importation, in superb order. These Cattleyas were found in a new distirt, and are very distinct; flowers of great size, with deepest broad lips; leaves broad and thick. The dried flowers on view will show what a superb new type this is.

M.R. J. C. STEVENS has received instructions from Mr. F. Sander to SELI the above splendid Inportations by AUCTION, at his Great Rooms, 28, King January 71, at half-past is O'Clock precisely. SDAY NEXT, Junuary 71, at half-past is O'Clock precisely.

May be viewed the morning of Sale, and Catalogues had.

MR. J. C. STEVENS begs to announce that his NEXT SALE of FLOWERING ORCHIDS will take place on WEDNESDAY, February 6. Gentlemes desirons of entering Plants for this Sale will place send particulars of same not later than THUREDAY, January 31. Action Rooma and Offices, 36, kturg Street, Overni Garden, W. C.

Auction Rooms and Offices, 38, king Street, Covent Garden, W.C. Without Reserve.—Hammond Street, Cheshunt, Herts To FLORISTS, NURSERYMEN, and OTHERS.

WESSRS. MEDCALF AND SON will SELL by AUCTION, without reserve, on MONDAY, Jananya 88, at 1s for 120 'Clock precision' (unless previously disposed of by private control).

The MALDALLE and EXTENSIVE STOCK of a NUR-OTHER STOCK of A STANDARD CONTROL OF A STANDARD CONTRO

Tuesday Next.

SPECIAL SALE of ORCHIDS in Flower,

MESSRS. PROTHEROE AND MORRIS

will SELL by AUCTION, at their Central Sale

Rooms, 67 and 68, Cheapade, E.C., on TUESDAY NEXT,

January 20, at half-past 12 o'Clock precisely—

doo' 1st of ORCHIDS in flower and bad, comprising plants

from some of the largest collections in the country. Amongst

them may be mentioned:—

manishum, beautifully spotted variety (F.C.C.,

Lycaste Skioneri alba, very fine plant, three flowers.
Odontoglossnm Edwardsi, grand plant, with eighty blooms.

machanum, beautifully spotted variety (F.C.C., R.H.S.)
O. Andersonianum.
O. Alexandre, many magnification focus varieties.
O. Pescatorei, a fine variety.
Cypripedium villosum, large specimen, with thirty-five flowers.
Cattleya Trianze alba, wo Cataloones many control of the c blooms.
Oncidium fuscatum.
O. Marshallianum.
O. Marshallianum.
Deadrohium Ainsworthi.
Leeia ancept Aironac, lovely variety
Composition of the Carlon of the

Thursday Next.

Thursday Next

Thursday Next

selected FRUIT TREES and HARDY SHRUES, a
consignment of 700 PANCRATIUM CARIEEUM, and
soo AMARTILIS GRADE AND CARIEUM, and
soo AMARTILIS CALIEUM, CARIEEUM, and
consignment of 700 PANCRATIUM CARIEEUM, and
soo AMARTILIS CALIEUM, CARIEUM, and
consignment LILIEE and BULES, and 3000 of the new MILLIES and BULES, and 3000 of the new MILLIES and BULES, and 3000 of the new MILLIES AND AND MORRIS
will SELL the above, at their Central Anction Rooms,
for and 68, Chapside, E.C., on THURSDAY NEXT, at halfpast ta o'Clock precisely.
On view morning of Sale. Catalogues had at the Rooms,
and 8, New Broad Street, E.C.

3000 Ornithogalum gracilis (new.)

MESSRS. PROTHEROE AND MORRIS
NEXT.

NEXT.

IMPORTED ORCHIDS from Messrs. Sbuttleworth, Carder & Co.

MESSRS. PROTHEROE AND MORRIS

of and 68, Cheapside, E.C., on FRIDAY NEXT CATTLEYA

TRIAN Excels from beyond Popayan, C. DOWIANA in good condition, BARKERIA SKINNERI, ODONTOCLOSSUM SCHLEIPERIANUM, O. CRISTRUM (Alexandra), the best type: 0, PESCATOREI, and BRASSIA SPECIES, probably B. Lauing of Sale. Catalogues may be had at the Rooms, and 8, New Brond Street, E.C.

Friday Next

Friday Next

ESTABLISHED ORCHIDS.

MESSRS, PROTHEROE AND MORRIS
will include in their SALE oo FRIDAV NEXT,
February 1, about aso lots of ESTABLISHED AND MORRIS
The state of t

Rugby.
Expiration of Lease, the Land having to be given up March 25

Expiration of Lease, the Land having to be given up March 25

MESSRS. PROTHEROE AND MORRIS

will SELL by AUCTION, on the Premises, The Nursery, Rugby, on TUESDAY, February 5, at 12 o'Clock precisely, by order of Mr. W. Bryant—
The remainder of the WELL-GROWN NURSERY Specimes CONTERER, early all transplanted 1883URNAMENTAL TREES.
10,000-19-T. MANETIT STOCKS and cultivated BRIERS, fit for immediate working.
3000 Standard and Dwarf ROSES.
3000 FRUIT TREES, in variety, and other Stock; together with the remaining GLASS ERRCITIONS and FITTINGS, including large CONSERVATORN, for leet by 10 feet 1911.

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GREAT CLEARANCE SALE.
Fourth portion of the beautifully grown NURSERV STOCK,
by order of Messrs, Ewing & Co., who are giving up their
Business.

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2000 Standard and Dwarf KOSES of choicest sorts of H. P.'s, Teas, &c.

Teas, &c.

A large quantity of Decidnons Flowering and Variegated Foliaged SHRUBS.

Several thousand FOREST TREES of various sorts and sizes, including a large quantity of WILLOWS, POPLARS, ELMS, LIMS, and Sweet CHESTNUTS, &c. A quantity of choice EYEKGREENS, CONTERNS, and The Lots will be so arranged as to sait both large and small

May be viewed. Catalogues on the Premises, and of the Auctioneers and Valuers, 67 and 68, Cheapside, and 8, New Auctioneers and V Broad Street, E.C.

A PRACTICAL GARDENER wishes to RENT a good MARKET GARDEN, with cottage preferred,—A. B., Mrs. Stilborn, St. Nicholas Street, Norton Malton, Yorks

To NURSERYMEN and FLORISTS.

TO SOLD, with Possession, the Ground Rent, of the Capital Premises known as YOUNG'S NURSERIES, with large Conservatory and Glass Herborn Marker Ries, with large Conservatory and Glass Herborn Apply to Mr. C. DAYENPORT, Estate Agent, 35, Bucklersbury, City, E.C.

FOR SALE, long LEASE, of 1½ Acre walled and beautifully open NURSERY GROUND, Three good Hothoness, &c., and mice Cottage; 4½ miles from Covent Garden. Address, GARDEN, 52, College Street, Putney, S.W.

To Nurserymen, Florists, and Greengrooters.

To LET, with Immediate Possession, an about Gastabished and Productable Mad Gastabished and Productable Mad Gastabished some firmers, discrete, Forcing Gastabished and Productabished some firmers, Gardener's House, and ample Store Houses, and about 1 acre of unwalled Garden adjoining. Stituated at Bolham, 1½ mile from Tivertoo, Devoo, on the Great Western Railway.

Also, if desired, there would be LET with the above a good SHOF in West Extert Street, Tiverton, admirably suited for a Gastaby for particulars to H, J. W. COULSON, Estate Office, Leat Street, Tiverton, Devoo.

To Florists and Seedsmen,
To LET, at Brighton, in best thoroughfare,
first-class Pramics, exceed specially for the above.
Good dry Basement, Good Shop, with Office, and all Fittings,
complete. On first floor and the Shop with Office, and all Fittings,
floor, handsome Conservatory, &c., with Fittings. Premises
heated throughout by sinch hot-water pipes,
Apply to G. R. LOCKYYR, Builder, King Street, Brighton.

To Florists.

To BE LET, a SHOP, in Baker Street,
Apply to Mr. DAWN, Baker Street Bazaar, W.

To Market Gardeners.
EET, BEDS, Single or Double.
17. Tavistock Street, Covent Garden, W.C.
(opposite Flower Market).

T. MILLINGTON AND CO., ENGLISH and FOREIGN SMEET and PLATE GLASS, WHITE LEAD, MILLED LEAD, OILS, and COLOUR MERCHANTS, 43, COMMITCIAL Street, E.

THE FORMATION of NEW, RENOVATION or ADDITION to existing GARDENS,
PLEASURE GROUNDS, and ESTATE IMPROVEMENTS generally, carefully executed, by Cootract, or other-

wise. WILLIAM DINNES, 30, Richford Street, Hammersmith,

THE GARDENERS' ROYAL

BENEVOLENT INSTITUTION.

At a GENERAL MEETING of the MEMBERS of this
Institution, held on the roth inst, for the Election of Ten Pensioners, the following was the Result of the Ballot, and the
Members Resolved that in consequence of a Vacancey having
cocarred in the List of Pensioners since the Voting Engineer of
issued, that the Candidate who had the greated that the
Votes after the Ten for whom the Election was called, should be

Elected a Pensioner.

CANDIDATES.

Votes.	Name.				Age.
1106	JAMES HUTCHESON				78
2743	THOMAS RIDER				81
1675	CATHERINE WILLIAMS	3			72
	WILLIAM BIRKETT				75
75t	ANN DAWSON				65
1796	THOMAS FORSYTH	::	::	- :: 1	81
1296	I HOWAS FORSTIN				68
594	RICHARD HAWKINS	••	••	* *	
1807	ANN HOPKINS	• •	• •	•••	64
1608	ROBERT KENNEDY				82
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2004	ELIZABETH BUTTERS	• •	**		76
2031	ANN LARISSEY		2.0	• • •	73
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	GEORGE URQUHART				68
1039	SOPHIA WAKE				67
263	SUPPLIA WARE	••	•••	••	0/
	n n	T. T. C	DO	C	

UTLER, Secretary.

14, Tavistock Row, W.C., January 11, 1884. THE GARDENERS' R ROYAL

L beginest sincerely to thank all those Members of and Subscribers to the above lositime, who so kindly RECORDED STATES IN MY FAVOUR AT THE LAST ELECTION, thereby enabling me to be placed on the Pennion List, which will ever be gratefully remembered by their obedient servant,

their obedient servant,

Thomas Pierpoint, Deceased,
Parsuant to an Act of Parliament, 2nd and 32d Vic, cap, 35, intituled "An Act to further amend the Law of Property and to Relieve Trustees,"

NOTICE IS HEREBY GIVEN, that all CREDITORS and other PERSONS baving any CLAIMS or DEMAND'S against the Estate of THOMAS PIERPOINT, late of Stockness and the Estate of THOMAS PIERPOINT, late of Stockness Street, Warrington, in the County of Lancaster, Seedsman and Bread-baker, deceased (who died on October 19, 1893, and Administration of whose Personal Estate and Effects was on December 3, 1893, granted by the District Registry at Chester, attached to the Southern County of Lancaster, Seedsman, a Creditor of the Deceased, are hereby required to send the Particulars in Writing of their County of Lancaster, Seedsman, a Creditor of the Deceased, are hereby required to send the Particulars in Writing of their Chims or Demands to us, the undersigned, the Solicitors for the add Administration on or before of the Solicitors for the Assets of the said Deceased among the persons entitled thereto, having regard only to the Claims and Demands of the Assets of the said Deceased or any part theor Demands be also person han drotte, and he will not be Labbe for the Assets of the said Deceased, or any part theor of Demands be also person han drotte.—Dated January, 1844.

Warrington, Solicitors HAMED AND KIRKCONNEL, Warrington, Solicitors the Administrator.

solihull, 1st January, 1884.

Gentlemen,

I beg leave to inform you that I have this day Sold the Business of a Nurseryman and Seedsman hitherto carried on by me at Solihull and Birmingham to

Messrs. C. W. FALCON & J. F. L. EVANS, by whom the Business will in future be carried on, under the Firm of

"THOMAS HEWITT & CO."

The new Firm have authority to receive on my behalf all Debts due to me to date. Yours obediently,

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To the Trade.

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Walker's Improved Regent,
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2½ feet, 20x. per doreo.

2½ feet, 20x. per doreo.

2½ feet, 30x. per 10x. per 10x. per 10x.

2½ feet, 30x. per 10x. per 10x. per 10x.

2½ feet, 30x. per 10x. per 10x. per 10x.

2½ feet, 30x. per 10x. per 10x. per 30x. per 10x. per 10x.

3½ foot, 30x. per 10x. per 10x. per 30x. per 10x. per 10x.

3½ foot, 30x. per 10x. per 40x. per 10x. per 30x. per 10x. per 30x.

3½ feet, 30x. per 10x. per 40x. per 40x. per 40x. per 10x.

3xx. per 40x. per 40x. per 10x. per 40x. per 40x.

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These Cattleyas were found in a new district, and are very distinct. Flowers of great size, with deepest broad lips; leaves broad and thick. The dried flowers on view will show what a superb new type this is.

IR. J. C. STEVENS has received instructions from Mr. F. SANDER to SELL the above splendid importations by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, January 31, at half-past 12 o'Clock precisely.

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finely budded, 122, to 152, per dozen.
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HOLLOWAY RIVAL PEA s. d. (New) . . . per quart 2 6 Very prolific; the best second early Pea yet introduced.

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ROTUNDIFOLIA, 1 to 1½ foot, 1½ to 2 fin, 2 to 2½ ft.

LAURUSTINUS, ½ to 1 foot, 1 to 1½ foot, 1½ to 2 fin, 2 to 2 feet. CATALOGUES of Roses, Fruit Trees, Coniferæ, Shrubs, &c., free on application.

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SCARCE GARDEN PEA. VANGUARD (Nelson).

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EARLY PROLIFIC DWARF s. d. FRENCH BEAN per quart 2 6 Acknowledged by every one to be the earliest and best French Beao in

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Have pleasure in announcing that their first consignment of EAST INDIAN ORCHIDS is to hand, in splendid condition. It consists principally of the following varieties:—

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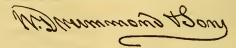
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Mr. J. MUIR, in the "Journal of Horttculturs," May 24, 1883, says:-

"Our largest piece of Spring Cabbage measures 70 feet × 50 feet, and here we have many sorts growing. The best of all these at the present time is Webbs' Emperor,"

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Unequalled for general use. 6:
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A magnificent variety of large size.
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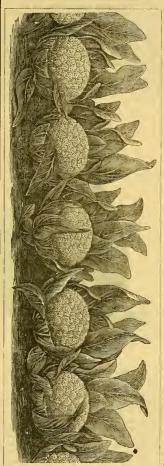
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NEW PEAS. ELECTRIC LIGHT. 3s. per quart.
TRIUMPH. 2s. per quart.
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AUTUMN WHITE BROCCOLI



SUTTON'S MICHAELMAS WHITE.

The want of a really good reliable late autumn Broccoli to follow the late Cauliflowers is generally felt. We therefore the control of the co

Per packet 2s. 6d., post-free.

SUTTON'S SPECIAL L of NOVELTIES for 1844, Gratis and post-free on application. LIST



THE

Gardeners' Chronicle.

SATURDAY, JANUARY 26, 1884.

SCHOOL GARDENS.

A MONG the various plans proposed by which the youth of our country districts might be induced to take an efficient interest in the cultivation and raising of fruit trees, that of getting the village schoolmasters to teach them the various arts and practices of fruit-culture deserves particular notice on the part of those interested in country pursuits, and who by their social position can initiate and give support to any efforts tending in the direction indicated. The main difficulty will be to find the necessary amount of knowledge and manual skill in the teacher, another will consist, in towns certainly, in the acquisition of a piece of suitable ground in which the various practices of the art can be carried on with living plants. There will be no want of aptness or of interest in the scholars for the appropriateness and usefulness of the matter taught will appeal far more forcibly to the mind of the average schoolboy born and bred in the country than will lessons in parsing or masses of chronological dates and other equally, for him, useless instruction. In those points in which the schoolmaster might find himself deficient in the knowledge required to be imparted, he might generally rely on the assistance of some good neighbouring gardener or nurseryman for lessons himself, and for occasional help in the work of instructing the scholars also.

There seems to be a great desire to make our country, in the matter of fruit production, as independent of the foreign grower as the nature of our climate and the vicissitudes of the seasons will allow, so that if at the present time any impetus to this end could be given, it would meet with cheerful response from nearly all classes of the community.

We have frequently questioned country folk as to the reason so few fruits are to be met with in cottage gardens and fields, and the reply has nearly always been in substance the insecurity or uncertainty of the tenure, and consequently the disinclination to be at any expense to plant fruit trees for others probably to gather the fruits. This, it will be seen, implies the supposed necessity for purchasing trees from the nurseryman; but were the men acquainted with the various methods of raising from seed the Crab, Pear, Cherry, and Plum, and the Quince from layers, and the Doucin or Paradise, or even the Codlins, from cuttings, on which to graft or bud, this objection to plant on the score of the expense would fall away, and planting having become common, the householder or cotter would find fruit trees in every garden to which he might remove.

Although in some cases no doubt people would like to raise their own stocks, or would find them in woods and open spaces, the demand that would arise for such items would be sure to be met by persons making a special business of stock growing, and who would be able to raise them in great numbers and sell them in small ones at a cheap price. Still, the teacher should instruct the boy how to raise such things for themselves, so that whether they stay at home or emigrate to our colonies, they would know how to set to work with a few ounces or pounds of fruit tree seeds and kernels. Instruction should also be imparted by the master in the art of making cuttings and layers of Gooseberries, Currants, Figs, and Filberts, the latter method being inculcated as the only one by which success is assured in all cases. These operations should always take place at the proper season, this alone forming a most essential part of the matter taught. A knowledge of good sorts of fruits, and of the correct way of spelling their names, would be quite as useful as lists of the Jewish Kings, and could be just as easily acquired, it short and judiciously selected, with reference to locality and usefulness in their several classes of culinary and dessert, preference being given to those that are good for

The stock in trade, so to speak, of the schoolmaster, need not necessarily be extensive. A few dozen fruit-tree stocks of the right agegrafts that can be had from the leading gardens of the locality, and cuttings of bush fruit that are obtainable almost everywhere, would include almost all of it. Of course, if a garden is already in existence, there will be fewer hindrances to making a good start at any time, and presumably the means at hand for every purpose. This is a matter we have often urged upon the attention of managers of local horticultural shows, who, by organising instruction of this character in the cultivation of fruits and vegetables, diffusing a knowledge of the sorts best adapted for particular localities and the like, would do more real good than by exhibitions at remote intervals, though obviously the two plans might well be worked in concert. With our rising generation of country lads in possession of some such useful rural knowledge and deftness in manipulation, there would be small reason to complain of the scarcity of fruits in any part of the country in a few years. The propagation of sorts and proper ways of planting are the main things that demand attention; training, pruning, &c., could be acquired later, either with the aid of peripatetic lecturers, as is done in Germany, France, and Belgium, or through cheap pamphlets, like Paxton's Calendar, treating of these and other rural subjects.

COUNT RUMFORD. - In the north - easterly environs of Munich a wild neglected region of forest and marsh, which had formerly been the hunting ground of the Elector, was converted by Thomp-son (afterwards Count Rumford) into an "English garden." Pleasure grounds, parks, and fields were laid out, and surrounded by a drive 6 miles long; walks, promenades, grottos, a Chinese pagoda, a racecourse, and other attractions were introduced; a lake was formed, and a mound raised, while a refreshment saloon, handsomely furnished, provided for the creature comforts of the visitors. Here during Thompson's absence in England in 1795, and without his knowledge, a monument was raised to commemorate his beneficent achievements. It stands within the garden, and is composed of Bavarian freestone and marble. It is quadrangular, its two opposite fronts being ornamented with bassorelievos, and hearing inscriptions. The wanderer on one side is exhorted to halt while thankfulness strengthens his enjoyment. "A creative hint from Carl Theodore, seized upon with spirit, feeling, and love, by the friend of man, Rumford, has ennobled into what thou now seest around thee, this once desert region." On the other side of the monument is a dedication to "Him who eradicated the most scandalous of public evils, Idleness and Mendicity; who gave the poor help, occupation, and morals, and to the youth of the Fatherland so many schools of culture. Go wanderer! try to emulate him in thought and deed, and us in gratitude." From Professor Tyndall's Lecture on Count Rumford before the Royal Institution.

NATURE-PRINTED POTTERY.

MESSRS, DOULTON & Co. have recently introduced a variety of their well-known art stoneware, in which the method of nature-printing forms the chief decoration. The ware is designated "Doulton Repousée-ware," and is produced in the following manner:—The vase, flower-pot, or other article, is formed on the potter's wheel in the usual way, and sent to the designer in the soft state. It is at this time so plastic that the slightest pressure produces an indentation, and the most delicate lines can be impressed upon its surface. The designer, placing the soft vase upon a suitable stand, proceeds to impress upon its exterior the fresh leaves or blossoms which he has before him, according to his taste. The condition of the clay causes the leaves to adhere closely to the form in whatever position they are placed. The artist next covers the whole surface of the vase with a thin coating of some coloured clay, which can be varied at pleasure. As soon as the surface is slightly hardened the leaves can be removed, leaving their most delicate markings faithfully reproduced on the vase itself. While the vase is still soft the designer, putting his tool or finger within its mouth, pushes out the walls of the

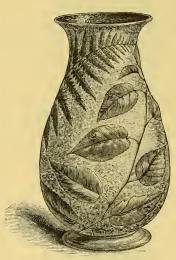


FIG. 18.-THE NATURE-PRINTED VASE.

vase in such a way as to emphasise the forms of the various leaves, and thus add to their artistic effect. Being first allowed to dry thoroughly, the various articles thus decorated are ext coloured by hand in a suitable manner, and lastly fired in the manner peculiar to the special ware which has of late years become connected with the name of Messrs. Doulton. It will be seen at once that by this method of decoration the most accurate representation of natural leaves and flowers can be produced, while endless variation is obtained, no two pieces being quite alike. Moreover, the extreme hardness of the ware in which the articles are produced make the results imperishable. In fact, they remind one of the fossil impressions in coal-beds and other geological strata, and will probably prove as enduring.

CANARINA CAMPANULA. — This Bell - flower, atthough long ago introduced to British gardens, and certaioly worth growingsas greenhouse plant, and which produces its large pendent reddish flowers at a time when flowers are anything but abundant, is but comparatively rarely met with. No difficulty need be experienced in doing it well, as it scarcely requires more care than a Pelargonium. Several good plants are now in bloom in different cool-houses at Kew. A painting of the flower, too, may be seen in picture No. 36 in the "North" Gallery.

FRENCH APRICOTS.

ACCORDING to M. Baltet, whose work on fruit culture we noticed last week, there are three great centres of Apricot production in France-that of Lyons, that of Clermont in Auvergae, where the fruit is preserved in various ways; and that of Avignon. To these may be added the country round Paris and Bordeaux, and the Burgundy district. From one village alone-Bennecourt-in the Paris district, with a population of 850, Apricots were sold to the amount of 200,000 fr. (£8000) in the year 1881, the price ranging from 1 to 1.20 fr. the kilogramme. variety grown, the method of culture, and the mode of disposal of the crop, vary in different cases. At Bennecourt and its neighbourhood the trees are grown on the steep slopes of the hills and in disused quarries, together with Cherries, black Currants, Asparagus, and Peas. The variety principally grown is the "Royal," which is found to be hardier and more productive than others. Its fruit is early and of good quality, and therefore preferred for a dessert fruit to the Triel variety, which is not so good-looking, and which is used for preserving purposes.

Some 8000 to 10,000 trees are grown at Bennecourt grafted on the Almond. The tree is grown in bush or half-standard form, and such is its productiveness that one cultivator is mentioned as having gathered five large basketfuls from one branch. When the Iruit is ripe, about the middle of July, the merchants assemble and make offers for it. They weigh and pack the fruit and despatch it to Paris or to the scaport towns for exportation. The price, of course, varies—a difference of four-and-twenty hours in the period of ripeoing may cause a difference in price of 1 fr. per kilogramme.

Our illustration (fig. 19), for which we have to thank the publisher, shows the sale—quite an official ceremony—the wighing, and packing of the Apricots at Bennecourt, where this industry, originally undertaken on a small scale, has become one of the chief sources of wealth in the district.

New Handen Plants.

ANTHURIUM SPLENDIDUM, Bull.*

HAVING received a good flowering specimen of this distinct and beautiful species from Mr. Bull, who introduced it successfully into cultivation and put it into commerce last year, I am enabled to give a more complete description of the plant than has yet been sublished.

Stem very short and stout. Petioles 4-12 inches long, 3-4 lines thick, terete, with 10-14 membranous wings, which are more or less crisped, especially on the geniculus, olive-green. Lamina cordate, II-16 inches long, 8-I2½ inches broad, bullaterugose, of a rich and brilliant sea-green colour, rather darker along the course of the midrib and veins, apex acute, basal lobes rounded, overlapping or separated 1 inch or more, sinus 2½-4 inches deep, the leaf is 7-nerved at base, the lowermost pair are denuded in the sinus, and give off 2-3 branches, the midrib has 8-to primary lateral ascending slightly curved nerves on each side, all are acute above, and have several narrow wings beneath, partly continued up from the petiole, the edges of the wings and edges of the network veins are mioutely deoticulate; intramarginal vein about 2 lines distant from the margio, continuous or nearly so. Peduncle pale green, 10-12 inches long, $2\frac{1}{2}$ lines thick, narrowly 5 (or more?) winged-angulate. Spathe reflexed, $4\frac{1}{2}$ inches long, I inch broad, lanceolate, gradually tapering from the obliquely inserted amplexicaul base to a fine point, 5-nerved, white, with a delicate pink tinge. Spadix sessile, 4-41 inches long, 3 lines thick at base, tapering, golden-yellow. A native of tropical South America; locality unknown to me. This is unquestionably one of the most strikingly distinct, and at the same time one of the most handsome species of Anthurium in cultivation; not that it can compare with A. Scherzerianum and A. Andreanum for vividness of colour as to its spathes, but the foliage is bold and handsome, and the colour unique so far as my memory serves me, for I do not remember ever to

Bull, Catalogue, 1883, p. 11, f. 3; Gard. Chron. 1883, xix. p. 381, f. 58; Florist and Pomologist, 1883, p. 53.

have seen a green like it in any plant; it is a green that is much heightened by the bullate-rugose surface, and must be seen to be appreciated; the delicately tinted spathe and yellow spadix also make a very effective contrast with it. N. E. Brown.

Lælia Amesiana, n. hybr. Hort., Cattleya maxima (pollen) × Lælia crispa.

"As regards the growth of the plant, it partakes more of Lælia crispa. The longest bulbs are 7 inches, the leaves 11½ inches long by 2½ wide. The bulb is sheathed, like that of Cattleya maxima. We have another plant in bud with three flowers on a truss." These are the ipsissima verba of Mr. Harry Veitch, who sends this freshest novelty, no doubt a Sedenian one. I have a fine peduncle nearly a span long with two flowers, equalling those of a rather good Cattleya maxima, a leaf and a sheath. The flower has sepals and petals nearly as in Lælia crispa -narrow sepals; broad, rhomboid, very wavy petals, all white, but with a delightful lightish rosy hue. The lip has the general shape of that organ in Cattleya maxima, but the colours are more those of Lælia crispa. Of course it is three-lobed, but the side lobes are blunt angled, and with a light mauve-purple border. The wavy, nearly open, broad central lacinia is of the best mauve-purple. Dark veins such as are seen in Lælia crispa I cannot find,

Kefersteiniana grows, the other cousin, Pleurothallis Schiedei, being Mexican. This time it comes from Sir N. de Rothschild, Bart. What a good thing it will be for Orchidology if these little dwarfs, the Stellds and Pleurothalidds, have won the heart of this mighty protector. I had the specimen in hand when another appeared from Mr. Day, but who had not grown it himself, as he states. H. G. Rohb. f.

THE NEW FRUITS OF 1883.

THE year 1883 will long be remembered as the "Apple year;" never on record has there been anything approaching to the extraordinary crop of this important and most useful fruit as that of 1883; never a season in which Apples have appeared in such variety, or in which so much attention has been directed or importance attached to the hetter cultivation and improvement of this chief of English fruits. If the list of novelties introduced-which it is our province here to notice-is not a very lengthy one, it is assuredly a good one. No second-rate fruit was at all admissible during the past season, amongst so much and such varied excellence. If we take those first that were honoured at the National Apple Congress, we have certainly some of the very highest merit. In Grenadier, which is a large conical-shaped fruit, of the Codlin class, with a pale yellow skin,



FIG. 19.—APRICOT SALE BY BEAT OF DRUM. (SEE P. 108.)

The mid-line between the side-lobes is purple to beyond the mid-lobe, the whole remaining part light yellow; border white; column rather thick, white, with a few small purple spots over the base of front side. Pollen masses unequal, finely colouring. Sipes normal. I consider the plant a fine thing. It is named in honour of Mr. F. L. Ames, an enthusiastic lover and collector of Orchids in New England. H. G. Rchb. f.

PLEUROTHALLIS ELACHOPUS, n. sp.*

This neat little gem has short stems, cuneate oblong acute leaves, and a very thin long peduncle, bearing at its end a very few-flowered zigzag raceme ol bivalved light brown flowers, spreading, as in Pleurothallis hians, Lindl., and adorned with numerous brown markings. The lateral sepals are connate upwards near the top, the tepals are rhombic, and the lip is ligulate, with a trulliform anterior lobe.

My first acquaintance with this plant was made in the Hamburg Botanic Garden, where it flowered ten years ago, baving been obtained from the late excellent Wilson Saunders, who believed it came from Venezuela, where the very similar Pleurothallis

* Pleurothallit elachopus, n. sp.—Aff. P. flexuose. Pūpp.
Endl. Carspitosa micropus; folio cuneato oblogo acuto; pedinaculo capillari folium paulo superante vel acquante, apice racemoso
flexuoso; ovariis pedicellatis bracteas parvulas longe superanubus; floribus pendulis seu porrectis coriaceis; sepalis divergenti-bliabiatis; sepalo impari lineari-ligulato fornicato apice
replicato; sepalo pari oblogo gligulato apice didatato bidentato;
tepalis obtusangulo-rhombeis multo brevioribus; labello ante
unguem trullaformi, regione basilari ligulata brevissime sagiitata; columna trigona, apice trifida seu triloba. H. G. R.chb., f.

and extremely handsome, we have an Apple that will, if we mistake not, he largely cultivated. Bramley's Seedling is a variety that has for some time enjoyed a high local repute in Nottinghamshire as a winter culinary fruit, and it is in all respects deserving of its high character. Greatly resembling this last in the appearance of the fruit is Warner's Seedling, from Mr. Warner, of Chelmsford, an altogether first-class variety. Mr. Penny's seedling, the Sandringham, is a large conical green-skinned culinary variety, of great excellence; and from Mr. Tyler, Hereford, we receive Tyler's Kernel, one of the most handsome of Apples, large, conical, highly coloured, and of good cooking quality. Grantonian (Mann) is another cooking Apple that has received honours, although it is in our opinion only second-rate. As an early dessert Apple of the highest excellence Mr. Gladstone has this season secured the "premier" place, thanks to Messrs, Lane and others. variety, although not exactly new, has never had its merits thoroughly recognised. It is decidedly the earliest, if not the best, and withal one of the highest coloured and prettiest of early Apples. Of other prominent sorts special mention must be made of Golden Spire, a truly beautiful pale yellow conical fruit for mid-season kitchen use. Messrs. Cranston also introduce us to the Herefordshire Beaufin, a dark red, medium-sized, flat Apple, stated to possess the merit of not decaying when bruised. Two local Cambridgeshire Apples deserve notice, viz., Histon Favourite and Murfitt's Seedling, the latter a large pale green mid-season fruit, and stated to be an extraordinary cropper. Mr. Moss' seedling, Gospatrick, and Mr.

Iones' (Frogmore) are each possessed of considerable merit. A very distinct variety named Akero, from Mr. Loney, of Gothenburg, attracted our notice, the skin a beautiful peach colour, the flesh white, sweet, and tender. In the Revue Horticole the following sorts are noticed, viz., Double Bon Rammier and Calville Madame Lessans, but not having been tested in this country we cannot speak as to their suitability for this climate.

Of Pears, there is little to be said during the past year, the season being specially unfavourable for them. In the Revue Horticole a variety of the Duchesse d'Angoulême type, named Fondante Thirriot, is noticed as being good in the November season. Plums were equally scarce, the only one of merit coming under our notice being Rivers' Monarch, a variety of the Orleans type, of good quality. In Peaches we have a new French variety, named Belle Henri Pinant, a strong seed-ling of the Grosse Mignonne section, stated to be very excellent; and Alexander, an American variety, as early as the Princess Beatrice, and of superior quality. A decided acquisition for Straw-berries, the Duchess of Edinburgh (Brown), will be found of considerable merit, being large, of fine quality, and a great cropper. Several varieties of Continental origin also claim attention. Raspberry Lord Beaconsfield is a very fine variety, well worthy of introduction. Melons, usually very plentiful, do not give us so much novelty. The Hollanden Favourite of Mr. Goldsmith will be found of high quality, and a good useful sort, and to those who aspire to monster and sensational examples we commend Mr. Rutland's introduction, "The Goodwood," the fruits of which weigh from 20 to 30 lb., and which are, moreover, moderately good in quality. Amongst Filberts, Mr. Cooper's Duke of Edinburgh is a very large and fine variety, and is considered to be a genuine acquisition.

Amongst Grapes, which usually occupy the most prominent position, we can only notify the appearance of a variety named Winter King, from Mr. B. S. Williams. This, which has an ovate-shaped berry, not unlike the Black Alicante in appearance, but of superior quality, is stated to be a graft-hybrid, the result of grafting Gros Colmar on the Raisin de Calabre. Whether this will retain the character assumed, and prove permanently distinct, will require

yet some time to properly determine.

THE NEW VEGETABLES OF 1883.

THE amount of positive novelty attainable amongst vegetables is at all times limited; gradual improvement and progression is, however, generally well manifested, and this has been the case during the past year. It is pleasant to put on record that the year 1883 has been equal to any of its predecessors. Potatos naturally occupy the first place, being at once the most important product of Mother Earth that come within the sphere of the gardeners' art in the vegetable department. That Potatos have been vastly improved during the past ten years or so is a fact that must be patent to every one taking the slightest trouble to think about it. True, we have the old Regent and the old Ashleaf with us still, and which in their way are sometimes unsurpassable, but what of others?-what of the Ashleaf, indeed, as compared with the recent introductions of Mr. Dean? His Midsummer Kidney is earlier than that variety, much larger, yields a better crop, is of better quality, and, above all its other merits, retains its good quality till late in the season; second to this comes his Cosmopolitan. Mr. Ross' Welford Park Kidney is a very handsome white kidney, mid-season, a great cropper, and of excellent quality. Messrs. Perkins' Snowdrop is similar in appearance to Snowflake-the most beautiful of all the American Potatos -but quite distinct, and very superior in quality. Clarke's Maincrop is of the well known Magnum Bonum type—good and trustworthy. Desideratum of Smith is a faintly coloured pink kidney of good quality that promises well; and Mr. Hugh's Beauty of Eydon may be pronounced, as it actually proved, the best quality Potato of the season. It is a broad white kidney-shaped variety and a great cropper. Many other excellent varieties might be noted, but we have here confined ourselves to those which took first honours.

Amongst Lettuces we would direct attention to the Green Unctuous (Verte grasse) submitted by Messrs. Veitch, a close-hearted deep green Cabbage variety; also to Messrs. Vilmorin's white Chauvigny, another

Cabbage variety with large heart, and extra good

quality, standing the summer well.

In Peas there is not so much perhaps to chronicle as usual, still those there are are good. In Mr. Eckford's Duke of Connaught will be found a variety of the Champion of England type of some merit, and from amongst Mr. Laxton's very numerous crosses the Walton Ilero may be considered an acquisition. It is a tall growing deep green Marrow. Other varieties attracting notice and deserving trial are Bliss Abundance and the Stourbridge Marrow.

Amongst Broad Beans, Laxton's John Harrison is a grand variety, having extra large pods; fine for exhibition purposes. And amongst Kidney Beans exhibition purposes. Haricot, Flageolet, Chevrier, having the seeds green, and which remain green after being cooked, are worthy

Amongst Onions the White Globe of Vilmorin, albeit totally distinct from the ordinary White Globe Onion, attracted some notice. The bulbs being of a very regular spherical shape, with a pure white skin, and remarkably firm and solid, were exceedingly handsome. In quality they proved somewhat coarse, and they are found not to keep so well as desirable.

Amongst Turnips the Extra Early Milan Strap-leaf has proved to be several days earlier than the Purpletop Munich, and is, therefore, a welcome and important addition. The Spinach Monstrueuse de Viroflay is a very large-leaved sort, and will be found to yield a much heavier crop than the ordinary variety.

Amongst Vegetable Marrows Muir's Hybrid Marrow, pertaining to the Custard section, is of great merit, being distinct, of fine quality, and an extraordinary cropper. Amongst Cucumbers we have Cardiff Castle, a wonderfully prolific winter sort; Sutton's Purley Park Hero and others; and amongst Tomatos the number of new varieties-all good, if nnt distinct—are simply perplexing. The following may be relied on, viz., Bowerbank's Prolific, a largefruited prolific sort, resembling Trophy; Chiswick Red, a selection from Trophy, but of an entirely different character, the fruits medium-sized, oblong, deep red, and borne in great abundance. A very handsome variety, Henderson's Improved Orange, is a very distinct and beautiful sort, the fruits smooth, round, bright orange, and of excellent quality. What of Tomatos twenty years ago in comparison with Tomatos of the present !

IRIS RETICULATA CYANEA.

Si pacem vis, bellum para—"If you want to be brief take care to be long." [Free translation!] My former note was very short, and by its brevity has misled Mr. Krelage, so I must apologise to him, and

tell a longer story.

Last spring I spent some very pleasant hours in visiting the interesting garden of my friend, the Rev. II. Ewbank, of Ryde, who pointed out to me an Iris (at that season long past flowering) which he had received from Messrs. Haage & Schmidt under the name of I. reticulata cyanea. Being not wholly ignorant of the nomenclature of Irises, I said at once, "I suppose that that is I. histrio?" "No," he replied, "quite different from histrio-a real reticulata, and a very beautiful thing." The result was, that in the autumn I purchased a few bulbs from Messrs. Haage & Schmidt, and now I see them in flower I regret that my knowledge of Indian synonymy preventing my purchasing them the year before has deprived me of a year's pleasure, for the flower is really very charming. I can assure Mr. Krelage that it is not I. histrio, but, as I said in my former note, in form a characteristic I. reticulata Krelagei, with sky-blue standards and stigmas, and when Mr. Krelage sees it I think he will say that it is worthy and fit to hear the name Krelagei. The additional word cyanea is misleading; the shade of blue is not cyanic, using that word even in the German sense; a more appropriate though lengthy name would be I. reticulata Krelagei cœrulea.

Since I wrote my former note I have learnt from my friend Dr. Raddé, of Tiflis, that he has a skyblue (hellblan) I. reticulata growing there. Now, the I. reticulata which grows round Tiflis and in the Caucasus generally is of the Krelagei form; hence most probably the Iris of which we are speaking has been inported from that district. I have been led to understand that the lamented Mr. Nelson raised a sky-blue seedling I. reticulata; but I also understand that he worked only with the typical I. reticulata; so

that when his seedling is distributed (as I trust it will be after a while) we shall have sky-blue varieties both of the typical form and of the Krelagei variety.

The sentence io my former note about the earliness, with me, of the Krelagei variety was intended as a feeler. What Mr. Krelage says about the early flowering of imported bulbs which have been thoroughly well ripened under a warmer and steadier sun than ours is perfectly true; I have often had experience of it. But that hardly explains the case in point. have grown I. reticulata for several years, and have flowering seedlings of my own raising; in all these I have repeatedly observed a tendency for the Krelagei variety to be early with me, under very various conditions of soil, situation, &c. The reason why I call attention to this circumstance is this :- The Krelagei variety finds itself much more at home with me than does the typical form, or 1. histrio (which is in reality a strongly marked variety of reticulata). I have to take trouble to keep the typical I. reticulata and I. histrio in good condition; the variety Krelagei takes care of itself. And while, on my bleak hill, the two former bloom later than in many other places, my Krelagei is frequently ahead of plants growing in places which in other respects are horticultural paradises compared to my desolate patch. And in the case of other plants I have made the same observation. The few flowers which do well with me, all tend to flower early. Conversely the plants which do not like my soil and situation, if they flower at all flower late. For instance, I cannot grow Lilium auratum or L. speciosum. If I put them in the sun they are dried up or blown to pieces. If I put them where they will best get damp and shelter, the autumn frosts cut them down before their buds are fully grown. am inclined to think this earliness of plants which "find themselves at home" is not confined to my own garden, though possibly the fact is more striking with me than elsewhere, because I have a greater choice of adverse conditions to serve as a good background for "throwing up" a success. A misprint in the last word of my former note takes away all the point from a poor little joke; for "Iridophils" read "Leucophils." M. Foster, Shelford.

HEATHERBANK, WEYBRIDGE.

In his pretty home garden, and in its several extensive dependencies, Mr. G. F. Wilson has done much to extend the culture of hardy plants, and the results of the bold experiments which he is now carrying out on so large a scale, and most of which bid fair to be successful, are being looked forward to by many, and will, no doubt, be productive of much useful information on their peculiarities, likes and dislikes. The Heatherbank garden is not used as an experimental ground, but is arranged in the ordinary neat manner with smoothly kept lawn, trim beds, fine specimens of rare coniferous and other hardy shrubs, Lilies everywhere, conservatory and other plant houses, some of which are devoted to Orchids. These by their vigour and general good health proclaim that they are quite at home, and that they do not want a trained cultivator to look after them. A glance at the beautiful specimen arranged in Mr. Wilson's flowering Orchid-house just now offers a good argument for the cultivation of Orchids even on a small scale. The plants are stated to receive ralatively little attention, and the wealth of lovely flowers which is generally to be found there gives abundant

interest for the pains taken.

Many fine paos of Coelogyne cristata are there, the foliage partially hidden by the snowy blooms. Many Odontoglossum Alexandræ of the best forms, one having two spikes of a dozen and a-half flowers each, and several having from ten to sixteen fine blooms of the best shape, size, and substance. A grand form of Odontoglossum Andersonianum is also in bloom, with one long unbranched and another very much branched spike; it is a pretty variety, having nicely spotted flowers, with lemon-yellow margins. Others well in bloom are Odontoglossum pulchellum, O. Karwinskii, O. odoratum, O. Pescatorei, O. triumphans, O. Rossi majus, O. Cervantesii, O. Halli, Coelogyne Rossi majus, flaccida, C. Gardneriana, Ada aurantiaca, Pilumna fragraus, Cypripediums, Masdevallias, &c. On a shelf in a shady corner of an intermediate-house Odontoglossum Phalænopsis is doing much better than it is usually seen, and promises well for flower, and some fine pots of Eucharis candida (one with ten flower-spikes) and Lachenalias do not seem at all out of place among the Orchids. It would also not be

fair to turn from Heatherbank without noticing its famed garden cat, Fat Tommy, whose portrait has been given in the Gardeners' Chronicle, but he has become so much fatter that he has outgrown his portrait.

Near at hand is the cottage garden, devoted to the culture of vegetables, fruits, and hardy flowers, and in it are some substantial orchard-houses filled with fruit trees in pots, all of them being in fine health and good bearing order, notwithstanding that many of them are from twenty to thirty years old; they are, of course, rarely potted, but annually top-dressed, and liberally fed with liquid manure while making their wood. In the borders of the cottage garden there is, even now, no lack of bright flowers, the fine strain of coloured Primroses, many of them of a violet hue, and others of a fine velvety crimson, furnishing them in profusion, and the bed of Winter Aconites presenting a sheet of bright yellow. The Snowdrops, Crocuses, Hellebores, Wallflowers, and other spring flowers seem to have settled it that we are not to have much hard weather, and have decked themselves in their gay clothing accordingly. At the out-skirt of the garden proper a fresh extension has been devoted to dwarf-growing but rambling plants, such as Vinca minor, some Saxifrages, Aubrietias, dwarf Hypericums, &c., and these are each allotted a separate mound about 6 feet across. They all seem to appreciate their allotments, and many of them have already covered the space devoted to them, and presented themselves in quite a new aspect. Further on is a rootery, which displays to advantage the proper use of such material in making a raised garden. Instead of being planted with mixed plants, as is usual, it is furnished with Skimmias, Andromedas, Sedums, Pernettyas, &c., most of which are evergreen, and thus the beauty is maintained all the year round. Beyond is a bed of Pernettyas with scarcely a berry on them, in consequence of their being planted under trees which excludes the light from them; at least, that is the inference, for the large bed of them planted in a more open place in the Wisley garden is beautifully berried-a circumstance which proves that even the situation in which a plant is placed in the same garden often involves a question of success or failure.

On the pond still floats the Wilson raft with its living freight of Iris, Bog Myrtle, and other marsh plants, and near by is a grand mass of Lygodium palmatum in good leafage, and without the slightest protection. In this garden Mr. Wilson has arranged a cheap house for Lilies in pots in what he considers the best way to insure success in their culture. It is merely a pit dug out with a sloping path cut down to it, and one of those stout span-roofed frames which are now so easily to be got placed over the pit. The plants are stood on boards in the bottom of the pit, and Mr. Wilson considers that the shade and cool thus secured in summer give the great elements for successful Lily culture in pots. Such a house could be easily made with old garden lights, and Todeas and many cold Orchids would no doubt thrive in it if constructed in a sheltered spot and properly managed.

OAKWOOD, WISLEY .- Four miles as the crow flies from Heatherbank, through woods of Pine and Oak with undergrowth of Heather and Bracken and open spaces covered with Gorse and forming excellent lungs for Mr. Wilson's gardens-is the Lily El Dorado and Garden io a Wood. It is very happily constituted, the soil in many parts being composed of the rich vegetable deposit of ages, while in other parts loam, peat, gravel, or any other soil that can be desired is found. This condition of things permits Mr. Wilson to make use to the fullest extent of his extensive knowledge of the requirements of different classes of plants-a privilege of which he has been most skilful in availing himself. Under the shade of the trees, and further protected by the shelter of the Rhododendrons, which seed and come up freely all around, are planted large patches of Lilies, over 100,000 of which luxuriate in this natural garden, the remaining old flower-stems showing plainly how well they thriven, and promising a grand spectacle for the coming season. All the varieties are represented in quantity, but it is needless to say that L. auratum and its varieties predominate. To such perfection does this variety attain that Mr. Wilson has had as many as five flower-spikes from one bulb.

At the entrance Jasminum nudiflorum gives masses of bloom, and in the front border Primula denticulata, P. acaulis and its varieties, Omphalodes verna, Crocus Imperati, Snowdrops, &c., give plenty of bright blooms, and lead up to the new Fern rockery, in which a giant form of Polystichum Ionchitis (Holly

Fern), Asplenium viride, A. Adiantum nigrum variegatum, Allosorus crispus, and other generally called "miffy" plants are doing well. With respect to the last-named (the Parsley Fern), Mr. Wilson finds it succeeds best with a piece of sandstone placed on its crown; this protects it, and it comes out with renewed vigour beyond. At the edge of the wood many greenhouse plants are being tried planted out and merely protected by hurdles or screens of Gorse. Shelter No. 1 contains a complete set of vigorous Sikkim Rhododendrous and Lapageria alba; No. 2 an immeose well-budded Camellia Marchioness of Exeter, 10 feet across and 10 feet in height-this is backed by a glass screen, and merely protected on the two sides by Gorse; No. 3 has Indian Azaleas; No. 4 Epacris, in fine health, and many of them in bloom; No. 5 small Camellias; and No. 6 Azaleas. All these show signs of increased vigour since planting, and promise interesting results.

In the bog garden the Sedums, Andromedas, Vacciniums, Gaultherias, Lingæa borealis (both the American and small-leaved Scotch varieties). Pernettyas, &c., are growing wild, the latter being covered with their variously tinted berries. The Mexican bulbs, which have puzzled so many, are heing well handled by Mr. Wilson, who has prepared beds for them and protected them with Heather. The tuberous Begonias are succeeding well on a mound sheltered by an immense spreading Rhododendron. In the lake, which is spanned by a rustic bridge, Aponogeton distachyon has become a beautiful weed, and at its margin large clumps of Cypripedium spectabile, Sarracenia purpurea, Darlingtonia californica, seem to give a hearty approval of their quarters; while on the higher ground the Gentians, Saxifrages, and other plants of a like nature thrive equally well. The order of the day with Mr. Wilson seems to be "A place for everything, and everything in its place," and thus the patches of Goodyera repens, G. japonica, Epigæa repens, and other allied plants, which have made such sound patches in the wood, would probably but have dwindled if placed in exposed situations.

A great feature in this garden, too, is the extensive space of nursery and trial ground on the hill-side, made up of scores of separate cribs burdled off, and in which the Meconopsis and scores of other reputed delicate plants are doing as well as they could in their native homes. Among the innumerable subjects, which are in grand health, too, in Mr. Wilson's interesting garden, and of which many will like to hear, are Convolvulus Cneorum, all the Abelias, Azalea amena, Cyclamens, Kniphofa caulesceos, Phormium tenax, and an immense Eryngium pandanifolium. Mr. Wilson is doing good work by making bold experiments with impunity by reason of his having to work the matters out on sound pricciples beforehand. It must be pleasant to him to know that his son, who is assiduously studying botany and ornithology, is as great a lover of the garden as he is himself.

NOTES ON VEGETABLES.

EARLY POTATOS .- Whilst to those who have large quantities of Potatos in store a hard winter naturally has its terrors, a soft one is not without its difficulties, because then the earlier kinds refuse to remain at rest. Were it possible to devise some form of Potato store wherein the temperature should range from 33° to 36°, the tubers would remain dormant for a very lengtheded period, but it is just possible that so regularly low a temperature might in time be productive of deterioration. Huge stores, or deep vast cellars, may furnish a temperature that is fairly equable, but to the mass of Potato-holders such giant stores are impossible. The best must be made of whatsoever places may be at disposal, be they fruitrooms, sheds, or outhouses, and conditions must, as far as possible, be made adaptable to seasons. The present open winter very severely tests the staying powers of early Potatos; and those who secured stocks for planting have been wise, as in such case they can easily keep their limited quantities in sound form and from undue forcing. For this reason it is wise on the part of purchasers of early sorts of Potatos to procure their stocks in the autumn-say during the month of November-and then, if the sets be placed in shallow boxes, and well exposed to the air, they will in March or April be in the very best possible condition for planting. There is ofttimes a half-expressed fear that if seed-tubers be purchased early some danger is incurred of getting partly diseased ones. As most of the early kinds are lifted in

August there remains three months prior to November during which the disease can operate, and if not then evident, it is fair to assume that the tubers are permanently good. In many cases where early kinds lie in bulk they push growth if the winter be mild, and thus much is lost to the purchaser, as these shoots will certainly be removed ere the tubers are sent out.

SANDER'S AUTUMN MAMMOTH BROCCOLI. — I send you four heads of this Broccoli, which I can safely say is one of the best varieties for winter use that can be grown. I have been cutting from eight 13 sixteen dozen per week since the 1st of October, and have to-day cut ten dozen, of which those I send you are a sample. C. F. Pranguell, Kensington and Chelica District Schoolt, Banstead. [The heads received were of good size, compact, very white, and very delicate when cooked. Et.].

MAJOR CLARKE'S CELERY.—I have no doubt our garden committee, judging from the general appearance, considered the two Celeries too near to be classed as distinct sorts, but alter a careful trial of them, side by side, in my own garden, I found they were certainly not so. Whether my view is right or not, the public will choose the best, whichever it may he, and I do not care to say anything more on the subject. Our sort is to be had pure from several firms, so the two kinds may be compared this season by those who desire it. R. T. Clarke.

ORCHID CULTIVATION FOR AMATEURS.—IV.

An amateur Orchid grower writes :- " It is most difficult for the inexperienced to divide Orchids in relation to heat and ventilation, and with the growing interest now felt in Orchids I am sure rudimentary instructions of a practical kind would be most acceptable. For example, if we knew what difference of treatment should be adopted with regard to the Odontoglossums (of various kinds), the Dendrobiums, Oncidiums, &c., such information would much encourage myself and other amateur cultivators." Now this communication seems to assume that the species of different genera of Orchids will succeed equally well under the same treatment. This, however, is not so, for of all genera some at least require some difference of treatment, but the difference necessary is in detail rather than in broad or general treatment, For example, you may build say a Cattleya-house, but all the species of Cattleya will not flourish in it equally well. C. Dowiana, C. aurea, C. amethystoglossa, and others, will require a little more heat than the rank and file of the species; and then C. citrina and Lælia majalis, L. autumnalis, L. fursuracea, &c., will require a cooler and more airy house. Cattleya or intermediate-house proper may have a minimum of 50°, and any reasonable maximum if raised by sun-heat only.

Then, of Odontoglossums and Masdevallias, a cool house (40° minimum to 65° maximum), with much moisture, will grow most of the kinds well, but we have a few exceptions—Odontoglossum grande, O. Iusleayi and its varieties leopardinum and Schleiperianum, O. Krameri, O. citrosmum, O. hastilabium, O. leve, O. Rozeili, O. vexillarium, &c., will grow best in a house having 50° minimum. They will do in the "Cattleya-house," with the difference that when growing they require much more moisture at the roots than is good for Cattleyas.

As to watering Orchids we shall say more in detail, and especially with reference to the manner of potting, for it is not so much the amount of water poured on to the surface of the compost as the amount of water retained by the compost that deserves notice. Most of the cooler growing of mountain Orchids (such as Odontoglots and Masdevallias) like the compost always moist; the same is true of such epiphytal Orchids as have no pseudobulbs (such as Cypripedium, Phalænopsis, Acrides, Vanda, and Angræcum). and Lælias are not so impatient of water as many suppose if properly potted or arranged in baskets. they like especially is sunshine partially broken during summer, and plenty of air, and very little compost, that little to be of the very best, and arranged on a well drained base of crocks and charcoal. A close, hot and "stuffy" atmosphere is death to Cattleyas; they must have air, and if the compost is firm or dense and sweet they like root moisture in plenty during the annual period of their growth. After Cat-tleyas have "mide up" their growth—that is, when

the growths have attained their fullest length, and the pseudobulbs have plumped themselves out firm and strong—allow the compost to dry up a little, and let the plants enjoy a few weeks of rest. Some growers do not do this, and even boast of their Cattleyrs making two growths during the year, but one good strong growth is enough, and better than the two made under the excitement of constant moisture.

In speaking of "resting" Orchids we must be a little precise. We may rest our pseudobulhous Orchids in various ways:-1. By allowing the compost to become comparatively dry (but not so much as to induce shrivelling) after the season's growth is completely made up. 2. By removing such plants for a time to a cooler and more airy atmosphere. Thus some few Orchids of the cool-house class might be rested in a cold frame, or even out-of-doors, since Mr. Smee tells us that Odontoglossum Alexandræ and O. Rossii withstood 8° and 11° of frost respectively in his garden at Wallington. 3. By cutting th showers as soon as, or soon after, they have attained their full beauty. The old plan of growing Orchids in a hot and shady tunnel during daytime, at d if firing up" during night, is, I hope, now exploded, and with it the "resting" necessitated by such an unnatural course of culture—a combination of "roasting and baking," alike wrong in practice and in principle. Because Nature does sometimes shrivel up her Orchids in exposed positions in the tropics during the dry monsoon, it does not follow that the plants even there (under other conditions natural to them). are benefited by the vagaries of climate. Indeed they are not so benefited any more than are English meadows by a dry and scorching summer-time, or than are our native Daisies and Buttercups by a frost below zero. Let us ask ourselves, What is a pseudobulb after all? A storehouse—a savings bank in fact of acquired capital, no doubt in the first instance developed from the petioles or leaf-stalks, to enable the plant to exist under wide extremes of temperature and moisture. Here is Nature herself supplying the Orchid with a compensation clause, or in other words she enables many of them by means of these stores, or savings banks-masses of cellular tissic filled with potential food, to prepare for and guard against a bad time. As we before said, although Nature shrivelled up her Orchids and their pseudohulbs, such shrivelling is an actual loss of the capital originally intended to enable the plant to meet calls on its energy at flowering or seeding time, or to live on through occasional periods when climate and seasons get a little awry.

There is no "royal road" to Orchid culture except the long one of observation and experience, and it is along this route alone that the goal of an amateur's hopes are to be most surely reached. There is in Orchid culture no chance of a short cut, unless, indeed, as now and then happens wealth is added to intellagence. Some amateurs manage to get "over the garden wall," as it were, in this way, but after all there is a quiet enjoyment and a modera'e success to be had without purse rivalry, by all amateurs who are so minded.

Now, in reference to heat, I made a few general remarks in my second paper; as to ventilation, care. fully note what Dr. Paterson says, and do not be afraid of giving air when the outside temperature is at or over 50° Fahr. En fassant, I may say that our method of ventilating all plant-houses is a little cruce and faulty. Side sashes which open are an especi: I nuisance unless the entire openings are covered with perforated zinc or canvas tightly strained. So al o when ventilation is given by the opening of outer doors, the influx of a draughty body of cold air should be prevented by a light framework, on which coarse hempen or paperhangers' canvas is tightly strained. Instead of a few large openings at intervals being made in the brickwork of Orchid-houses near to the ground level, it would be better to make such openings smaller, and as nearly continuous as possible, carrying them around both sides and ends of the houses. Such openings should be at least a few inches below the hot-water pipes, and should be covered with perforated zinc inside, and wooden slides outside, in the usual way. F. IV. B.

GARRYA ELLIFTICA.—The elegant tassels of this hardy shrub were noticed in full bloom a few days ago at Kew. It is one of the most charming and distinct of hardy shrubs, but too tately seen. The female plant is still rarer, but its flowers are less conspicuous.

HOWICK HALL, NORTHUMBER-

THIS fine estate and princely mansion, the residence of Earl Grey, is situated on the coast of the North Sea, from which the residence itself is distant about a mile. The house, which is of a fine warmcoloured sandstone, dates back to the first years of this century, and lies embosomed in woods, chiefly Beech, of growth older than itself, and on the edge of a moderate declivity. To the south the view is partially open, stretching over a wooded park to a wild piece of rising ground about a mile distant. Owing to the prevailing level nature of the land close to the site, views of any great extent from the house or its vicinity are an impossibility, and the sea view, which would be the finest, was purposely planted out, perhaps with the intention of getting shelter from the fierce blasts that blow from east and north-east, so that personal comfort and the well-being of the choicer plants and trees and gardening generally were obtained at the sacrifice of the only extensive prospect available. This is a matter that we find is very often wilfully ignored by some of the landscape gardeners of the present, detracting thereby considerably from the enjoyableness of gardens and pleasure-grounds, rendering the growth of many things impossible, and

conducing to the well-being of none.

Immediately in front of the mansion looking south the ground slopes away gently to a babbling burn, coursing over its rocky bed; thence on the opposite side of the stream it rises easily, till the level plateau of the park is reached. The fall of the ground in this portion of the garden perhaps suggested the idea of a terrace garden being constructed at this point; at any rate, advantage was taken of it to make a terrace garden of two levels. This was done about forty years ago, and remains intact in its principal features to the present day. The terrace that is attached to the house is of a width of perhaps 15 paces, and the the house is of a width of perhaps is places, and the length of the main building. Steps carry the visitor from either end and from the centre down to the level of the first flower parterre. The garden here may be divided into three main divisions, i.e., a flower-plot on the above-named level, at each end of the terrace, consisting of rather intricate beds edged with Box on gravel, the surrounding margin of turf having a goodsized bed at each of the four corners of the parallelogram. Bedding plants of the usual kinds fill all the beds on the gravel, and some perennials those at the corners, such as Roses, Madame Despres, Fellemberg Noisette, Fuchsia globosa, and Aloysia citriodora. The lower platean, which is also the larger, consists mainly of turf, divided into two equal portions by a water basin and fountain, and the cross walk. The middle portion of each half is arranged as a flower plot, with beds of a simple form, which are annually filled with bedding plants. Formerly these beds were margined with broad belts of Campanula pulla, C. pulla alba, Gentiana acaulis, Fairy Roses, and Hepaticas; but these have now made way for the more formal, although less pleasing, edging of tender plants. At the outskirts of this plateau, which usually looks particularly showy when the summer is favourable to bedding-out gardening in this notoriously rough climate, are planted groups of Rhododendrons and Roses.

Immediately under the terrace wall is a narrow border of beds edged with Box, in the Greek key pattern. These were filled with a variety of bedding plants, of a character rather too large for such narrow, confined beds; then a strip of gravel, and next a narrow margin of turf to the broad gravel road.

On two sides of the mansion are small old-fashioned gardens, planted with a very heterogeneous collection of perennials, and some summer bedders, the latter being happily in the minority-Gladioli, hardy Heaths, Aubrietias, Kalmias, Lilies, Phloxes, Anemone japonica, Pyrus coccinea, Roses, and such like hardy things, the general effect of these being quite unique. These gardens were probably in existeace when the more pretentious terrace-gardens were constructed, and have remained with but little alteration ever since. A good opportunity was lost of constructing a pretty natural garden scene in the hollow, where the terrace gardens now stand. Everything was there-undulating ground, running water, good shelter, and fine trees.

The conservatory, a building standing on the east side of the mansion, and being really the connecting corridor with the stables, is a rather heavy building of

thick stone walls covered with a lofty iron roof. The approach from the outside is through one of those before-mentioned old-fashioned gardens. It contains a nice collection of Camellias, planted out; some Palms, Citrons, Rhododendrons, large Fuchsias, and is well supplied with flowering plants of the popular

On the north side of the mansion, facing the carriage portal, is an enormous group of Rhododendrons, which occupies the middle part of about an acre of gravel. The sorts are chiefly R. ponticum and its hybrids, and must make a fine display in the flowering season.

The kitchen gardens lie to the north-west from the Hall, several hundred yards distant, and are completely screened from observation in that direction by tall trees and a large undergrowth of Portugal Laurel, Rhododendrous, and other shrubs. To reach these gardens another and an older flower garden is entered,

such places. An especially pleasing feature was the unstudied negligence in which all kinds of creepers were allowed to grow about these houses.

The vineries were filled with good vigorous can that were bearing more than a good crop of Gros Colmar, Alicante, and Black Hamburgh Grapes. The earliest crops of Grapes are grown in low pits, in which they are planted in narrow borders, and under which management they produce very fair crops. When these early Vines show signs of exhaustion they are replaced with other fruiting canes. Many other similar pits were filled with Melous, Cucumbers, and small plants for a variety of purposes.

The kitchen gardens consist of about 3 acres within walls 14 feet high, and a partially walled-in piece of half that extent. These gardens have long been celebrated for their culinary produce, and are still as good as formerly. The south border is a very fine one, of about 130 yards long by 14 yards wide, exclusive



FIG. 20.—CEPHALOTAXUS PEDUNCULATA, VAR. FASTIGIATA: THE LOWER FIGURE SHOWS A SPORTING BRANCH IN WHICH THE LEAVES WERE 2-RANKED. (SEE P. 113.)

with an area of about r1 acre. A border of big shrubs bounds this on two of its sides, a range of glasshouses, behind which is the forcing ground, bounds it on the north, and the high wall of the kitchen garden on the west side. The most noticeable features in this part were a very large rectangular mass of Fuchsia Riccartoni, which occupies the middle of the garden—in splendid bloom at the time of our visit and inside of a tall Rose arcade; and the great borders for herbaceous plants, which must be several hundred yards in total length. These borders were filled with a choice collection of hardy perennials, as well as with tenderer plants. Phloxes, Dahlias of all kinds, Salvias, Lilies, were at their best at the time of our visit, and made a wonderfully fine effect. The rest of this garden consists of two large grass plots, on which are a few shrubs, and a fine example of Juniperus lycia, growing, it is said, in about 2 feet of loam overlying the whinstone rock. The tree is about 40 feet in height, and of a beautifully graceful

The plant-stove and cool greenhouse contain a very well managed collection of the usual occupants of

of the hreadth reserved for the roots of the Peach and other trees. This border has a considerable slope, and is famous for raising early crops of the best quality. The whole garden is of oblong shape, and is divided into four quarters by the intersecting roads—a road running round it, but at less distance from the other walls than from the north one. Much espalier and hush fruit is grown, and the walls are very well covered with trees in bearing condition. Pears do exceedingly well on the walls, and but rarely away from them. The north wall, which is flued, produces capital Peaches, Nectarioes, and Figs; the largest trei of the Brown Turkey variety, and is now about 20 yards long by a yards high. Apricots are also grown, but Mr. Ingliss told me they are the least satisfactory of his wall fruits. On the other south wall in the partially walled—in piece the best kinds of Pears are grown, and on a ha-ha wall were several kinds of Apples. and is famous for raising early crops of the best quality. The whole garden is of oblong shape, and is

Pears are grown, and on a na-ha wall were several kinds of Apples.

During Mr. Ingliss' time much has been done to modernise and improve the houses and adjuncts to the gardens, such as fruit-rooms, Mushroom-house, glass-houses, vineries, and beating; all and everything have been overhauled and much improved under his intelligent management. M.

The Arboretum.

CEPHALOTAXUS, —This is a genus of Conifers which, from the fleshy seed, resembling those of Yews, and the aggregation of the female flowers into stalked heads, has received the name above quoted. The resemblance to Yews is great in the foliage, but that of the seed is fallacious. In the Yew the fleshy cup surrounding the seed is a sort of disc that grows up around the seed. In Cephalotaxus the coat of the seed itself becomes fleshy, as in Cycas—indeed, the genus, like Giogko, forms a link between Conifere and Cycadeæ. Most people—and very naturally—would call the seed a fruit or a berry, of which it has all the external appearance; but a fruit and a berry are developments of the ovary, and contain the seed: here, as in other Conifers, the seed is never enclosed within any ovary. The fleshy seed here corresponds to the winged seed of Pious, though so different in appearance, and although not protected by a woody scale, as in most other Conifers.

In British gardeas the species of Cephalotaxus form a small group of hardy evergreen shrubs or low trees, of which C. Fortunei is the best adapted to our climate, and is really a handsome plumose looking tree. The erect form (var. fastigiata) of C. pedunculata, too, may be used wherey the Irish Yew is employed, and is, indeed, bolder in character, while in a small state it does well for window-boxes or winter bedding.

In the last complete systematic revision of Coniferæ by Parlatore, in De Candolle's Prodromus, xvi., p. 503 (1868), a description of three species is given as fully as the material at hand permitted, and two others are mentioned as doubtful. The three better known species are the following :- 1, C. pedunculata of Siebold and Zuccarini, of which the male plant only has been hitherto described; 2, C. Fortunei of Hooker, a native of China, of which both male and so-called female plants are described; and 3, C. drupacea of Siebold and Zuccarini, a native of Japan of which both sexes are described. Parlatore adds little or nothing to what his predecessors had published, and repeats the description of the two species of Siebold given, with excellent illustrations, in Siebold and Zuccarini's Flora Japonica, vol. ii, tab. 130, 131, 133. The male plant of C. Fortunei, collected in Northern China by Fortune, was named and figured by the late Sir William Hooker in the Botanical Magazine, t. 4499. Subsequent writers have for the most part simply transcribed from these original authorities, and have added no fresh information.

There is some doubt as to whether C. drupacea and C. pedunculata may not be forms of one and the same species, as in native specimens in herbaria the two forms undoubtedly do run one into the other, but for garden purposes they may be kept distinct, as they may generally be readily recognised. Considerable doubt also exists as to whether the female plant of the true C. Fortunei (though existing in herbaria), is really in cultivation, the plant usually so-called belonging apparently to C. pedunculata. Latterly, too, another female plant has been brought to light in the garden of the Rev. J. Goring, which differs from any previously described, particularly in the seed. As a rough and ready means of distinguishing the cultivated plants we may call attention to the differences in the leaves, the buds and the berry-like seed. The main differences as to the leaves may be thus expressed:—

Leaves, $1-1\frac{1}{2}$ inch long drupacea. Leaves, $1\frac{1}{2}-2$ inches long . . . pedunculata. Leaves, 2-4 inches long . . . Fortunei

C. DRUPACEA in Eritish gardens is the dwarfest form, forming a low bush with greenish-yellow shoots and leaves. The latter are very generally upturned, and this not only when the flowers are being produced, but also on the sterile branches, so that the two rows of leaves thus form a trough along the upper side of the branches. The individual leaves do not greatly exceed 1 inch in length, and are about \(\frac{1}{2} \) inch in width, almost perfectly linear and straight-sided, rarely falcate, abruptly pointed at the tip, rounded at the base, with a very short petiole. The male catkins are stalked, each stalk immediately after its origin in the axil of the leaf being abruptly bent downwards out of the way of the leaves. The stalk of the male catkins is about \(\frac{1}{2} \) in the long, about the same length as the minute globose catkins them-

selves, and covered with overlapping ovate acute bracts which pass into the scales of the catkin. The scales of the terminal leaf-bud of the shoot are almost all distinctly acuminate. The seed-bearing peduncles in the native specimens are approximate, and the



FIG. 21.—CEPHALOTAXUS FORTUNEI, LEADER-SHOOT WITH



FIG. 22.—SEED-BEARING SHOOT OF CEPHALOTAXUS PEDUNCULATA. SEEDS OLIVE COLOURED.

berry-like seed itself ovoid. We have a rough sketch of the seed of this plant, derived probably from the garden of the late Sir Frederick Pollock, at Hounslow. Is is ovoid, and rather pointed at both ends, smaller than in pedunculata proper. In Japan, where it is often cultivated, it is said to form a spreading tree of small stature. No Chinese specimens are in the Kew Herbarium; but Messrs. Veitch, in their Manual, mention it as having been discovered in North China

by Mr. Fortune in 1849, but Fortune does not mention it in his communications on the subject in this journal, and we suspect Fortune's plant may have been the true C. pedanculata.

C. PEDUNCULATA (S. & Z.) is in gardens a larger growing form than the preceding, with greenish shoots, dark green subsessile leaves, spreading horizontally, each about 11 to 2 inches long, 1 inch wide, flat or slightly recurved, straight or slightly falcate, ovate-acute at the tip, scarcely acuminate, rounded, or scarcely tapering, at the base. The termical leaf-bud has oblong scales, the lower ones sometimes distinctly acuminate, the upper ones obtuse, or scarcely at all acuminate. The stalks of the male catkins are inch long, longer than the top-shaped catkins, and much less markedly reflexed than in C. drupacea, and the catkins themselves are also larger. The female plant is not described by Siebold and Zuccarini, nor by Parlatore; but, so far as I have seen, all the female plants referred to C. Fortunei, except one to be hereafter mentioned, belong here. The stalks are about 1 inch long, deflexed, remote, or approximate, the seeds themselves ovoid, obtuse at both ends, and rather longer than the stalks, fawn-coloured (see fig. 22). It is the Taxus Harringtoni of the Pinetum Woburnense, t. 65 (leaves only), and the Cephalotaxus Fortunei of the Fournal of Horticulture, Sept. 13,

Presuming that the C. Fortunei Q of gardens is really the female of the present species, or of C. drupacea, it may be mentioned that Messrs. Paul & Son, Cheshunt, recorded the fruitiog of this plant in these columns in November, 1863. Thuse gentlemen remarked that the plant stood 5 yards away from the male plant, but that no male flowers had been produced; hence they considered it possible that the female had been fertilised by the pollen of the golden or of the common Yew. It would have been interesting had they been able to raise a cross between these plants. They describe the fruit as brown, longish, about the size of a linuet's egg, with a thick, tough skin and a gummy pulp. They mention that it had fruited at Orleans. Fortune, in the following number, November 28, p. 1134, alluding to this communication, says that he doubted whether the female plant that was produced from seed sent home by him was really C. Fortunei-a conclusion we had arrived at from the examination of specimens in gardens before we became aware of the existence of Fortune's note. above referred to. On his second visit to China he ascertained that this female was quite distinct from Fortunei, and appeared new to science. If we are right in referring this to pedunculata, then China must be given as a habitat for this plant in addition to Japan; but there is no evidence of this in the

Var. Jastigiata.—This is a curious variety, in which the shoots are upright, like those of the Irish Yew, and the leaves, in place of being in two ranks, are scattered spirally round the stem. The leaves are like those of pedunculata, but darker, and the scales of the terminal leaf-buds are all markedly acuminate—circumstances which would rather lead to the inference that this was a form of C. Fortunei rather than of C. pedunculata. Carrière and Veitch, however, both include it under this species, and both cite instances of sports in which C. fastigiata had developed shoots of C. pedunculata (Veitch, Namual, p. 309). We have ourselves seen a similar sport in the Arboretum at Kew (see fig. 20, p. 112), and, moreover, have seen the converse change of C. pedunculata, sporting into the fastigiate variety. This fastigiate variety is the Podocarpus korainous and the Taxus japonica of gardens, and the Cephalotaxus Buergerio of Miquel!

Var.spheralis, Mast.* (see fig. 23, p. 117).—We have now to mention a form which was originally shown at one of the meetings of the Scientific Committee, from the garden of the Rev. J. Goring, of Steyning, Sussex, by Sir Joseph Holoker. The specimens were obligingly put into the hands of the present writer for examination, and Mr. Goring was good enough to furnish the artist with further specimens from which the figure was taken. The plant seems to differ from peduculata principally in the globular, berry-like seeds, unlike anything yet described in the genus. The shoots, moreover, have a brownish-chestnut

^{*} C. PEDUNCULATA (Sies, et Zucc.) var. sphæralis, nov. var.
—Ramis pallide castanets; novellis viridibus glabris; follis 1½
—2 pollic, lineari-falcatis sensim acuminatis-planis vel leviter acruatis; genmarum terminalium squamis oblogis acutis, haud acuminatis, ameotis mascullis . pedunculis semi-nierus versus basis ranultorum agergeatis ½ poll. long, semini-bus drupaceis sphæricis parum brevicribus. Ex hort, Gorung, cuté fig. 23.

colour. As the foliage is so like that of C. pedunculata we have felt some hesitation in making this the type of a new species, preferring to consider it as a variety merely. In the future, when further information becomes available, this judgment can be revised as may be necessary. In the meantime we think it very probable that this is the female plant above referred to, which Fortune met with on his second journey (Gard. Chron. 1863, p. 1134), and which appeared to him to be "new to science." Be this as it may Mr. Goring obtained both trees (pedunculata true), and the present one (pedunculata spheralis), from Bagshot in 1855 or 1866, under the name of C. Fortunei, but certainly neither of them seems cutilted to that appellation.

Even in the mild climate of Worthing these plants

Even in the mild climate of Worthing these plants do not grow well. Mr. Lindsay, of the Edinburgh Botanic Garden, has been good enough to send us specimens of C. pedunculata, and Mr. F. Moore has also had the kindness to send specimens of pedunculata and of drupacea from Glasnevin, but neither of those gentlemen is aware of the ripening of the seed in those localities. At first sight it might be thought that the absence of the male flowers at the right time might naturally account for the non-production of the seed, but, as in the case of Cycads, we have examined several specimens in which, while the outer fleshy covering, the shell and the periperm were fully developed, there was no embryo plant to be seen.

C. FORTUNEI.—There is no difficulty in recognising this, the handsomet species, and apparently the ore best suited to our climate. The comparatively robust habit, the purplish shoots, and very long black-green falcate leaves, paler beneath, and recurved at the triangular acute points, render this species easy to trecognise, at least so far as the male plant is concerned. The terminal bud of the shoots have markedly accumiants escales. The seed is ovoid. The male plant is well figured in the Botanical Magazine, the 499, and specimens of both the male and fenne plants exist in the Herbarium from Amoy (Swinhoe I), Shanghai and Chusan (Fortune!), Kin Kiang (Shearer!, Maries!), end others.

The female plant grown in gardens under this name has comparatively little resemblance to this species, and, as we have seen, was not recognised as such by Fortune himself. Carrière figures and describes a monoccious variety of C. Fortunei, in which the seeds are ovoid (Revue Horticole, 1878, p. 117). M. T. M.

PIESA PUNCENS AND ARIES DOUGLASII.—I enclose some slips of the side branches of a Sprue Fir, the produce of seeds which I bought some years since under the name of "Abies Parlatere;" the plants are now 12 and 18 inches high. They appear to me to be identical with A. Engelmanni, while the glaucous varieties correspond with Miss Bird's "Blue Spruce of the Rocky Mountains"—the Pieca pungens figured and described by you in your number for December 8, 1833. 'You will see that the specimens sent vary in habit and especially in colour. I also send a cone and end of branchlet of an Abies which I found last August on the Porcupine IIills, some 40 miles west of Fort M'Leod in the Northwest Territory of the Dominion of Canada, evidently A. Douglasii. The hill-sides and summits are clothed with a dense forest of these trees. In their mature state they differed so much from the young plants with which we are familiar in England, that I did not recognise them until I obtained a cone. They had lost much of their pyrsmidal habit, the leaves were short and much recurved, and the cones very small; there were acres of young seedlings which were in all respects similar to those in our nursery gardens. I measured, by spanning, many of the mature trees, 22 feet in circumference, and one of 15; the soil in which the latter grew was of a peaty character with large granite boulders cropping out here and there. None were of any great height, not more than 80, or at most 100 feet, I should say. At the foot of the range Sir A. Galt's saw-mill was at work day and angle to the production of the production of the production of the conclusion that two or three so-called species, conference when when you feet he so-called species, concerning which so much confusion has arisen, are merely forms of one and the same. We shall have more to say on the matter when we have been enabled to compare the specimens with others. The small-leaved and small-coned form of the Douglas is, we believe, in cultivation at Kew. Ed.]

THE VINE LOUSE.—The Duchess of Fitzjames has reissued her pamphlets on the subject of counteracting the effects of the Phylloxera by grafting on the American stocks. The work may be had of Delahaye & Lecrosmer, Paris.

Notices of Books.

The Rosarian's Year Book for 188. By the Rev. H. II. D'Ombrain, (Eemrose & Son.)

This useful little annual has for its frontispiece an excellent photograph of Mr. McIntosh, Vice-President of the National Rose Society, and a sympathetic notice of one who, by his disinterested interest in horticulture, and his unbounded kindness and goodwill towards those with whom he comes in contact, has will towards those with whom he comes in contact, has secured universal respect. Mr. Whitwell discusses the "Rose election," which we imagine to be more useful indirectly than directly. Mr. Brown, writing from Reigate, extols "own-root" Roses for their freedom of bloom; while Mr. Fish, writing from Bury St. Edmunds, warmly advocates the seedling. Brier. His remarks on the selection of well-formed buds from flowering shoots rather than from growing ones, raise a question of very great importance, and one to which the observation of intelligent amateurs, as national Rosarians necessarily are, might very profitably be directed. Mr. Julius Sladden strikes a correct note in advocating the claims of old-fashioned Roses. It is certain that, in spite of the keen excitement of the exhibition tent, a far greater and wholesomer source of pleasure is derived from "garden Roses" by persons who never go near an exhibition tent, and would hardly wish to go a second time if they went once. Such persons are far more numerous than either "exhibitors" and exhibition haunters, so that we fully sympathise with the writer when he declares the Rose Society never more thoroughly justified its title "National" than when it undertook to publish a catalogue of garden Roses. Mr. Hall discourses of Roses in Cheshire, Mr. Gray gives his impres-Mr. Hall discourses sions on Rose shows north and south of the Tweed, Mr. Hinton sums up the result of the Rose election; as garden Roses Gloire de Dijon heads the list, as a matter of course, immediately followed by La France, which is surprising to those who try to grow it on cold clay soil; while Charles Lefebvre and Charles Lawson are astonishingly low down in the list. Last on the list of papers comes Mr. Mawley's report on the weather of the past Rose year, a report which year after year of itself justifies the production of *The Rosarian's Year-Book*, as giving within the space and limitations assigned the best account for garden purposes of the weather and the crops that is to be had anywhere.

Tree Pruning. By A. Des Cars.

Messrs, Rider & Son have issued in a cheap form the translation of M. A. Des Cars' treatise on pruning forest and ornamental trees, originally published under the editorship of Professor Sargent in America, Where proper oversight is maintained there ought to be little necessity for pruning, and bad pruning is usually worse in its effects than none at all. Necessary and judicious pruning is quite another matter-it depends on the natural habit of the tree, the purposes for which it is grown, the peculiar circumstances under which the operation has become necessary. The diagrams given illustrative of the "correct form of trees at various ages require, as the author properly says, to be considered not as absolute indications, and in following out his practice the forester must use considerable judgment in the application of the rules laid down. Especially must he study the natural habit of the tree and the mode of development of its buds, else by the pruning and shortening processes here recommended, so far from doing good he may be adding to his yearly toil, or if he neglect it rendering matters worse than if he had never touched the tree,

— A new part of Hooker's Icones Plantarum has just been issued, containing descriptions and illustrations of twenty-five plants, principally of exclusively botanical interest, and some illustrative of genera described in the Genera Plantarum. Gentana Lodeii is a prostrate form, with broadly ovate leaves and large funnel-shaped blue flowers, with fringed scales in the throat. It may be useful to state that four species of Gentiana here figured—namely, G. robusta, from Tibet; G. Loderi, from Kashmir; G. borneensis, from Kina-Balao; G. tibetica, from Tioet, and Swertia Kinglii, from Sikkim—do not find a place in the recently issued part (10) of the Flora of British India, having been received at Kew since the publication of that part.

Archid Notes and Hleanings.

ORCHIDS NEAR STIRLING,-When on a visit to Scotland during the last week in December, 1883, I went on the 27th to Brentham Park, the residence of James Smith, Esq., and was agreeably surprised to find such a fine collection of Orchids. The Odontoglossums were very fine; O. Pescatorei, which was in flower in quantity, looked grand; Cattleyas were looking well, many of them newly bought in; one good plant of C. superba was in flower; Lycastes, Cypripediums, and many others were in flower. The whole place bore evidence of a master hand, and reflects great credit on Mr. MacLeod, the gardener. On the 31st I went to see Dr. Paterson's plants, which I had heard so much about, and where I expected to find a large collection; but for the benefit of readers of the Gardeners' Chronicle I would say the collection is not large, but the examples are quite up to what has been written about them. On the morning of my visit there were 10° of frost, and although entering the houses from the cold air I was much struck to find them so cold, viz., 43°. Now, what would some of our Orchid growers say to that temperature for Cattleyas, Lælias, Vandas, The plants were pictures of health. fine flowers were open which have already been described in the Gardeners' Chronicle, I say with "F, W, B.," at p. 14, that the Doctor is a cultivator of the first water. But I would like to say, in correction of a misapprehension on the part of "F. W. B." that Dr. Paterson employs a gardener, and one who is thoroughly practical, in fact conversant with every subject under his care. Dr. Paterson may give his orders, and in due course they are carried out, but let it be known, at least, that an experienced hand helps. I have neither seen in imported or home-grown plants such luxurious foliage as some of his specimens present, The compost is good, and plenty of it, there is no starving such as may be seen in some places where the poor plants are made to live on a few crocks and charcoal, and with a bit of sphagnum for a surfacedressing. Thrumpton.

"THE ORCHID ALBUM."-Recent numbers of this useful publication contain coloured figures of Lælia harpophylla, t. 117, a species remarkable for its orange-scarlet flowers; Mr. Cookson's variety of Odontoglossum crispum, t. 118, a form with fine flowers, with very large brown blotches; Cypripedium Spicerianum, t. 119, a native of Assam, and remarkable for the white dorsal sepal, traversed by a central narrow band of deep violet; Dendrobium Dearei, t. 120, with racemes of white flowers : Cattleya labiata pallida, t. 121, a form remarkable for its violet lip, golden-yellow thrnat, with radiating lines, the disc marked with a large blotch of deep magenta, and edged with creamy-white; Cypripedium Curtisii, t. 122, a native of the Sunda Isles, has the dorsal sepal green, with purple lines, the side petals oblong lanceolate, thickly spotted with violet, and with black hairs along the edge—the lip is broad, bucket-shaped, shining purplish-brown; Lælia grandis, t. 123, a species from Brazil, with linear lanceolate wavy segments, of a yellow-fawn colour and a white lip, convolute at the base, expanding into an ovate acute cream-coloured disc, marked with violet lines; Vanda Sanderiana, t. 124, a native of the Philippines, "the most wonderful Orchid that has been introduced for many years," and of which we gave an illustration last autumn, vol. xx., p. 440, figs. 67

MASDEVALLIA HARRYANA.—M. Roezl narrates, in the Orchidophile, how he found this plant in the mountains near Ocaña at a height of 1100 to 1200 feet. It was growing by hundreds of thousands on a slope amid low shrubs—Vacciniums, Thibaudias, Melastomacere, &c. The variation in colour was extreme—some were nearly yellow, others striped with fiery-red, others deeper coloured still, and with great variation in size also. Six thousand plants were collected and sent to Europe to perish at St. Nazire, where they arrived at the outbreak of the Franco-German war. M. Roezl goes on to say that the air is pure where the plant grows, the wind strong, the moisture constant but not stagnant, wet moss grows around the toots. For the greater part of the year

fogs cover the mountains; it requires, therefore, shade in the morning, followed by exposure to the sun at mid-day,

CYPRIPEDIUM LAWRENCIANUM.—I send with this a stalk with two flowers on it of Cypripedium Lawrencianum. I know it is not altogether uncommon in C. barbatum, but I never heard of it in Lawrencianum before; I do not know if others have. W. Vanner, Chisichurst. [We have not seen a case like it in this species before, ED.]

CATTLEVA TRIANÆ RUSSELLIANA.—This is certainly the king in the Trianœ section, indeed it is doubtful whether its equal in beauty and grandeur can be found in any other species of Cattleya. At The Dell, Baron Schridder's specimen is just now in perfection, some twelve flowers being fully expanded. It is difficult to describe the colour of the lip, but crimson-plum may be the nearest approach to it. The lip has the form of Mendelii, being full, open, and flat at the side edge; the latter is not fringed but waved. The deep colour enters almost the throat and covers the lip fully; the side wings of the lip right up to the base of the petals is bright purple; sepals broad, the upper one standing upright, and not bending back, which is so rare in Triawe; petals very broad, deep lilac-rose, with heavy light purple veins. A. B.



THE exceedingly mild winter, as well as the unusual dryness of the weather during the last fortnight, has caused the spring garden to already assume a somewhat flowery and gay appearance. Hellebores, Aconites, Snowdrops, Primroses, Polyanthuses, Violets, Crocuses, and Violas are already in bloom, and in some instances form quite a cheerful and brilliant display. How disastrous and distressing will be the effect if severe weather should now ensue, and how quickly will this brightness disappear. Let every means of protection he ready at hand for immediate use should a change occur. For temporary protection at this season there is nothing so useful and efficient, either for protection against frost or cold cutting winds, as short evergreen branches stuck in at intervals between the plants sufficiently close to effectually screen them. They can be easily removed as soon as the danger is past. Should severe weather be likely to continue a mulching of light dry leaf-mould should likewise be placed between the plants as an additional protection; by these means not only tender plants but the blooms may often he preserved when the frost is not of long duration.

THE HEREACEOUS BORDER should now receive attention, and where the necessary divisions and transplanting were not effected in the autumn the mild weather affords an excellent opportunity for the performance of this work, and as many of the plants are now showing signs of growth this can be accomplished very easily, taking care to mulch them immediately the work is performed either with leaf-mould or half decayed manure in a rather dry condition. In rearranging old borders or in forming new ones care should be taken to graduate the plank according to their heights and habits of growth where the mixed method of planting is adopted, also to avoid, as far as possible, the introduction of too many kinds of plants, or too many colours into a limited space; a far more pleasing and effective display is insured by planting in sufficiently large patches or masses a few really good and judiciously selected sorts. But the proper and really natural method of treating this class of plants is undoubtedly by planting in such positions and in such a manner as to cause them to form the connecting link between the wild or woodland garden and the well kept lawn or parterre. Some of them, indeed, are only suited for close association with the usual occupants of the wild garden, where planted in masses or in isolated specimeos they show to great advantage. Those of more medium growths should also be massed in the same manner, not, however, in a formal or stiff way, but in irregular groups or clumps, and in sufficient masses of one kind and colour to produce a decided effect, taking especial care not to permit one particular colour to preponder-

ate so as to destroy the effect of those colours less showy or effective. This method of planting is not only best suited to these plants, but it admits of great variety and creates the greatest possible charm and brightness in that part of the grounds which is usually cheerless and uninteresting. Isolated trees and shrubs, as well as groups of the same, may also be introduced if they do not already exist where required, for the purpose of giving relief to the eye, as well as to afford the necessary shelter either from winds, sun, or frost, which some of these plants require so as to enable them to develope their full beauty. On no account, however, should they be employed—as unfortunately they sometimes are—as edgings or margins to clumps of shrubs, and even specimen trees, where they are not only out of place, but where, in consequence of the encroachments of roots into the borders and branches overhead, they soon present an unhealthy and miserable appearance. As their heauty and effectiveness depends on the full development of both growth and flowers, not only should suitable soil be provided for their peculiar requirements, but the most suitable positions should likewise be carefully chosen. Planted in such a manner and in such situations herbaceous plants and hardy bulbs are perfectly at home, give but comparatively little trouble, and afford a successive and ever varying charm, which cannot fail to please even the most critical eye; nor are they when so placed any longer open to those objections sometimes forcibly used

THE SHRUBBERIES should at this time undergo thorough inspection, carefully thinning and pruning out all dead shoots and irregular growths caused by accident, or indiscriminate or improper planting. In performing this operation endeavour to preserve as nearly as possible that natural form peculiar to the particular shrub or tree, and at the same time be careful by timely thinning to prevent undue crowding, as from this cause alone is the greatest mischief to be feared in the management of specimens, as well as groups of shrubs and trees. One season's neglect of this important operation often causes irreparable mischief. After pruning the clumps should be cleared of all rubbish, except leaves, which should be allowed to remain, and by simply loosening the surface with a steel fork (not digging) they will quickly disappear by the action of the weather and the operations of worms. Near the edges, where greater neatness is desirable, either rake them off or cover them with a small quantity of fresh soil. As we usually experience rough winds at this time every tree or shrub requiring a stake should be secured. Deciduous and ever-green hedges may be pruned during mild weather, but cease this work on the first approach of frost,

The Hardy Hruit Barden.

FROM the fact that the Apricol comes into bloom first of all our fruit trees it necessarily claims our earliest attention in pruning and nailing. It is well to keep the trees in shape, and the spurs moderately short, so as to bring the fruit under the warm influence of the wall; but in pruning be careful not to cut away the fruit-bearing spurs. It often happens that bloom, appearing as it does so early, suffers greatly by inclement weather, therefore make some provision for protecting it when it opens, Glass protectors projecting 2 or 3 feet are best; or a hoard similarly placed will also do, and from which curtains or nets can be suspended during sunny days only, to retard the blooming to the latest date. The curtains should also be used constantly at night, when there is danger from frost during the setting period. The pruning of Pears on walls ought now to be pushed forward, the unusually mild weather enabling the nailing to be proceeded with. For Pears trained as they usually are, on the horizontal plan, we much prefer gal-vanised studs with eyes being driven into every third course of the wall, if of brick, and two feet apart, to which the branches can be tied; common clout nails heated red-hot and thrown into linseed oil to prevent their rusting form good permanent fastenings used in the same way, the branches being tied with small rope-yaro. When pruning the Pears, be careful in distinguishing the fruit-buds from the woodNo time should be lost in getting the Filberts pruned, and in doing so be most careful to leave sufficient catkins or male blooms to perfect the fertilisation; and if this should require more wood to be left than is desirable it can be cut out after the crop is set. At the base of such trees a quantity of suckers are usually produced; these should not be cut off with a knife, but be removed with a sharp spade or suckering iron, so as to reduce the crop of these the current year. These suckers make neat stakes for training small plants, and should be saved for that purpose.

The young wood of Peaches and Nectarines should be loosened from the wall, to retard the blooming period as much as possible, and the loosening will make it easier to prune the trees. Any which are infested by scale should be dressed with Gishurst Compound, at the rate of 6 oz. to the gallon, applied with a painter's brush; care must be taken not to brush downwards, and so rub off the buds. A very grave mistake is often made in pruning orchard trees at this time of the year in using the knife too freely; the branches should simply be thinned out, more especially those which cross each other, but not shortened, as a shoot that is well ripened will much sooner develope into bearing than when the same is severely pruned. If the wood is insufficiently ripened, that is usually caused by want of drainage or too shady a position, and if the tree grows too strongly when of mature age it is from not having been root pruned.

it is from not having been root-pruned.

Where it is desired to form the trees into pyramids the knife must be more freely used, but even then severe pinching of the shoots is preferable. On no account should old orchard trees be severely pruned; simply cut out the inside shoots, which would other-wise not receive sufficient light. Raspberries, if not pruned, must now receive due attention; alter cutting out the old bearing wood of last year and the small shoots tie up the strongest for bearing this year, but for years we have not shortened the shoots till This makes them somewhat later in break-March. ing, and more likely to escape damage from frost; but never, under any circumstances, dig hetween the rows with a spade-it is simply ruinous to the plantation-but simply point the ground slightly over, and it will be better if a good mulchiog of dung, leafmould, or even spent tan, be given, and the ground left undisturbed. The autumn-bearing red and yellow kiads must be cut off close to the ground, as it is on this year's shoots that fruit appears, and as it is in September and October when the fruit of these two kinds ripens the situation should be sunny and fully exposed. It may happen that the locality does not suit certain trees in the orchard, and it will then be desirable to graft them with kinds which have been proved to do well in the neighbourhood. Where that is intended no time should be lost in heading back the trees to the proper place; the grafting of them we shall speak of in a subsequent Calendar. F. Rust, Eridge Castle, Sussex.

The Orchard House.

We have in our new garden a different form of house to the old one at Loxford, and have also adopted a different system of management. of the trees are planted out and trained to trelliswork, and others are grown in pots. The trees in pots are still out-of-doors, but we are now cleaning the house, and turning out the numerous pots of Chrysaothemums. This generally affords a good opportunity to clean the trees, as well as the house and glass. Brown-scale is rather troublesome if it once gets a good foothold; but we had it on a few trees, and that to a limited extent only; now we have entirely destroyed it, merely by looking over the trees carefully as they were taken into the house, and washing the scale off with strong soft-soapy water. Syringing and fumigating does not touch scale. We fumigate two or three times before the blossoms open, and that precaution keeps the trees free from the Peach aphis. If this is not done we are likely to be pestered with it all the season. The plants will now be placed in their positions, and the border where the trees have been planted out will be surface-dressed. In the forcing compartment, where surface-dressed. In the forcing compartment, where the trees were started before Christmas, the temperature must not be very high as yet. See that the trees are all right at the roots; provide also a circulation of air—even at night a little air ought to be admitted. This precaution is necessary to prevent the blossom-buds from dropping off. J. Douglas, Great Gearies, Ilford.

APPOINTMENTS FOR THE ENSUING WEEK.

MDNDAY,

Jan. 26

Sale of Lilies and Other Bulbs, at Stevens'
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THE letter of Mr. EWING in a recent number on the necessity or otherwise of ventilation in plant-houses, and on the sources of carbon-dioxide, opens up some very important questions. It is universally admitted that the carbon which plants contain is derived from the atmosphere in the form of carbon-dioxide, alias carbonic acid gas. To effect the introduction, or at any rate to make it of any use, the presence of green colouring matter, and the action of sunlight are absolutely necessary. By their means the carbon is fixed, and the oxygen is dissipated. The prevalent opinion among physicists is that the roots take no part in the absorption of carbon-dioxide as such, but in some combination, as in the form of soluble carbonates, the plants may take up carbon, and if so then one of Mr. EWING'S questions would be answered, for there would probably be a sufficient supply of available carbon, even in the most hermetically sealed house. In any case the carbon of the soil does exert a very powerful influence for good on the plant. Humus, wihch we do not hear so much about now as we used to do, contains, in addition to nitrogen and other matters, about half its weight of carbon. But besides this, humus may take up and retain at least its own weight of water, and even more; and this water is almost sure to contain carbon-dioxide. The humus itself owes its origin to the gradual decomposition of vegetable matter - roots, leaves, &c., in the soil. The value of pottingsoil, peat, and leaf-mould is largely dependent

on the presence of this substance. M. DEHÉRAIN has lately called attention to the experiments of BOUSSINGAULT and others, which show that much larger quantities of humus are contained in meadow land than in arable land. In seeking for the cause of this DEHÉRAIN points out that the tillage of the arable land-the ploughing, the harrowing, the fallowing even, tend to increase oxidation, and to destroy, or as chemists say, burn away the humus, which, on the contrary, accumulates in the undisturbed meadow land, and oxidises much more slowly. A Vine border, or even an ordinary pot-plant, then presents a nearer approach to the condition of the meadow than to that of the ploughed field, and the accumulation of humus is less interfered with, to say nothing of the fresh supplies yielded by manure, The lloss of humus from arable land may be checked by a proper rotation, as by growing Clover after Wheat. The gradual loss of humus is then due to oxidation, rendered manifest by the quantity of carbon-dioxide in the soil, Till recently this process of oxidation would have been considered as a purely chemical phenomenon, but of late years we have come to look upon the soil, not always as a dead mass, but as teeming with life in the shape of the most minute organisms. We have on a former occasion alluded to the influence of these ferment-agents in the formation of nitrates in the soil, and now it appears certain, from the researches of German French chemists, that these bacteria or "germs," or whatever they are to be called, also play a most important part in the oxidation of organic matters. A soil, the humus of which is destroyed by this agency, gradually becomes sterile, and as M. DEHÉRAIN shows, becomes incapable of resisting drought. In Algeria, where the land is becoming sterile, or rather,

where it has been so for centuries, the mischief is rendered worse by the destruction of the forests. The soil of the forest is rich in humus, but this is soon used up, and the state of that land becomes worse than before. The leaves radiate heat freely, and in consequence there is a large deposit of water in the form of dew on the leaves, but with the destruction of the forests by the axe, or by the goats, this precious deposit ceases and the land is left to become utterly barren, with all the goodness scorched by a torrid sun and burnt out of it.

The course of destruction in such countries is as follows :- The soil is tilled annually, air penetrates it, the humus is burnt up, the nitrogen forms nitrates which are washed away by the rain when it does come, the organic matter disappears and with it the ability of the soil to resist prolonged drought. When rain does fall the water runs away and is not stored up, and the soil, no longer able to sustain vegetable life, becomes a desert. Then comes the destruction of the forests as above stated, and the ruin is complete. M. DEHÉRAIN concludes the lecture, from which we have quoted these remarks, by showing that the exhaustion of the soil under the circumstances he mentions is not due to the lack of phosphates, nor of potash, but to that of humus, which carries with it that of nitrogen and water.

The remedy for this state of things is easy in theory if not in practice. It consists in restoring the conditions of the meadow by allowing the gradual accumulation of humus, and this is to be effected by keeping the soil supplied with water by means of irrigation, by replanting the forests, and by a proper system of forest conservancy and inspection—by doing, in fact so far as circumstances permit, just what the gardener does in his stoves under more fortunate conditions.

— CHATSWORTH. — We understand that Mr. THOMAS BANNERMAN, Gardener to Lord BAGOT, Blithfield, Rugely, has been engaged by the Duke of DEVONSHIRE to succeed the late Mr. SPEED as Gardener at Chatsworth.

ITALIAN BOTANIC GARDENS. — Professor PIROTTA has been appointed Professor of Botany and Director of the Botanic Garden at Rome. At Turin, Professor GIBELLI; at Modena, Dr. Mori; at Pavia, Professor BRIOSI; and at Naples, Professor PASQUALB, have been respectively appointed.;

— NEFENTHES RAJAH. — Mr. COURT, whose skill is known to all visitors to Messrs. VEITCH'S nurseries, being dissatisfied with the results of the ordinary stewing treatment which this plant receives, has now adopted a cool treatment for it. The plants are grown in a cool-house facing north, and kept wet by sphagnum, like the Cephalotus. The progress, though slow, is satisfactory, the foliage being firm and well coloured.

- THE WEATHER IN AMERICA .- From Messrs. TATTEN & SCHAFER, Saratoga Springs, we have received a note on the severe weather experienced in the State of New York hetween December 26 and January 9. New Year's Day was warm and cloudy; the 2d was cloudy, with wind and snow in the afternoon; and the 3d was colder, about 12° above zero, and the wind travelling at the rate of 50 miles an hour in the evening. On the 4th it was much colder, about zero, and the weather clearing; the 5th was colder still, 10° below zero; the 6th very cold, 24° below zero-in some places as low as 34° below, wind N.W.; the 7th, a very severe morning, 24° below zero again; the 8th, about 16° below zero: and on the 9th a great change to rain, with snow and strong wind in the afternoon, thermometer 14° above freezing point,

— VIOLET LADY HUME CAMPBELL.—What is this? We saw a quantity of fine plants a few days since growing in a cold frame in the gardeos of Harefield Court, Rickmansworth, and were much struck with the size and vigour of the plants, for they were represented by specimens fully, 18 inches in diameter, finely grown, and full of buds; they were planted out, and appeared to like the situation exceedingly well. It is regarded locally as a superior variety of the Neapolitan, being much more robust in growth. It was brought from ahroad some years ago by Lady Hume Campbell. to her residence, High Grove, Watford, and Mr. Brush, the gardener, noticed among some of the plants a darker coloured free-blooming form, and its superiority to the old Neapolitan was soon made manifest. About five years ago Mr. C. Turner hought the stock of it, but it does not appear in the list of sweet Violets found in his catalogue. We were able to compare it with the Neapolitan, and found it to be superior in every way. It may be that its advent anticipated one of the newer forms since introduced from Italy, but we fail to find it in any list of sweet Violets.

— NARCISSUS MONOPHYLLUS VAR. ALBUS.—
MESSUS. COLLINS BROTHERS & GARRIEL have
favoured us with some fine blooms of this chastely
beautiful flower, grown out-of-doors at Kiogston with
the protection of a hand-light during had weather.
The bulbs were collected last autumn, and as they
are flowering so well now, under the conditions we
have named, this is clearly a plant that should be
looked after by those who have to provide choice cut
flowers. For bouquets it is just the thing, resembling
as it does a miniature Eucharis.

GREENHOUSE RHODODENDRONS. — Messrs. VEITCH have adopted a plan of growing these plants which is quite charming. The tops of the shoots are taken off wheo of a length of 3 or 4 inches, and when the bloom-bud is commencing to form. These cuttings are struck in cutting-pots, and when the flowers are about to unfold the pot is placed in a small pan filled with moss and hung up close to the glass. In this situation the flowers expand and form delightful ornaments to the house.

- WALLFLOWERS. - Messrs. CANNELL have sent us bunches of dark coloured and yellow Wallflowers, both very good, and the former especially The Wallflowers as a class of sweet-smelling ever favourite flowers, whether in mid-winter or in other and pleasanter seasons, are not so much grown in pots for conservatory or greenhouse embellishment as they should be. Nothing can be easier than the pot cultivation of these old favourites, for by sowing the seeds in gentle warmth in February, and hardening off when the true leaves appear, stocky plants are soon in readiness to prick off. Every effort should be made to keep the little plants stocky and hardy. They can be grown in good soil in the open till August, when they must be taken up with as much earth as will adhere, and potted in large 32's, afterwards standing them behind a north wall for ten days till rooted, when they must get the sunniest place out-of-doors till October, or later still if there frost. A cold, or, better still, a dwarf light house, with plenty of room between the plants, so as to preserve their lower foliage, will suit them till they come into flower. The soil for pot plants should be rich loam, with not over much crocking, and requires to be very firm.

— International Potato Exhibition.— The Royal Horticultural Society, having granted facilities for the trial, culture, and cooking of new varieties of Potatos entered in competition for the International Certificate of Merit, the following regulations must be observed by competitors :- Not more than eight varieties will be received from any one person, and in every case six sample tubers must be sent, carriage paid, to Mr. A. F. BARRON, Horticultural Gardens, Chiswick, near London. Senders of samples to Chiswick are desired to send a list of the names or numbers of the sorts, and, if possible, pedi-grees and characters, to the Honorary Secretary of Thames Street, London, E.C. The authoritative announcement made in our columns last week that the International Potato Exhibition of the present year would he held at the Crystal Palace during the second week in October, instead of in the month of September, will no doubt prove very acceptable to many Northern growers, and no doubt will help to swell the already enormous competition in the various classes. The days on which the show will be held have not yet been settled by the Executive Committee, but it is anticipated that, for various reasons, and



FIG. 23,-CEPHALOFAXUS PEDUNCULATA, VAR. SPHÆRALIS. (SEE P. 113.)

specially because of the effort to be made by the Palace directors to popularise the exhibition the more largely by associating the show with a grand harvest festival, that it may extend to three days. The spirit shown in the management of the Potato Exhibition indicates that it is yet full of interest and vigour. Should there be associated with the Potato an exhibition of other roots, fruits, and also of vegetables, there can be little doubt but that this particular show would prove to gardeners one of the most attractive of the whole season. It is possible, and, indeed, it is desirable, that some changes should be made in the prize list of the Potato show to enable small growers to compete independently of those champion growers whose very names mean prizes. It is right that the

best should win, but open classes and liberal prizes will always bring the first quality in plenty. What is rather needed is to furnish encouragement to the small amateur and gardener whose means are limited, and who yet in many cases develope into first-class growers, if not too heavily handicapped at the outset.

— JASMINUM NUDIFLORUM IN COMBINATION WITH IVY.—A few days ago we saw a harmonious and striking effect produced by this widely grown and deservedly popular plant in combination with the common Irish Ivy. Both had been planted at the same time and allowed to scramble at will overa heap of stones and old roots; the Jasmine certainly seemed quite able to hold its own, and its long leafless shoots, studded with yellow starry flowers, seemed to be more

beautiful contrasted with the groundwork of the dark green leaves of the Ivy. In Sion House grounds a large mass of Jasminum budiflorum forms a circular bed on a lawn; no stakes are used, and the plants are allowed to grow naturally. At the present time this clump presents a charming appearance.

— THE GRRAT AUTUMN SHOW AT DUNDER.

—We have received a copy of the schedule of prizes offered for competition at the Great Horticultural Exhibition to be held in Dundee next September, and with which will be incorporated the annual exhibition of the East of Scotland Honey Society. The schedule includes 219 classes for fruits, flowers, and vegetables, and twenty-three for honey. In the fruit section the highest prizes offered are £20, £15, and

\$10, for a collection of sixteen sorts; \$15, \$10, and £5, for a collection of twelve sorts; £10, £6, and £4, for a collection of eight sorts; £15, £10, and £5, for eight varieties of Grapes; £8, £5, and £3, for six varieties of Grapes; and £5, £3, and £2, for a collection of eight sorts of hardy fruits. In the plant classes the same liberality prevails; thus in a section devoted to nurserymen sums of £20, £15, £10, are offered for a table of plants 20 feet by 8 feet; £10, £6, and £4, for eight Orchids in bloom; and £10, £7, and £3, for twelve stove or greenhouse plants introduced since 1880. For amateurs and gardeners only a loog list of classes includes the following: - 6,20, 615, £10, for twelve stove or greenhouse plants; £10, £7, £3 for six stove or green-house plants; £10, £6, £4, for a table of plants 15 feet by 8 feet. Vegetables, we are sorry to observe, are somewhat meanly treated in the two main classes, only the sums of £4, £3, and £2 being offered for a collection of fifteen kinds; and £2 10s. and £1 10s. for ten kinds, exclusive of Tomatos and Cucumbers. In comparison with these offers the tos, given as a Ist prize in classes for two Cabbages, two Beet, and so on, seems out of all proportion.

- PARROTIA PERSICA. - Conspicuous enough at the present moment amongst the deciduous trees at Kew is a fine specimen of Parrotia persica, the terminal and lateral clusters of crowded flowers, with their scarlet anthers, lending a distinct appearance and no little beauty to the naked brown twigs. When figured in the Botanical Magazine, in 1868 (tab. 5744), it was stated to be one of the rarest trees in cultivation; now, however, owing to layers having been distributed from Kew, the Parrotia is better known, although still very far from being common. Nearly fifty years ago two plants in pots were received from the Botanic Gardens at St. Petershurg, one of these is trained against a west wall, the other, which is now less than 15 feet high, stands in the open ground not far from the grand entrance. In 1868, when it was figured for the first time, this tree flowered in March, this year it is in flower in the middle of January. The great beauty of the Parrotia consists in the magnificent colouring of the foliage in late autumn, when the leaves usually turn of a brilliant orange and golden-yellow and scarlet, and hang upon the plant until late in winter. As the protection of a wall generally ensures more brilliant colouring, and keeps the foliage from falling long after trees in the open have become leafless, such a protection should, where available, be afforded to the The wood is said to be extremely hard Parrotia. and durable, hence its Persian name, "iron-wood." Only one other species of Parrotia is known, viz., P. Jacquemontiana, a native of the Cashmir Himalaya, not yet introduced to cultivation. The subject of our previous remarks is from the Transcaucasian provinces of Russia and Northern Persia.

- THE INVERNESS NURSERIES. - The Northern Chronicle of January 16, in a communication on the Silva of Inverness-shire, states that the first nursery established in the North for the systematic production of forest trees was at Muirtown, and was carried on by two brothers of the name of FRASER. This was about sixty-five years ago. They were succeeded by the DICKSONS (JAMES and GEORGE), who took a lease of suitable ground at Millburn, and carried on a large business successfully for a considerable period. About half a century ago, at the time when the demand for forest trees was just beginning to make itself felt in the North, Mr. CHARLES LAWSON, late Lord Provost of Edinburgh, and nurseryman and seedsman to the Highland and Agricultural Society, re-established the nursery business at Muirtown, where it is still carried on. He was succeeded by the Messrs. Howden Bro-THERS. Under them, and subsequently under Messrs. HOWDEN & COMPANY, the business was extended, as increased facilities for the transmission of trees were established. Messrs. Howden & Company now hold about 30 acres of the best land in Sir ALEXANDER MATHESON'S Inverness property, and this extent is yearly being found more and more insufficient for the requirements of the trade.

THE LATE HERMANN MUELLER.—We had occasion some time since to allude to the English translation of the work which caused its lamenta author so much labour and research. We regret to learn that by his death his widow and daughters are left but poorly provided for. He died at fifty-four, after three days' illness, of inflammation

of the lungs, caught on one of his "Alpeu-Blumen" excursions. He had carned his living as teacher in the gymnasium at Lippstadt, for twenty-eight years, adding to his income by private lessons. He published a mass of laborious work. His emoluments were so small that he was unable to provide adequately for his widow and two unmarried daughters, one of whom is an invalid. The idea of a German committee formed for the purpose is to provide some help for the widow, and if possible to connect Hermann Mueller's name with a sort of natural science studentship or bursary, to be founded at Lippstadt alter the death of the widow. Subscriptions are now received by Professor Percenal. Wright, Trinity College, Dublin; and by F. Darnin, Esq., So, Huntingdon Road, Cambridge.

- JAPANESE VINES .- A correspondent calls attention to an article in the Bulletin of the National Agricultural Society of France, in which Dr. MAGET, a French naval surgeon, makes known the existence in the mountains of Japan of wild Vines. They grow at altitudes as high as 1800 metres, and produce very sweet and pleasant flavoured Grapes. The climate is mild and moist, like that of Brittany or Ireland. In the Island of Vesso, and particularly along the river Tchikari, this traveller found no fewer than eleven species of Vine. It is to be hoped that fuller information will be forthcoming as to these plants. Io the meantime it may be mentioned that the ordinary Vine is cultivated in Japan, and is mentioned by Franchet and Savatier as naturalised, quasi spontanea, in copses.

- ILLUSTRATED SEED LISTS. - There can be no doubt but that our trade seed lists show a very decided advance in taste and truthfulness of delineation upon those of several years since. Good seed lists-or, to put it more correctly, lists sent out by good seed houses-are now not only illustrated, but generally got up in a style that would do credit to any branch of trade or commerce. Even the wood engravings show elegance and finish that may well compare with those found in any publication, and there is not only less exaggeration, but more evidence of original drawing from good examples. Coloured plates are not always so successful, though perhaps the artists' efforts may in some cases suffer from the defects of the printer; but still the errors are less found in form and general outline of the objects than in too glaring or impossible hues, or in attempts to depict in florists' flowers certain features that such flowers never have possessed. In one very admirably illustrated list we noted a black and white picture of a supposed first-class Gold-laced Polyauthus every pip of which had seven petals and fourteen The artist, in striving to show the merits of the strain of seed offered, somewhat overdid his duty, and exhibited a slight ignorance of the structure of what should be a well known flower that ordinary observation might easily have corrected. Few good Gold-laced Polyanthus flowers have more than five petals and ten lobes, though twelve lobes are occasionally visible. This is one of those minor errors found in catalogue illustrations, but amidst so much really excellent work it may pass. No doubt catalogue illustrating is a costly business, but we must hope that it pays. Seedsmen may be trusted to know their own business best. Certainly the illustrations in the main being truthful are instructive, and the pictures are, as a rule, far better than are those found on seed-packets; indeed, a good illustrated list renders these latter of little moment.

- MARKET VEGETABLES. - The season, so far, has been most favourable to market growers, not only in the constant growth seen in the hardy crops, but also in the admirable manner in which the ground works, and has favoured its cleaning and turning throughout the winter. Already considerable breadths of early Peas and Broad Beans are being sown, and should the weather continue dry as in the past, we may expect to find unusually large breadths of Peas sown this season-not least, perhaps, that seed is fairly abundant. Peas are a popular crop, not only because always profitable and certain, but also because they are soon cleared off. The haulm, well harvested, is useful for winter fodder, and the ground can be recropped immediately. All kinds of greenhave made continuous growth, never having received a day's check. Such an experience, even in past mild winters, is most unwonted, but frost, rain, and wind alike, have all remained quiescent, and the

winter, so far, has been little other than a pleasant The dry condition of the soil and the mild autumn. weather have proved favourable to pruning, and that work has been greatly advanced. Specially valuable has the dryness of the weather been for foul soils, as forking and cleaning have been done largely; indeed, we have never seen so much activity in the market gardens during the winter months as in the present season. Thus not only have the poor been spared much suffering and pinching, but work has been un-Let what may he said as to the usually abundant. profitableness or otherwise of fruit culture, and of spade labour in particular, at least market gardens, if in the hands of capable men, come into any locality as a blessing to the labouring classes, finding them ample work at good wages, and generally diffusing the sweets of abundance all around.

- VACCINIUM VITIS-IDÆA. - At Chiswick we recently saw a singularly beautiful variegated form of this charming little native shrub, the copious creamy white markings contrasting well with the dark glossy green. Either as a pot-plant, or grown as a border to dwarf plants in the "American Garden," or as an isolated patch on the rockery, this pretty variety is be appreciated. The type itself, with its almost black-green Box-like leaves, its pretty pale pink flowers, and its blood-red berries which remain on the plant for a considerable period, is an object of no little beauty. LOUDON says:—"The berries are scarcely to be eaten raw, but they are made into pies in Derbyshire, and in Sweden a rob or jelly is made from them which is eaten with all kinds of roast meat. In Sweden this preserve is also considered an excellent medicine in colds, sore throats, and all irritations of the mouth or fauces. In Siberia the berries are macerated during the autumn and part of the winter, in water, and after they are eaten in a raw state, and fermented along with Barley or Rye, and a spirit distilled from them; or with honey, and a wine pro-duced. Sweetments are also made of them with honey or sugar, which in 1814 we found in frequent use at Moscow at balls and masquerades, In Sweden and Norway the plant is said to be used in gardens for edgiogs, as Box is in Central Europe; and in British gardens it is sometimes so applied to American beds and borders, and in other cases where the soil is peat. From its smooth shining foliage, and the beauty of its flowers and fruit, the latter being retained on the plant for several months, it forms a more beautiful and varied edging than Box, provided clip-ping can be dispensed with." At one time, as appears from TUSSER'S Five Hundred Points of Good Husbandry, published in 1573, Hurtill-berries were grown in British gardens. Hurtleberries, according to Sir JOSEPH BANKS, are the fruit of Vaccinium Vitis-Idea, although in BRITTEN and HOLLAND's Dictionary of English Plant Names they are said to be V. myrtillus. Sir Joseph Banks, in a paper published in the Horticultural Society's Transactions says, "Hurtleberries, the fruit of Vaccinium Vitis-Idæa, though no longer cultivated in our gardens, are still esteemed and served up at the tables of the opulent people in the countries that produce them naturally; they are every year brought to London from the rocky country near Leith Tower, in Surrey, where they meet with so ready a sale among the middle classes of the people that the richer classes scarcely know where they are to be bought.'

- THE TUBER-BEARING SPECIES OF SOLA-NUM .- At the Linnean Society's meeting held on January 17 a paper on this subject was read by Mr. I. G. BAKER. In 1882 there were grown in Great Britain 541,000 acres of Potatos. Taking the average yield at 7 toos an acre, and adding to this the quantity imported, which in 1882 was 200,000 tons, this gives us 4,000,000 tons as our average annual consumption, which at 5s. per hundredweight amounts to As they stand at present in £20,000,000 sterling. As they stand at 1 DE CANDOLLE'S Prodromus and other books the tuber-yielding Solanums are estimated as twenty distinct species. Mr. BAKER thinks that not more than six of these are really distinct species in any broad sense, these six being :—I, S. tuberosum, a native of the dry regions of the Andes from Chili northwards, reappearing in Mexico and the Rocky Mountains; 2, S. Maglia, a native of the damp low regions of Chili near the coast as far south as 44°-45° 3, S. Commersoni, a low-level plant of Uruguay and South Brazil, lately published as a novelty under the name of S, Ohrondii ; 4, S, cardiophyllum, a native of the highlands of Central Mexico; 5, S. Jamesii, a native of New Mexico and Arizona; and 6, S. oxycarpun, a little known plant from the Mexican bighlands. Of the two last the tubers are very small. All our cultivated Potatos belong to forms of S. tuberosum, but the species gathered by DARWIN in the Chonos Archipelago and that experimentised upon by SABINE at Chiswick, are both Solanum Maglia. The author attributes the deterioration of the Potato plant partly to its being grown in too humid climates, and partly to the tuber having been unduly stimulated at the expense of the other organs of the plant. There are many hundred species of Solanum known, which do not possess any tubers at all, but which maintain their ground in the world by means of their seeds alone. He urges then, in order to extend the power of climatic adaptation of the Potato, that species 3 and 4, both of which have been fully proved to yield a large supply of eatable tubers, should be brought into cultivation and tried, both as oure specific types, and as hybridised with the innumerable forms of tuberosum.

- GLUCOSE, OR GRAPE SUGAR .- Regarding the manufacture of glucose, or Grape-sugar, which has occupied so much attention of late in America, it is stated in a recent report that, owing to the unwillinguess of manufacturers to impart information, it is difficult to obtain trustworthy statistics in regard to the aggregate quantity produced. Latterly, however, prices of refined sugar have fallen so low in America that its adulteration with the corn product has ceased tn be as profitable as heretofore. The cultivation of Sorghum, and the production of sugar therefrom, is still in an experimental stage. The Maple sugar industry continues to be of considerable importance in some of the Eastern and a few of the Western States, but there appear to be no reliable data on which to found an estimate of the quantity produced. The State of Vermont is perhaps the largest producer, the quantity now manufactured being estimated at 15,000 tons, the other States producing altogether about 5000 tons.

— TECOMA AUSTRALIS.—Although not nearly so handsome a plant as many of its near allies, this species is worth a place on the rafter of the cool greenhouse. The dark green glossy pinnated leaves form a pleasing contrast with the numerous small somewhat trumpet-shaped flowers, which are yellowishwhite, tinged inside with purple. A good specimen in full flower may now be seen in the conservatory (No. 4) at Kew. Under the name of Eignonia Pandone it was very many years ago figured in the Botanical Magazine, tah. 865. The species is found in a wild state widely distributed over the Australian continent.

— Irsea speciosa.—There is now represented in flower in the Kew Orchid collection a terrestrial Orchid which is but rarely seen in this country, and perhaps at present exists in no other establishment in the British Isles. It is a handsome species with the general habit of a Bletia, the flowers being produced on scapes I foot or more in height before the solitary leaves appear. I no clour the flowers, which measure about 2 inches or 2½ inches in diameter, are a golden-yellow, with faint reddish lines on the disc of the lip. The Kew plants were sent from Ceylon. Some years ago a good figure of tpsea speciosa appeared in the Botanical Magazine, tab. 5701.

- HENEGUEN OR SISAL HEMP .- In a recently issued Government report on the trade and commerce of Mexico the following appears:—"Heneguen, known in England as Sisal, or Sisal Hemp, and so called from the name of a port whence large shipments of it used to be made, is the product of a plant of the Agave family, and is grown almost exclusively in the Yucatan. Its uses for the manufacture peninsula of of cords and ropes were known to the ancient inhabitants of Mexico, but it is only within comparatively recent times that its value has been recognised in other countries, and it has come to be an important item of export. It is said that cables of Heneguen are superior to those made of Hemp, in that they retain their flexibility unaltered by cold or wet; but in spite of this and of the great and growing demand for it, especially in the United States, the price is always considerably below that of a similar class of Manila. Ixile is the fibre of another species of Agave, which flourishes principally in the States of Tamaulipas, San Luis de Potosi, and Vera Cruz, and is of some-what finer texture than the Heneguen. Up to quite recently no apparatus has been found that will satisfactorily separate the fibre from the pulp, and it is probably due to this that the price of it is so much higher than that of Heneguen, which can be treated by machinery." To show the enormous development of these industries in the past fifteen years it is stated that "the United States, which takes on an average 80 per cent, of the gross amount of fibre produced in Mexico, imported in 1867, under the head of Hemp and Jute, 975 tons of these materials, whereas in 1881 the imports under the same head amounted to 17,454 tons." The writer of this report has made some confusion in the trade names of the fibres, as well as in their botani-cal classification, referring them to the genus Aloe. The Sisal Hemp of commerce is furnished by Agave Ixtli, KARWINSKI, var. Sisalana, ENGEL., and plant is called "Sosquil" in Mexico, and " Cabulta 1 in Central America. To extract this fibre the fleshy leaves are scraped with a long wooden implement, having three sharp edges; by this process, it is said, all the Sisal Hemp brought to market, as well as the infinitely larger quantity used by the natives themselves, is slowly and laboriously extracted, the produce being only from 5 lb. to 6 lb. per day. report refers the Sisal Hemp to plants belonging to the Aloe family, instead of which, as is well known to our readers, the species of the genus Agave helonging to the Amaryllidaceæ.

- ASTRAP.EA WALLICHII .- The large leaves and drooping heads of bright red flowers, as large as those of some Rhododendrons, give to this plant a peculiar appearance. It has long been in cultivation in this country, but is rarely met with except in large establishments or botanic gardens. Perhaps this is because of the space required in order that the plant may develope itself sufficiently to exhibit all its beauties. ELLIS, in his Visits to Madagascar, speaks in eloquent terms of the strikingly beautiful effects produced by the large foliage and the long-stalked pendulous flower-heads, when seen from beneath, as he was conveyed in a boat upon the streams along the banks of which large-sized trees of this handsome Byttneriaceous plant were growing. The species was first sent to Kew by Dr. WALLICH from Calcutta, whither it had been introduced from Madagascar. A figure appeared in the Botanical Magazine, t. 2503. In the Palm-house at Kew a good specimen is now bearing a number of its showy flower-heads.

- THE WEATHER, -General remarks on the temperature, rainfall, and duration of bright sunshine, for agricultural and sanitary purposes, during the week ending Jan. 21, 1884, issued by the Meteorological Office, London :- The weather has continued very dull and gloomy in almost all parts of the kingdom, though, except in the extreme west of Scotland, dom, though, except in the extreme west of Scotland, there has been very little rain. The temperature has again been very high for the time of year, the excess in "Scotland, E." being 9°, in "Scotland, W." and "England, N.E." 7°, and in most other districts 4° to 6°. The maxima were recorded either on the 4 to 0. The maxima were recorded either on the 15th, 20th, or 21st, and ranged from 51° in "Scotland, N.," "England, E.," "England, S.W.," and the "Channel Islands" to 54° in Irelaod, and 55° in "Scotland, E." The minima, which were registered on different days in the various districts, ranged from 30° in "England, E.," and 31° in "Scotland, E.," to 40° in "Ireland, S."
The rainfall has been a little more than the mean in "Scotland, W.," but less in all other districts. Over the greater part of England scarcely any has fallen. Bright sunshine has been generally ficient. In "Scotland, E." 37 per cent. of the possible duration was recorded, but in other parts of the sible duration was recorded, but in other parts of the kingdom the percentages were much lower, varying from 4 in the "Midland Couoties," and 5 in "England, N.W." and "Ireland, S.," to 21 in the Channel Islands, while in "England, S.W." the weather was quite sunless. Depressions observed.—During the whole of this period an anticyclone, in which barometric readings were an anticyclone, in which caronic retainings we above 30.6 inches, lay over France, or the southern parts of our islands. No depressions of importance approached our coasts until near the end of the week, when (late on the 19th) an exceedingly deep and rapidly moving disturbance reached our extrem northern coasts from the west ward, causing very violent south-westerly gales in the north of Scotland, and fresh or strong gales in the west and north generally. As this depression passed away over Scandinavia it was succeeded by another, which on the evening of the arst was shown off our north-western coasts, occasioning a rapid decrease of pressure over Ireland and Scotland, and strong winds or gales on all our coasts,

COLONIAL NOTES.

CINCHONA .- One fact becomes more and more apparent that although Cinchona cultivation is still increasing in different parts of the world, especially in Ceylon and Jamaica, considerable uncertainty exists as to the exact species that are being grown. It is evident that until this confusion is cleared up the commercial cultivation of the plants can only be carried on by rule of thumb, and the assistance the chemist would be capable of rendering to the cultivator will be minimised through the shortcomings of the botanist. Nevertheless some interesting facts have been placed on record, and one or two of these point to the probability that when the botanist has done his work he will only have made it still more evident that the cultivator must always look to the chemist to help him to decide under what conditions of growth any species or variety of Cinchona may be made to produce the most favourable yield of alkaloid. In the first place Dr. Trimen has reported some experience with what were believed to be succirubra plants all raised from one kind of seed, which seems to show that elevation has a great influence on the development of alkaloids, nearly twice as much alkaloid found in the bark grown at a height of 5500 feet as in the bark grown at 1500 feet, whilst the alkaloid in the former case was mainly lævorotatory (quinine and cinchonidine) and in the latter case principally dextrorotatory (cinchonioe and quinidine). Analyses made by the late Mr. J. E. Howard of barks from different elevations in Jamaica and in Ceylon appeared to confirm this inference, and it is worth mentioning that in all the cases the bark grown at the lower elevation, though considered to have the best appearance, was poorest in alkaloid. Mr. D. Howard has recorded the observation, that whilst in renewed bark produced on trees after strip-ping according to Mr. McIvor's plan, in which alternate strips are removed down to the cambium, the proportion of quinine is higher than in the original bark, the reverse is the case in renewed bark produced after the "shaving" process, in which the bark is usually removed uniformly and superficially, the tendency being then to develope cincbonidine at the expense of quinine. He also states, as evidence of the field there is for skill in the selection of Cinchonas for cultivation, that he has met with original "Red Bark" yielding 4 or 5 per cent. of quinine, whilst Calisaya bark from individual trees, grown in Ceylon under apparently similar conditions, varied from 3 to 9 per cent. in their yield of quinine. Such a result is perplexing; nevertheless, the general results seem to show that, other things being equal, the plants yieldiog the most valuable barks grow in the richest soil, which is quite in accord with what might be expected, and also with the experience of Mr. Broughton, published a dozen years ago. A similar lesson as to the relative effect of the depth to which the bark is removed appears to be taught by some analyses made by Mr. J. Hodgkin of different pieces of Ceylon succirubra quill-bark taken from the same consignment, some being natural, some renewed, and some partially natural and partially renewed on the same piece. In the renewed portion of the natural-renewed quill, where the shaving removed would necessarily be decreasingly thin, the quantity of quinine was less than in the entirely natural quills, while the cinchonidine was more than double. The entirely renewed bark showed an increase of quinine equal to 75 per cent, which more than outstripped the in-crease in cinchonidine. The cinchonine did not show much variation, but there appeared a consider-able diminution of alkaloid in the natural bark in juxtaposition to the renewed bark, Pharmaceutical

SHARK'S BAY.—Baron F, von Mueller has published a list of the plaots indigenous in the neighbourhood of Shark's Bay, West Australia, prefaced by a few historical remarks. The plants upon which the list is based were collected by the Hon. John Forrest. The herbage is varied, and in some respects excellent, the species of Gastrolobium and Oxylobium, which are deleterious to sheep, not being represented. Many tropical species extend into this part of Australia, and various southern forms are seen to extend northwards. Two new Verticordias are described, their presence in a sub-tropical region being very interesting. Proteaceæ are well represented, but Epacridaceæ, Candolleaceæ, Ferns and Orchids, are wanting

Home Correspondence.

Hardy Primroses.—I send you herewith a box of Primrose flowers in many colours, not to show the "mildness of the season," that has been amply demonstrated already, but rather to exhibit the purity and freshness of colour found in the blooms this season. Here, growing in a horribly stiff unkind clay, without a particle of shelter, the Primroses exhibit exceeding beauty such as at this usually inclement season of the year might well cause us to wonder whether May has not fallen into the arms of January. The flowers may not be equal to Orchids in rareases or elegance, but I think there are few households, how-soever rich and fasticious the residents, in which a duplicate lot of flowers would not be welcomed. The little bunch of one kind shows how near we are getting to really blue flowers. A. Dean, Bedfont. [A charming bouquet, Ed.]

Camellia Donckelaari.—This old and not often grown variety is quite worthy of all the favour in which many cultivators still hold it. It was formerly more generally met with, and old plants are to direct from Japan, were carefully cultivated under glass, and immediately they were up in the seed pans were all attacked and destroyed. In a case like this it really does not matter whether the fungus is a Leptopuccinia, an Uromyces, or an Euromyces (to quote the elegant phraseology now being grafted on to the subject), or whether De Bary pot his spores to germinate or whether he did not, for there are no spores in the question, either Uredo spores, teleutospores, Æcidiospores, promycelium spores, or any other spores, big or little. The simple fact is, the seeds were probably saturated with the disease plasma of the fungus, exactly in the same way as the Celery seeds were in the instance described by Dr. Cooke. In that case, seeds taken from clean plants produced a crop of Celery free from Puccinia, and seeds from diseased plants produced plants every one badly infested with P. Apii; and although the plants were grown near each other in the same garden, one row of Celery keep free from disease, and the other row was destroyed by the fungus, which it doubtlessly inherited from its parents through the seeds. Just in the same way as hereditary disease is handed down from the parents in the ovum in animals, so disease is often carried on from one generation to another in the seeds of plants. No one can see the germs (say of phthisis) in an ovum; why should disease germs be visible

nearly all in this district originated, were brought from Leicestershire by the wife of our late vicar. A. D. Webster, Llandegai, Bangor.

An Old Pear Tree made Fruitful,—Reference having been made in the columns of the Gardeners' Chronicle to a Beurré Rance Pear tree on a south wall during the past year, carrying a crop of thirty dozen fruit, allow me to say that, on having the erop gathered last autumn, I had the fruit weighed, and they gave an average of 12 oz. each. This Pear tree was tap-root pruned three years ago, and fresh soil given after the operation. It has matured sixty dozen of fine fruit since the root-pruning. No good fruit had been taken from this for many years before. I send a few fruit for your inspection. Robert Smith, Kenward Gardens, Yalding.

Natural Layering, —In proportion to the frequency we observe it, or the commonness of its occurrence, so the less will our curiosity be excited, or our attention drawn to the many and wonderful contrivances Nature has recourse to for the multiplication of plant life. When individuals are increased by specially modified structures, as the runners of Strawberries and of some species of Potentilla, or the stoloniferous stems of some Hawkweeds, or the



FIG. 24.-FRUIT OF CAMELLIA DONCKELAARI.

be found growing in borders or tubs that are wonders of floriferous beauty in their season. It is a moderate grower, and sets its bloom-buds freely—so much so that a timely thinning-out of these is advantageous, four or more often making their appearance on the tips of the shoots. It is also a variety that produces seed almost as abundantly as single forms of the Camellia, and which, on plants kept under glass the whole year through, will be ripe during late autumn or winter (see fig. 24); these are as useful for stock rearing as those of C. simplex, and reproduce the variety with some degree of constancy. The plant from which the drawing of the bloom (fig. 25) was taken grew at Spring Grove, Bewdley, the residence of J. D. Clarke, Esq. The plant was 10 feet in height and 6 feet in diameter, and the flower sent measured 13 inches in circumference—a fine example of the variety.

Sweet William Fungus,—I think Mr. C. B. Plowright, in adverting to this subject on p. 88, has completely overlooked the meaning of the instructive letter on the Sweet William fungus that you published on p. 57. Of course it is very interesting to hear what my esteemed friend has to say about the fungus being "a true Leptopuccinia," and curious to hear that he considers it may be a distinct species peculiar to Dianthus simply because De Bary's effort to make it grow artificially on Lychnis and Silene (where it grows naturally in profusion) had "no effect." The really instructive part of the original letter is this:—Your correspondent's Sweet William seeds came

in all tissues? The subject is an important one, and this case has a distinct bearing on the allied fungus of corn mildew, Puccinia graminis, which no one doubts is carried on from one generation to another in the seeds. This being the case, and nearly every grain of corn being probably saturated with the poisonous plasma of corn mildew, the statements regarding the production of mildew on corn from the contact of spores from a Barberry bush (the corn, it must be remembered, being almost invariably infested with breeditary disease) should be received with very great caution. W. G. Smith.

The Stinking Hellebore (H. fætidus).—When in full flower this is both a distinct and beautiful plant, as may at present be seen in some of the woods here, where it frequently attains the height of over 2 teet, and with from forty to fifty flowers on a stem. I believe it to be wild here, indeed its occurrence in one or two ont-of-the-way places at once dispels the idea of its having been introduced. After reading Mr. Brockbank's excellent article on "Helleborus niger and its varieties," I am inclined to believe that most of the plants grown by cottagers in this neighbourhood are none other than the Brockhurst variety for on examining those in several gardens about, I find them to exactly agree with his description of that form—the stalks being green, and with scarcely a trace of purple mottling, and which Mr. Brockbank describes as the great difference between his and Miss Hope's variety. The original plants, from which

Willow-herbs, we conclude it is natural; and so it is. But when ordinary stems are made to serve the purpose of increase our attention is diverted to it at once, as correspondents testify at pp. 56 and 90 of the present volume. Forsythia suspensa and Jasminum nudiforum, belonging to two closely allied yet distinct natural orders, annually produce long, flexible, cord-like shoots that emit roots freely at their tips on coming in contact with the soil. They seem even to possess the power of burrowing or inserting themselves to some depth in the soil, and forming a sharp angle, or knee, when the main axis is continued beyond the point where roots are emitted. If grown near to, or fastened to, a wall which is not too solid or dry, young shoots will often insert themselves into the crevices, and continue to grow and flower freely, although severed from the parent plant. In a state of Nature this habit could not fail to be of service in rambling over or amongst rocks, bushes, or other of Nature this habit could not fail to be of service in the sharp of the state of the growns eason is at all a moist one roots will be readily produced where the branches rest on the ground, much to the inconvenience of the cultivator. Among other exotic plants coming under the care of the gardener, and requiring hothouse treatment, analogous instances occur in subjects more or less widely related and dissimilar in appearance. Russelia juncea, and several

or most of the other species, root freely and form young plants if the twigs are allowed to come in contact with the soil in which they are growing, or damp ashes or gravel on which the pots are stood. The lower shoots of Barleria flava proceed for some distance in almost a horizontal direction, then suddenly turn upwards, forming a right angle with the older part. From the lower side of this knee great fleshy roots are produced, although in no way touching the soil. In Mariea gracilis we have a remarkable instance, not of a stem, but a flower-stalk becoming proliferous. After flowering young plants originate inside the spathes whence the flowers emanated. As these plantlets increase in size the stalks bearing them hang down, affording them an opportunity of rooting into the soil. If by any chance they have failed to root they will nevertheless remain fresh for a year, at least, and produce flower-stalks while yet in active connection with, and supported by, the parent plant, Z.

Potato Disease,—It does not seem to be so well known as it should be that Potato tubers are fre-

December 1, 1883, p. 698) is generally mere sun burning, or natural autumnal fading, and no evidence either of ill health or the presence of the Peronospora. With this I send you evidence (but not for publication) of the correctness of the above remarks, W. G. S.

Watering Plants,—Simple though the watering of plants may appear, it is one of the most important operations in gardening, and requires great skill and knowledge, as so much depends on the way it is carried out, for however good and suitable the soil may be for the particular subjects it is used for it may soon be spoiled by the indiscriminate application of water, which, if administered in too great quantities, or at the wrong time, clogs the soil, and quickly renders it close, sour, and inert. Many, thinking perhaps to avoid these evils, are in the habit of giving water in driblets, which is as great a mistake as giving too much and too often, as by adopting the first course the balls of the plants are never properly soaked, and though they may appear sufficiently moist above it frequently occurs, and would be seen if they were examined, that they are dust-dry below. For Heaths

activity and vigour of the freshly formed roots. J. Sheppard.

Jasminum nudiflorum,—This fine winter blooming climber is so beautiful on the cottages in this locality just now, and, indeed, has been so for some time, the fine open weather favouring the flowers to the utmost, that one marvels not to find it amongst forced market plants. It blooms so freely, even near to the ground and upon every piece of wood, that were small well wooded plants specially prepared for pot culture, as Deutzias and similar things are, the result should be very successful. A plant that blooms naturally at Christmas would, of course, need little forcing, and though it is common enough in the country, it is not so in towns. For these reasons this Jasmine should make a popular winter pot plant. A. D.

Senecio mikanioides.—This plant, mentioned on p. 86, has not been turned to much use in England, and though it has been in very good hands it has failed to make an impression. I have had it for at



Fig. 25.—Camellia donckelaari. (see p. 120.)

quently badly permeated with disease when there is no sign whatever of its presence on the skin of the Potato. Potatos are harvested apparently sound, and the keenest eye can detect no discoloration of the skin. On cutting such Potatos in pieces the interior mass, and that only, is often brown with the disease, and this does not reach the skin. During the winter this brown stain at length travels to the skin from the linside, and then bursts through and produces the Peronospora. It is evident that in instances of this class (which are perfectly well known to practical men) the disease cannot have reached the tuber through the skin from the outside, but must have traversed the stem. In other instances tubers are sometimes badly diseased when the plant above-ground has shown no outward trace of the perfect Peronospora. In fact the Peronospora sometimes confines its growth entirely to the interior of the plant, and does not burst through the organs of transpiration at all. The presence of the Peronospora within is manifested only by a peculiar faint putrid odour, and the much deeper green tint of the foliage. The presence of the Peronospora within its manifested only by a peculiar faint putrid odour, and the much deeper green tint of the foliage. The presence of the Peronospora within the tissues causes an abnormal production of chlorophyl), and the dark green colour of the leaves is a certain sign of disease within. The "yellowish tinge" referred to as a sign of ill health in a recent lecture (Gardeners' Chronicle,

and Azaleas to get in this condition is very injurious, as their hair-like roots must perish, and the only way to prevent this is to give thorough soakings when they require water, and then leave the plants to themselves till they need the same attention again. The experienced cultivator knows when this time has arrived by giving a single glance at the soil, but there are other indexes to go by, such as touching the surface of it or sounding the pots by a rap from the knuckle, when, as the balls shrink from the sides if dry, and the soil becomes full of air, the pots will ring, but if the balls be wet there will be little or no sound beyond a dull thud, which proves that the soil is full of moisture, and should have no more till the greater portion of what is in has evaporated or has been taken up by the plant. The great thing is to find out and fix on the happy moment when the drink is wanted, which time, careful observation, and a little practice will soon teach, as to the watchful eye plants soon show their requirements by their distressed or satisfied look. During winter, except where there is much artificial heat kept up, very little water is needed, and by keeping plants rather on the dry side when they are not growing or flowering they get a rest, and the soil becomes aerated and sweetened, the highly beneficial effects of which are seen in the spring by the improved health given through the increased

least ten years, though I cannot tell how it came into my garden. It was used for trailing from baskets, but though it makes much longer shoots than the Ivy-leaved Pelargoniums, which it imitates, it is very inferior to them in neatness of growth, and I have never seen it flower out-of-doors. I have given it to some of the best gardeners in my neighbourhood, who were struck by its very vigorous growth, but I have within the last two years discarded it as a useless plant for outdoor decoration. C. W. Dod, Llandudno, Jan. 21.

Filtering Fungus Spores through Sand,—The position my friend Mr. Plowright takes in regard to this subject reminds me of the chief character in the Barbier de Séville—wheo I think I have "cornered" him in one direction he suddeally appears in a wholly unexpected position. My friend now says my glass tube experiments were imperfect, and that the imitation of rainfall was incomplete. There was nothing then left for me but to patiently await a real shower of rain, so I told my people here to be on the look out for one. Just as I was going to bed on Sunday night, my maid told me a few drops of rain were falling, so in a trice I whipped out a clean flower-pot, \$\frac{1}{2}\$ inches wide and the same deep, covered the hole ioside with calico, filled the pot with sand and #2-urated the sand

with water; when the water had drained out I put the pot in a perfectly clean white plate and placed a few oats diseased with the smut fungus on the top of the sand. Before I went to bed the moon had risen and all seemed to bid fair for a fine clear night. Many times during the night I got out of bed and made meteorological observations at the open window, but although there might have been a slight fall of rain during the night, I saw the stars every time, and could detect onthing on my naked arm but a little dew. At the break of day I rushed to my flower-pot with a heavy heart, and on taking it from the plate one or two drops of water had percolated through the sand and calico and rested under the hole at the bottom of the pot. My microscope was ready, and a \(\frac{1}{2}\)-inch object glass ready screwed in. With a clean camel's hair brush I transferred the drops of moisture to a clean gase plate, and on examining them under the microscope they were charged with Ustilago spores. As overy little moisture had fallen I did not expect to see any. I do not doubt any of my friend's facts—far from it; I esteem his facts highly, and carefully catalogue them. I only doubt some of the deductions he (as I respectfully think) perhaps too hastily draws from his facts. W. G. Smith.

Glass v. Wood: Cordon Pear Trees, Tree Glass v. Wood: Cordon Pear Trees, Irree.
Labels, &c.—Perhaps there are few gardeners of the
present day who are not convinced that the more
glass and the less timber there is in horticultural
buildings, the better they are adapted for plant, and
especially for fruit, growing. But it is one thing to
the convinced in one's own mind that such is the case. be convinced in one's own mind that such is the case, and another to put one's own idea to the test of practice. As no one would like to see his house fall, either before or after it is finished, I confess I have felt my way up, and I also confess that I was some-what afraid before I finished my last effort, that it might be a failure; but as it has in every way been a might be a failure; but as it has in every way been a success, I will describe the house in the hope that it may be of use to some who would be glad to reduce the wood. It is a small house, in two divisions, 34 feet long and 12 feet wide, and the back wall 12 feet 6 inches high; 9 feet 6 inches of brick and 2 feet 9 inches of glass, in which are the ventilating libble, on gives consigning by the sural elbow because lights on pivots opening by the usual elbow bearers. The front wall is 2 feet from the ioside border, 1 foot Ine front wan is 2 feet from the losted border, I loof brickwork and I foot of wood, in which there is a 6-inch board opening in the usual way. The astragals (for there are no rafters) are 16 feet 3 inches long, and before being worked were 2 × 1½ in., (now a little less), and the rabbet, ½ in., under the glass is well bevelledoff. Italf way up the sashbars, and screwed to each, runs a purline of 14 angle and to each runs a division are two supports of 14 in, from barrel, and from their junction with the purline are carried horizontals of the same size to and let into the back wall. This makes the whole structure as rigid as if times the amount of timber and iron was used. front plate, which is bevelled outside and in, is covered with lead trimmed into the O G gutter projecting in over inside, no water can lodge on the plate. The glass does not project over the plate in the usual way, but pitches on to the lead which carries the water into the gutter. All plates, &c., are bevelled on the inside up to the glass, the size of the panes of which is 16 × 27 inches. This will show that there are but few sashbars in such a house; the simplicity and little building there is are in themselves a recommendation, but the light is the desideratum. The whole thing looks as frail as a spider's web, but it stands the pressure of the wind, to which it is much exposed, better than any house on the place. It was built for an early Peach-bouse, to supply fruit for the London season, and planted with Waterloo, Alexander, Hale's Early, and Early Beatrice; but I have done with houses in England, and hope in a have done with nouses in England, and hope in a few weeks to be where they are not required. I intend about the end of the present month to go to Queensland—not to give up Peach growing, but to add to it the cultivation of Sugar, Pines, Bananas, Sc. Before I stop writing may I trespass a name farther on your space to enter a plea for oblique cordons on walls? Three years ago next March I planted a wall 75 yards long with Pears and Plums in about equal numbers and at 18 inches apart. Some of the Plums are now 13 feet long. They were all maidens. Not an inch was cut off any of them, but the points were bent down, and they broke from tip to the points were bent down, and they broke from tip to bud. Some recommend cutting them back to cause them to break regularly, but it is a waste of time. Owing to the cold and bad soil here Pears in the open quarters do badly, the fruits being small, spotted, cracked, and of no flavour; but the cordon wall has shown us its advantages. True it has glass coping projecting 28 inches, with glass partitions projecting 24 inches at every 10 yards, and the result has been most satisfactory. Bearré Diel, for example, which was, perhaps, the worst of all in the open, has on the wall given us a heavy crop of fruit; and other sorts in proportion. The coping of fruit; and other sorts in proportion. The coping is light T and angle-iron, glass 28 × 24 inches, and removable (it is all out now), but the partitions are permanent. I have heard cordon Pears objected to

because they do not stand pinching well. I never pinch them, but after the second or third leaf has been made I keep the rest picked off. The shoots grow weaker, and soon harden, when they are cut half-way back; they soon break again, and the same process of picking goes on. In this way the permanent leaves are large and healthy, and surround fine healthy flower-buds, not one of which burst into wood in the past season. Plums stand any amount of pinching. Let me allude to yet another hobby, a short time ago in the Gardeners' Chronicle the subject of labels was wisely and very necessarily mentioned. Well, there are labels and labels, but those manufactured by Mr. Smith, Stratford-on-Avon, either for nailing or hanging or placing in the ground, I think are as yet the best. Should a few Queensland notes be of any interest to readers of the Gardeners' Chronicle, I shall be glad to supply them, and if I can but show that there is a better field there than here, the information may be of advantage to many, for when one sees in the gardening papers how many nurserymen there are who can advertise a stock of hands and brains at almost any price down to starvation point, I think it would be real philanthropy to try to ease the market. D. Buchanars, Shevwood, Tunbridge Wells. [We heartily wish our old and valued correspondent a pleasant voyage out, and good bealth and prosperity in his new home. The honest opinion of such an experienced man as Mr. Buchanan, on Queensland as a field of enterprise for British gardeners, would be of the greatest value, and we need scarcely add how glad we shall be to bear from him. Ed.]

FORESTRY.

INTERNATIONAL FORESTRY EXHIBITION. - The new lists of patrons and general committee of the above have lately been issued. The project has been warmly taken up in this country by such competent and influential authorities, in addition to those already announced, as the Commissioners of Woods and Forests, the Director of the Royal Gardens, Kew, the Secretary of State for War, the Institution of Surveyors, England; the Royal Society of Edinburgh, &c. ; while the names of the Senior Woods and Forests Commissioner for England, the Governor of South Australia, the Surveyor-General of Forests, New Brunswick; the Commissioner of Agriculture, Washington; and the Principal of the University of Edinburgh, have been added to the general com-The guarantee fund has been raised by the subscriptions of the Dukes of Devonshire and Westminster, the Marquis of Bute, Sir Samuel Wilson, and others, to considerably over £6000. But when the project is more immediately placed before the landed proprietors of Great Britain, whose interests it is intended greatly to promote, this sum should be largely augmented. Applications for space come in daily, and there is hardly a country in the world which will not be represented in one of the various sections. The outside collection in the way of foresters' huts, pavilions, fences of various kinds, &c., promises to be a large and interesting feature of the Exhibition. At a meeting of the Executive Committee, held recently, the Marquis of Lothian presiding, a letter was read from Dr. J. Crombie Brown, Haddington, offering to deliver lectures in the Exhibition on subjects connected with the forestry of different countries, and also offering to prepare handbooks of a popular nature on the same subject for sale during the Exhibition. The letter was remitted to the Committee on Essays and Reports. In view of several offers of special prizes having been intimated to the committee, a motion (of which previous notice had been given) came up for consideration, to the effect that special prizes be not accepted. An amendment empowering the committee to accept such prizes, was, however, agreed to by a large A communication was read from Iler Majesty's forester at Balmoral submitting plans of a Swiss châlet, which Her Majesty proposes to exhibit, along with sections of Scots Fir-wood from the Ballochbuie forest. The committee, it need hardly be said, very cordially accepted the offer. The proposed châlet will occupy a considerable extent of space, and, covered with bark, will present a rustic exterior. The sections of Scots Fir-wood will be shown both in and around the building, and, altogether, the display will form an interesting feature of the Exhibition. The question of the proposed site for the Exhibition came up for further consideration, and though the matter has not been definitely settled yet, the committee hope to be able shortly to announce the completion of the negotiations which are being made in this direction. The Committee on Applications for Space met afterwards, and disposed of a number of communications addressed to them. These applications, we believe, are coming in freely from various countries.

At a meeting of the Executive Committee held on January 16, it was reported that arrangements for a very eligible site for the Exhibition were all but completed, and the committee hoped to be able to announce at the next meeting all details and arrangements connected therewith. Applications for space were submitted to the meeting from various foreign Governments and numerous private individuals, all of which were conditionally accepted; and it was announced that the Prince of Wales, and various other members of the Royal Family, intend to exhibit several extensive and valuable collections of a suitable and interesting nature.

CARPETS FOR TREES .- During the dreary, naked, cold season of winter, when most trees are stripped of their foliage, it is not only a beautiful but refresh-ing sight to behold our woodlands carpeted with such dwarf shrubs as are suitable for growing beneath the shade and drip of our larger trees. Carpet plants, in contradistinction to general underwood, may be classed as evergreens, which, from their low, procumbent mode of growth, are hardly in the true sense of the word suited for game coverts. To clearly define the difference would, however, be no easy matter, and even were it possible to do so, would in the end be productive of but little good, as the habits of different plants vary so much that what is used io one place for carpeting purposes might in another and more favourable situation be equally valuable for game covert. A good example of this will be found in our covert. A good example of this will be found in our common St. John's Wort (Hypericum calycinum), which, when planted out and allowed to ramble at will amongst Bramble, Privet, &c., forms a capital covert, whereas when used in open, airy situationssuch as alongside shrubbery walks, or beneath our large woodland trees-soon forms a dense evergreen carpet, of so compact a growth as to be almost impenetrable even to ground game.

There are but few plants, comparatively speaking, of a low, trailing habit, that can be advantageously employed for planting in shady positions, the following being a list of those generally in use :- St. John's Wort, Periwinkles (Vinca major and V. minor), Gaultheria Shallon and G. procumbens, Euonymus japonicommon British Ivy (Hedera helix). The St. John's Wort, as a low, spreading shrub, is unsurpassed, and thrives best in a light sandy or peaty soil. It is readily propagated by division of the roots, and when planted out in small patches. when planted out in small patches, a foot or two apart, the creeping stems soon cover a considerable surface of ground, and form a dense evergreen mass, covered in summer with hright golden flowers. For covering the base of walls where, from the dryness of the soil, few other plants could exist, the St. John's Wort is invaluable; indeed, in this respect it is perhaps not excelled by any evergreen plant in cultivation.

A very pleasing effect is produced by having mixed patches of Periwinkle and St. John's Wort, as when in bloom the contrast of commingled yellow and blue is very beautiful. Both these plants are in flower here at present, which shows the extreme mildness of the weather, their usual flowering period being from May to July. The St. John's Wort is supposed by many to be injurious to the trees under which it is growing, and several iostances have occurred here in which Horse Chestnuts surrounded by this plant have gradually become unhealthy, and ultimately died out.

Gaultheria Shallon, another plant of creeping habit, is not withstanding its many good qualities, seldom planted to any extent in our woodlands; but this may, to some extent at least, be accounted for by the high price of the plants, as well as the small size of those purchasable from our nurserymen. Like most other North American plants the Gaultheria prefers a rather damp peaty soil, and is one of the few shrubs found to thrive in Pine plantations. The ornamental berries, which are borne in great abundance, are greedily devoured by pheasants, and, in their native country, are not unfrequently used as food. Johnston, in his Chemistry of Common Life, when treating of the "odours we enjoy" mentions that in the State of New Jersey, North America, the Partridge-berry Tea-berry, or Winter Green (Gaultheria procumbens), grows abundantly in the woods and drier swamps.

It is a dwarf evergreen, fragrant, heath plant, and possesses an agreeable aromatic odour, resembling that of the Sweet Birch. It has long been gathered and distilled, like other fragrant plants, for the sake of the volatile oil which in this way may be extracted from it. This natural essence is largely imported into Europe as a perfume, and is known in commerce as "Oil of Winter Green."

The Ivy which mantles over the old ruins, or climbs to the highest bough of the Oak, though in some cases not desirable, is better adapted for carpeting our woodland trees than most other plants. The extreme hardiness of this plant, combined with its ease of culture and dark evergreen foliage, renders the Ivy a particular favourite with most people. A damp climate and maritime situation seem to foster the growth of Ivy, and here, I am sorry to say, it has become quite a nuisance, and necessitated the expenditure of a great amount of labour in trying to eradicate it from young plantations. As an ornamental plant for carpeting the edges of woodland walks, or covering any unsightly garden object, it has no equal, and it will succeed in almost any soil or situation.

Several species of Euonymus and Cotoneaster are well fitted for ornamenting walks; the small leaved dwarf forms of the latter are especially valuable, and present us, when other trees are stripped of their foliage, always something on which the eye can rest, and on which is may be refreshed. Beneath clumps of trees, or even single specimens on the lawn, where the taller growing evergreens would have an unsightly appearance, any or all of the above plants may be successfully introduced as a carpet, in which positions they will be found to succeed even better than in the open. A. Webster, Penrhyn Castle, North Wales.

floqists' flowers.

THE NEW FLOWERS OF THE YEAR .- In the Scandinavian mythology we are told that when Thor and his companions arrived at Utgard he was told that "Nobody is permitted to remain here unless he understands some art, and excel in it all other men; and, says R. W. Emerson, "the same question is still put to the posterity of Thor," And the same writer remarks that the capacity of an Englishman is shown by his setting his shoulder to the wheel in order to advance his business, pursuing it with a wonderful heat, and working at it with a pertinacity that must accomplish worthy results. In some such persistent way the florist works and achieves. some it is given to combine in a new form all the good qualities of two others that had with them some alloy of imperfection. Others may be said to receive bountiful gifts from Nature, as unexpected as they are welcome. And it can be noted with real pleasure that there abounds a great activity in the production of new forms of flowers and plants, and some of the more prominent achievements of the past year are set forth in the following columns.

New AMARYLLISES have been in astonishing force during the past year, a greater number receiving distinguishing awards than in any previous year. Such an occurrence indicates the energy that is being thrown into the production of new varieties. Messrs. Veitch & Sons bave as usual come to the front, and such fine forms as Achilles, A. F. Barron, Adolphus Kent, Henry Little, Tennyson, and Wordsworth, are splendid additions to a numerous and very showy class, and they greatly enrich the extensive collection at Chelsea. There are evidences that an extended culture of these striking stove plants is one result of the activity of product :

Further proofs of the Rev. Mr. Horner's and Mr. J. Douglas' efforts to improve the Auricula were seen at the meeting of the National Auricula Society at South Kensington in April last. Mr. Horner has a fine new green-edge in Ajax, a flower of excellent properties throughout, and a valuable addition to a class needing to be strengthened. But this is one out of some thirty new varieties that Mr. Horner had raised, and the question is being asked, When will any of these new flowers find their way into general cultivation? Their sole possession by Mr. Horner places him at a great advantage as an exhibitor, for the Auricula is a flower that wins only on the point of quality in the pips, and

some of the newer varieties have this in a remarkable degree. Conservative (Douglas) is a fine addition to the white-edged varieties, and it will make a fine subject for the exhibition table. Mr. Douglas has a new green-edge in Mabel, which promises to be very useful. Conservative is to be distributed by Mr. Turner. The last-named has a wonderful break of alpine Auriculas. They are characterised by splendid pips, deep golden centres, rich body colours, with shadings or edgings as well defined as they are in the best laced varieties. During the past three years the alpine Auricula has taken a surprising leap forwards, and the credit of this is almost entirely due to Mr. Turner. It seems difficult to advance upon such varieties as A. Lloyd, Resplendens, Roysterer, and others; but who can forecast or limit the possidevelopment in any flower apparently capable of such expansion as the alpine Auricula? The double varieties increase slowly; but in Delicata (Dean), a large, firmly-formed primrose-yellow variety, we get an excellent companion to the deep purple Purpurea. A few other fine forms are likely to be seen next spring.

AZALEAS, now a very numerous class, were last season reinforced by a few fine varieties brought home from Ghent by the visitors to the International Exhibition - Antigone (double), white streaked and spotted with purple; Baron Nathaniel de Rothschild (double), rich purplish-crimson-very fine; Deutsche Perle (double), pure white - very fine in quality; and Princess Louise (double), salmon-pink, are among the best, and promise to make equally fine exhibition and decorative plants. Todman's Duchess of Albany is a hybrid variety, bearing medium-sized pure white flowers of good form, and produced with great freedom. It was certificated simply as a deco-

rative variety.

And what shall be said of TUBEROUS-ROOTED BEGONIAS? Their name is legion. It is interesting to note what an extraordinary accession was made to the double flowered varieties during the past year, not less than fifteen varieties having been awarded Certificates of Merit. Messrs. J. Laing & Co., as usual, lead the way with very fine double and some single varieties of superb quality. Mr. W. Bealby has also come to the fore during the year as an exhibitor of fine double varieties. The flowers of the latter are becoming much appreciated by dealers in cut flowers, as they can be wired and used in many ways.

Testimony must be borne to the great industry

shown by E. S. Dodwell in the production of new CARNATIONS AND PICOTEES. He has been eminently successful, and the high qualities of a few of his new flowers were recognised at the meeting of the National Carnation and Picotee Society in August last and elsewhere. C.B. Samuel Barlow, P. and P.B. Mr. Anstiss, S.F. Henry Cannell, P.F. Squire Whitbourn, and R.F. Dorothy, are all flowers of firstclass excellence. Mr. Turner's Rob Roy, S.F., is also a flower of first quality of the Clove type; Mrs. Keen, deep maroon, almost black, and Royal Purple, both from Messrs. Veitch & Sons, are decided additions to this latter class.

Of new CHRYSANTHEMUMS, the past season saw numerous additions to the Japanese class, and more than a dozen of these received awards at various places. The greater part were of Continental origin. George Stevens, Jeanne d'Arc, M. Astorg, Mons, Dufour, and roseum superbum, are very fine additions to the already largely-represented Japanese section. Bendigo is a finely incurved pale yellow sport from Mr. Heale; and Lord Alcester, a pale creamy-yellow sport from Golden Empress of India. Madame d'Arnaud is a very pretty rosy-purple pom-pon, shown by Messrs. J. Laing & Co.; and there are several Continental introductions in the class that were seen last year, which are entitled to the attention of English growers.

CINERARIAS had a good share of attention last season, and Mr. James secured over a dozen certificates. He has a strain remarkable for a dwarf and compact, yet vigorous growth, and large, stout, richlymarked flowers. As the Cineraria has pretty well ceased to be an exhibition flower, it may be assumed that these awards are intended to indicate only decorative value. Victory (Cannell) is a fine purplishcrimson variety, but with flowers inclining to coarseness, a defect common to some of Mr. James' varieties. One new double variety must be mentioned-A. F. Barron (Cannell), with large double rosy-purple flowers; but this class appears to be declining in popular favour.

New CLEMATISES are much less numerously produced than they were a few years ago; but Mr. Noble obtained three certificates last year, Jackmanni alba will give growers what was really wanted - a good white, summer blooming variety. John Brown, rich purplish-blue, and Krao, deep purplish-violet, are fine varieties of the lanuginosa

The COLEUS seems doomed to become to a considerable extent a neglected plant, though Mr. King, who is well known as a raiser, received certificates for Ellen Terry and Henry Irving, two varieties conspicuous for the beauty of their foliage. Canary Bird (Laing) has a prominent leaf-colouring which suggested

Mr. Henry Little, whose name has for so long been associated with the successful culture of the CYCLAMEN, produced three fine varieties last year, viz., Amethyst, a very rich purplish-violet; Mr. H. Little, the nearest approach to a crimson yet seen; and Mr. H. Veitch, a fine white variety of the giganteum type-all having been awarded Certificates of Merit. In the two former Mr. Little has reached shades of crimson and purple of astonishing depth and brilliancy.

It is long since so few new DAHLIAS put in an appearance as during the past year, and, indeed, but two certificates were awarded in London, viz, to Mr. Hurst, subsequently named Mr. W. E. Gladstone, a beautiful delicate show variety, and Duchess of Connaught, a distinct fancy sport from Old Gaiety. But it is rumoured that some fine show flowers that could not be exhibited in the autumn will be forthcoming in the spring. The single varieties increase with amazing rapidity, and they are now nearly as numerous as the Gouble flowers. Nor do they appear to have lost their hold on the popular favour. difficulty was experienced in making selections for certificates, and some of these went to a smallflowered section as being better adapted for general decorative purposes. One feature deserves notice, their adaptability for exhibition when set up in the form of bunches backed by their own foliage.

As usual Messrs, Kelway & Son were to the fore with new varieties of GLADIOLI, taking a dozen or so certificates for flowers of splendid quality. It seems invidious to make a selection where all are so good. Two new French varieties shown by Messrs. morin & Co., both of surpassing merit, received similar awards. It is said this flower is declining in the popular estimation, but if so, it does not appear to check in the least degree the enterprise of

A large number of new HYACINTHS were produced by Messrs. Veitch & Sons, and so fine have been the additions made during the past ten years, that it is only flowers of marked individuality that can now win certificates. Empress of India, rich deep crimson; Pink Perfection, delicate pale pink, and Souvenir de J. H. Veen, rich dark blue, are decided acquisitions.

The pretty crimson-maroon LOBELIA, Prima Donna, shown by Messrs. Carter & Co., with its dwarf-tufted growth and singular freedom of bloom, gives what is likely to prove a very useful bedding plant. As seen growing at their St. Osyth seed grounds it was winning in the extreme.

The rich crimson large flowered MIMULUS, Brilliant, shown by Mr. R. Dean, will prove of value as a decorative plant for pot culture; and the large hose in hose variety, named Novelty, though not new, is worthy of attention as being something more than a floral curiosity.

PELARGONIUMS of all sections are undoubtedly losing their hold on the public esteem, and perhaps one illustration of this is found in the dissolution of the Pelargonium Society. Mrs. H. Little is a charming pure white addition to the show class; it is of fine quality and very free. In the decorative section, Mr. Turner's Dresden China is singularly novel, having white flowers flaked and splashed with crimson and pale rose. Messrs. Pearson & Son produced some very fine new zonals; and Eckford's White Perfection pale rose. is an excellent pure white variety. Erl King and La Cygne, both new double forms in the zonal class, the first with salmon-scarlet, the second with pure white flowers, are both likely to prove extremely useful. Some good additions to the Ivy-leaved section have also been made-Dr. Masters and Future Fame, both raised by Mr. George, being of high

New forms of PRIMULA SINENSIS are plentifully produced, but the fine varieties raised by Messrs.

Sutton & Sons, Mr. G. Tomkins, and others, do not find their way to London. Careful selection is doing more probably than fertilisation to augment the num. ber of distinct new varieties; and the new blue forms, of which Holhorn Gem is a conspicuous type, arc being increased with added quality.

Every year sees fine additions of the new HYBRID RHODODENDRONS of the Javanese section produced by Messrs. Veitch & Sons. The individual flowers and trusses are becoming larger, bolder, and of richer colours. Such new varieties as Brilliant, Diadem, Scarlet Crowo, and Triumphans, among others, are

forms of great excellence.

In touching on new Roses it is satisfactory to note that English raisers now have a monopoly of those flowers which are distinguished by awards. Mr. Hose nowers without actusting under the Augustian H. Bennett has been very successful with his pedigree Roses, his Tea varieties being very promising. Merveille de Lyon, White Baroness, and Violette Bouyer, if quite distinct, are invaluable as additions to our white Roses. Anna Maria de Montravel and Mignonette are two charming additions to the Polyautha section, with their attractive clusters of flowers.

The useful group of SWEET PEAS is now engaging more attention than It did a few years ago, and Mr. Eckford is to be commended for his patient crossings. Five Certificates of Merit in one year to new varieties of Sweet Peas is a remarkable incident; one or two of these, though not strictly new, have hitherto been

but little known.

The group of TYDÆAS grown by Mr. Barron at Chiswick during the past season brought into notice the new additions that have been made by Continental raisers, and several Certificates of Merit were awarded.

A collection of VERBENAS grown in the open ground at Chiswick furnished several fine but not new varieties for bedding purposes. Mr. W. H. Stacey took honours with Delicata, Fantastic, Mabel, and Miss Maynard, all varieties with finely-rounded pips and distinct colours.

Of new plants coming under a MISCELLANEOUS heading it may be recorded that Messrs. R. B. Laird & Sons are sending out a batch of new Delphiniums, which will, no doubt, be looked for with some interest. Iberis Empress, a fine new annual Candytust, is identical with Dolbie's new Spiral Candytuft, and was first distributed under the last name. It is a very fine addition to the annual varieties. Some pretty new Gloxinias were shown by Messrs. Veitch & Sons, and others, Alabaster (Bennett) being one of the finest white varieties yet produced. Iberis gibraltarica hybrida is a most useful biennial, especially well adapted for pot culture. [Messrs. Carter & Co.'s deep blue-flowered form of Nemophila atomaria is a fine addition to this class of hardy anouals. Tropæolum Lustrous is an excellent crimson-flowered addition to the compactum class; and the excellent white Violet Comte de Brazzi is being warmly welcomed by all admirers of these sweetscented flowers.

The foregoing record, while not altogether exhaustive, is a worthy one, and characteristic of the sons of Thor who make floriculture their study; and what they have done in the past is but an earnest of what will be accomplished in the year into which we have but so recently entered. R. D.

Reports of Societies.

The Royal Botanical and Horticultural of Manchester,—Jan. 22.—The fifty-sixth annual meeting of this Society was held in the Mayor's Parlour of the Town Hall, Albert Square, Dr. John Watts, President of the Council, in the chair. The annual report having been taken as read, the Chairman, in moving its adoption, said he thought the members would find the report a very satisfactory document, but they would scarcely learn from it what a hard-working and anxions year the Society had passed through. Two years ago they had to rebuild the long range of plant-houses, enlarge the lawn by putting the houses further back, and remove the old Palm-house. They left off at the end of 1832 with a debt of Lagoo, which was an addition of 1832 with a debt of Lagoo, which was an addition of 1200 was caused by the rebuilding of the long range of plant-houses, and that he thought was a very satisfactory work. When that work was finished the Council thought they would have a little breathing the Council thought they would have a little breathing the council thought they would have a little breathing the council thought they would have a little breathing the council thought they would have a little breathing the council thought they would have a little breathing the council thought they would have a little breathing the same of the same part of the same part of the large exhibition house was had been of repairs. A year ago, when they asked a gentleman to look at it with a The Royal Botanical and Horticultural of

view to having it repaired, they could get no one to go on the roof, and they were solemnly told that if they ventured to keep it up they might have some of it coming down on the heads of the company beneath it. If anything had happened they would have had the moral responsibility, at any rate, and they came to the conclusion that the house must be pulled down. They had an early Whitsuntide coming upon them, and no possible plan of carrying out their ordinary large exhibition unless by a renewal of the house, but this they found was impossible, owing to its unsound condition. They had to do their best, and they determined not only to rebuild but to enlarge the house, so as to have more space for future exhibitions. They set to work in earnest, and when Whitsuntide came they were ready. They were not ready a moment too soon, for a more magnificent exhibition than the Whit-week exhibition of last year he though it would be impossible to conceive. The cost of the new exhibition-house and its heating apparatus was nearly Zooo. That was a very heavy sum for a small Society to raise in addition to its ordinary annual outlay. By the course adopted, however, that sum was raised, and they finished the year owing £330 less than any began it. He looked upon that eat as good cause in good dainy that money was in good hands they proved the set of the search of the year had been quite as well done as usual, if not even better than usual. In the autumn they had a grand they finished when year well had been quite as well done as usual, if not even better than usual. In the autumn they had a grand chibition of Apples, an exhibition of which, he ventured to say, Manchester never saw the like before. The Council though the Society was becoming increasingly useful in direct educational effort. They had established a series of lectures by Mr. Leo Grindon during the summer, and these lectures were becoming more popular year by year. They received an annual subscription from the Scientific Students' Association to admit their members received a third subscription from the Medical School at Owens College for the admission of their students. That was a line upon which the Society was prepared to enlarge. It cost them nothing, it was an opening for a very large amount of good, and would help the medical men of the tuture to become better acquarted with the various features of medical plants are usually continued to the found that the fact in the state of the found that the fact is the found that the the received. He did not think that was 60 medical plants are the found that the fact received. He did not think that was 60 medical plants are the found that the fact received. He did not think that was 60 medical plants are the found that the continued, and, he boped, improved. The Rose show, falling in the wet month of July, was as usual a loss to continued, and, he boped, improved. The Rose show, falling in the wet month of July, was as usual a loss to the Society. It cost the Society fize more than they received. The cottagers show, he was sorry to say, cost them £49 more than they received. He had hoped, and still hoped, that they might, by the introduction of new features, make that show useful. It would, however, be a matter of serious consideration by the Conneil how to get better results from the cottagers show. Turning again to the Apple show, he found that the Society received a balance from that of £57, which was a very satisfactory result. Then the calico garden party furnished them with £113, which was not so much as in the year before, for the reason that they gave a larger proportion of the receipts to the promoters for the other institutions. The Whitsuntide show, favoured by the weather, gave them the largest sum they had ever cleared at Whitsuntide, the result of that showbeing that the Society owed £6332, and on December 31 last they more than the was found to the donors of plants am they had a per a way in stimulating the pursuit of horticulture and floriculture about £5500 in extraordinary expenditure, and they were now owing

The National (late Borough of Hackney) Chrysanthemum.—The annual general meeting of this Society took place at the "Four Swans," Bishopsgate Chrysanthemum,—The annual general meeting of this Society took place at the "Four Swans," Bishopsgate Street, on the 17th inst., E. Sanderson, Esq., President, in the chair, there being a large attendance of members. This was the thirty-seventh annual gathering, the Society being the original Stoke Newington Chrysanthemum; it is the oldest Chrysanthemum Society extant holding a show in the metropolis, and the report, which was of a highly satisfactory character, stated that the members increased forty per cent. during 1883, and that the sum of £155 2s. was paid in prize money as awarded at the Royal Aquanium. The growth of the Society was shown in a statement made by Mr. William Holmes, the indefatigable Secretary, who said that when he took this office eight years ago there were but fifty-two members; but with the candidates to be elected that evening they had a membership of over 200 persons. The change of title has led to some modifications in the government of the Society, and instead of the comparatively small committee which has hitherto sufficed for the government of the Society, and instead of the comparatively small committee which has hold, and she per increased to thirty members with power to add to their number, who will meet at stated times as

arranged, and there will be at least two general meetings during the year. Provision is also made for the appointment of a succession of the state of the appointment of a succession of the state of the appointment of a succession of the state of the state of the state of the appointment of the state of

Obituary.

REV. C. FIRMINGER .- We regret to hear of the rather sudden death of the Rev. T. A. C. Firminger, M. A. Cantab, Honorary Member of the Agri-Horticultural Societies of India and of the Punjab. He was author of a Manual of Gardening for Bengal and Upper India, of which a second edition was published in 1869. He was for some time a member of the Scientific Committee of the Royal Horticultural Society, and died on January 18, at Warren Lodge, Edmonton, aged seventy-two.

The Meather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON, FOR THE WEEK ENDING WEDNESONY, JANUARY 23, 1884.

DAY.	BAROM	Temperature of the Air.						rome- l De- tions om sher's les 6th ition.	Wino.	. 4	
MONTH AND DAY.	Mean Reading Reduced to 32" Fahr.	Departure from Average of 18 years.	Highest. Lowest.		Range.	Mean for Day.	Mean for Day. Departure of Mean from Average of So years.		Degree of Humidity. Sat, = 100.	Average Direction.	RAINFALL
Jan.	In,	In.									In.
17	30.42	+0.69	43.0	37 • 5	5 5	40.7	+ 3.9	38.3	91	s.w.	0.00
18	30.42	+0.68	45.0	39.0	6.0	42.4	+ 5·s	38.9	88 {	S. : S. S. E.	0.00
19	30.43	+0.69	46.2	39.0	7.2	42.6	+ 5.6	38.6	87 {	w s w	0,00
20	30.28	+0.53	49.0	38.7	10.3	44-7	+ 7.5	41.4	91 {	S.: W. S.W S.W.: S.S. W.	0.10
21	30.33	+0.58	50.3	40.8	9.5	46 4	+ 9.1	42.6	87	S.	0 00
22	29.91	+0.17	51.0	44 5	6 5	48.8	+114	44-3	86	w.s. w	0.68
23	29.34	- a.59	52 0	43.0	9.0	47.9	+1c.4	44.7	90 {	S W. : W S. W.	0.12
Mean	30,16	+0.39	48.1	40 4	7.7	44.8	+ 7.6	41 3	89 {	w. sw.	0.30

Fine; dull day and night.
Fine; very dull day and night.
Fine; dull day. The sky clear at night occasionally.
Fine and beitter

19.—rice; timi ay. Ine say clear at ingut occasionally.
20.—Fine and bright during part of morning. Slight rain at 9 F.M. Strong wind afterwards.
21.—Fine morning. Bright dull afteraoco. Fine night.
22.—Very rough day and night. Heavy gale. The minimum reading of the barometer was 29.1 inches; turning to fise at about 9 F.M., and was 29.28 inches by midoight.

LONDON: Atmospheric Pressure.—During the week ending Jaouary 19, the reading of the barometer at the level of the sea increased from 30.46 inches at the beginning of the week to 30.50 inches by 9 A.M., decreased to 30.45 inches by 3 P.M., and increased to 30.46 inches by midnight on the 13th, decreased to 30.40 inches by 3 P.M. on the 14th, increased to 30.40 inches by 3 P.M. on the 14th, increased to 30.58 inches by 9 A.M. on the 16th, decreased to 30.58 inches by midnight on the 17th, increased to 30.51 inches by 9 A.M. on the 18th, and decreased to 30.57 inches by 3 P.M. on the 18th, increased to 30.62 inches by 3 P.M. on the 19th, and was 30.57 inches by the endof the week.

The mean reading of the barometer for the week at the level of the sea was 30.56 inches, being 0 39 inch higher than last week, and 0.65 inch above

inch higher than last week, and 0.65 inch above the average of the week.

Temperature. — The highest temperature in the shade in the week was 50% on the 15th; the highest reached on the 17th was 43°. The mean of the seven high day temperatures was 46°.4.

The lowest temperature was 35°.2, on the 13th; on the 15th the lowest temperature was 42°. The mean of the seven low night temperatures was 38°.5.

The greatest range of temperature in one day was 10°, on the 14th; the smallest was 5°.5, on the 17th. The mean of the seven daily ranges was 7°.9.

The mean temperatures were — on January 13, 4°.9; on the 14th, 45°, on the 15th, 46°.3; on the 16th, 40°.7; on the 17th, 40°.7; on the 18th,

42°.4; and on the 19th, 42°.6; and these were all above by 5°.3, 8°.5, 9°.8, 4°, 3°.9, 5°.5, and 5°.6, respectively.

The mean temperature was 42°.8, being 1° lower than last week, and 6°.1 above the average of the

The highest reading of a thermometer with blackened bulb in vacuo placed in the full rays of the sun was 68°, on the 14th. The mean of the seven readings was 51°.2.

The lowest reading of a thermometer with its bulb placed on short grass was 27°, on the 13th. The mean of the seven readings was 31°.7.

Rain.—Rain fell on the 16th to the amount of 0.01

ENGLAND: Temperature,—During the week ending January 19 the highest temperatures were 52° at Turo and Bristol, and 51°.1 at Liverpool; the highest at Bolton was 47°.3, at Preston 48°, and at Bradford 49°.8. The general mean was 50°.1.

The lowest temperatures in the week were 31°.8 at Cambridge, 32°.7 at Nottingham, 34° at Wolverhampton, Sheffield, and Sunderland; the lowest at Preston was 40°, at Bristol 38°, and at Liverpool 37°.2. The general mean was 35°.7.

The greatest ranges in the week were 18°.3 at Cambridge, 17°.3 at Nottingham, 16°.1 at Wolverhampton; the smallest ranges were 8° at Preston, 10°.8 at Bolton, and 12°.8 at Bradford. The general mean was 44°.4.

mean was 14°.4.

The mean of the seven high day temperatures was

The mean of the seven high day temperatures was 49°, at Truco, 48°.6 at Plymouth; and was lowest at Bolton, 45°.1, at Wolverhampton 45°.5; and at Nottingham 45°.9. The general mean was 47°.

The mean of the seven low night temperatures was highest at Preston, 43°.1, at Truco 42°.3, at Liverpool and Bradford 41°.8; and was lowest at Cambridge, 36°.7, at Wolverhampton 37°.2, and at Nottingham 37°.5. The general mean was 30°.9.

The mean daily range of temperature was greatest at Cambridge, 9°.5, at Brighton 8°.5, at Nottingham and Sunderland 8°.4; and was least at Preston, 2°.9, at Liverpool 5°.1, and at Bradford 5°.3. The general mean was 7°.1.

The mean temperature was highest at Truco. 45°.8.

The mean temperature was highest at Truro, 45°.8,

The mean temperature was highest at Truco, 45°.8, at Plymouth and Preston 44°.4; and was lowest at Wolverhampton, 41°.1, at Cambridge 41°.3, and at Nottingham 41°.5. The general mean was 43°.3. Rain.—The largest fall was 0.19 inch at Bolton, 0.09 inch at Truco, and 0.06 inch at Preston; the smallest fall was 0.01 inch at Plymouth, Brighton, Blackheath, Nottingham, and Liverpool The general mean fall was 0.03 inch. No rain fell at Bristol, Leicester, Cambridge, Wolverhampton, Bradford, Leeds, or Sunderland.

SCOTLAND: Temperature. - During the week end-SCOTLAND: Temperature.—During the week ending January 19, the highest temperature was \$4^{\circ}.4,
at Aberdeen; at Greenock the highest in the week
was 49^{\circ.2}. The general mean was 50^{\circ.9},
The lowest temperature in the week was 32^{\circ.5}, at
Aberdeen; at Leit the lowest temperature was 43^{\circ.2}.
The general mean was 38^{\circ.7},

The mean temperature was highest at Leith, 47°.5; and lowest at Aherdeen, 44°.4. The general mean

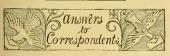
and nowest at Anterdetin, 44, 44.

Was 45.5.

Rain.—The largest fall was 0.87 inch, at Greenock, and 0.15 inch at Dundee; the smallest fall was 0.07 inch, at Leith, and 0.05 inch at Paisley. The general mean fall was 0.16 inch.

No rain fell at Edinburgh or Aberdeen.

JAMES GLAISHER, F.R.S.



OILERS: S. L. 1. Most of the manufacturers and dealers in boilers and hot-water pipes, &c., publish illustrated catalogues. 2. Because the hot water is the lightest, and the higher the rise in the pipes the quicker is the circulation.

CACTUSES: G. W. Uhink. There is the subject in the Eoglish language. There is no good book on

CLIMATAL INFORMATION: America. We will attend to your suggestions as far as possible, but such things cannot be bespoke to order.

GOING ABROAD: R. S. Having no practical experience of either country we do not feel justified in advising you in such a momentous matter, Had we to make the choice ourselves we should prefer Australia or New Zealand, and to go direct to either Sydney or Christ-Zeanand, and to go urrect to enter Sydney or Unist-church, as the case may be. A gardener, in good health, who knows bis business, and is not afraid to rough it at first, should be able to do well in either country. A tropical climate, like that of Queensland, or an arctic one, like that of Canada, must obviously have grave disadvantages.

HAILSTORMS: Charles Colebrook. You can insure your glass in the Royal Farmers' and General Insurance Company, 3, Norfolk Street, Strand.

HEREFORD SHOW: Observer. We are much obliged for the corrections, which, however, would have been more valuable if sent when the errors appeared. You have not complied with our rules by sending your name and address.

JOHNSON'S "GARDENERS' DICTIONARY:" C. G. Published by G. Bell & Sons, York Street, Covent Garden,

LæLia Crawshayana.—Mr. De B. Crawshay requests us to correct an error in our last issue: —"Lælia Crawshayana was not sold at £4 st, it was bought in "—a fact, we presume, which was-only known at the material content of the automorphism of the material content."

the time to the authoneer and ne owner.

LAPAGERIA ALBA: John Neal. Your plant seems to be suffering from over-much watering, too big a border, and perhaps a soured state of the soil. Three feet in depth is excessive; such wide borders are best made up piecemeal as a plant grows and its roots extend. By giving manure-water before the plant bad exhausted the fertility of the soil you have made matters worse. Reduce the quantity of soil round the plant, and give water with caution until the plant gets healthy again. See that the drainage is good.

LAVENDER: Leader. See the article on "Lavender Culture at Mitcham," in Mr. C. W. Shaw's The London Market Gardens (Garden Office).

NAMES OF FRUIT: G. Wall. Your Pear is named Vicar of Winkfield. — IV. C. S. Apple: Cat's-head.

Vicar of Winkfield, — IV. C. S. Apple: Cat's-head.

NAMES OF PLANTS: Amateur. We decline to waste any time in attempting to identify such a specimen.—

H. J. Ross. Onychinm auratum. — J. E. Brassavola nodosa, a poor variety of Udontoglossum crispum, and Adiantum concinnum.—R. A. B. 1, Acacia Drummondii; 2, A. armata; 3, send again when in flower; 4 and 5, Ccelogyne cristata; 6, no specimen; 7, Peristrophe speciosa.—J. V. J. Next week.

ORCHIO SEEDS: X. asks if seeds of Zygopetalum Mackayii and Dendrobium aureum are scarce, as he has some of last year's growth. [Why, certainly, At what rate per ounce can "X." offer it?]

POULTRY: A Nanice. Hens law fertile eyes when thou

what rate per ounce can "X." offer it?]

POULTRY: A Novica. Hens lay fertile eggs when they bave plenty of grit, healthy runs, food that is not overfattening, as Matze is when given frequently. There should not be more than eighteen birds to one cock. The best sitters are those that lay a certain number of eggs in the spring and early summer, and then show a desire to sit, such as the Darkings and Sussex, and other breeds with five toes. Cochin Chinas, Brahmas, and black Langshans, are good layers in winter, and will hatch out then. Most early hatched birds will lay in autumn and winter, but the eggs are small. The continual layers, that are seldom "broody," are Black Spanish, Polish, Hamburghs, and Houdan breeds.

Spanish, Folish, Hamburghs, and Houdan breeds.

SALSAFY, POINSETTIAS, AND TURNIPS: S. P. The
first you can sow about the beginning of May, in rows,
a foot apart. It is cultivated like the Carrot, and
lifted at the same time and stored in damp sand in a
cool place, where no frost can enter. The Poinsettia
is gradually dried off after the foliage has obtained its
full development, and stored away in a dry place tilt
year's shoots may be cut back to an eye or two. Cuttings or eyes made from these shoots make nice plants
in one season. Cut them to 6 inches in length, if for
cuttings, and insert them in sandy soil, and place in a
gentle heat; they will soon make root. Eyes are
made in shorter pieces with one bud on each; place
them on sandy soil, covering them so that only the
bud is visible, and treat as cuttings. Turnips may be
sown thinly in a france, on a mild bottom-heat (from
leaves only), in February, and later at intervals of fourteen days. The later sowings need not be under
glass, but under any simple contrivance to ward off
late frosts and cold winds. Thin early, give plenty of
air when it is mild, and water with warm water.
Choose early kinds. Choose early kinds.

SAP: The subject has been so often treated of that we scruple in justice to old subscribers to repeat it till we have something fresh to say. Read *Plant Life*.

LUGS: G. C. D. It is Testacella Maugei, an intro-duced species of a genus of Mollusca, now often found in gardens, and easily recognised by the small shell on its back. It has been several times illustrated in our columns.

SUGGESTIONS: Stitch is thanked for his communication tion. If the number were small and the time ample, it might be done; as it is, the condition are unpro-

TESTIMONIALS: B. H. S. E. If the testimonials were written for and received by the employer, the gardener has clearly no claim to them.

* * All communications intended for publication should be addressed to the "Editor," and not to the Publisher or to any member of the staff personally. The Editor would also be obliged by such communications being written on one side only of the paper and sent as early in the week as possible. Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

INTELLIGENT READERS, PLEASE NOTE: — Letters re-lating to ADVERTISEMENTS, or to the supply of the Paper, should be addressed to the Publisher, and NOT to the Editor.

FOREIGN SUBSCRIBERS sending Post-Office Orders are requested to send them to the Publisher of this journal, 41, Wellington Street, Covent Garden, and to make them payable to William Richards, at the Post Office, Drury Lane, London, W.C.

CATALOGUES RECEIVED.

WOOD & INGRAM, Huntingdon-Vegetable, Flower, and Farm Seeds. SMITH & SIMONS, Howard Street, Glasgow—Garden

Cultural Guide.

CLARKE BROTHERS & Co., Scotch Street, Carlisle—Flower and Vegetable Seeds. Louis van Houtte, Ghent, Belgium - Gesneriaceous

LOUIS VAN HOUTTE, Ghent, Belgium — Gesneriaceous Palatis.

Flower Seeds.
W. M. PILLINGER & Co., Chepstow—Vegetable and

Flower Seeds.

JAMES BACKHOUSE & Son, York—Flower and Vegetable Seeds, &c.

M. BRUANT, Poitiers, France—New Plants,

WILLIAM INGLIS, Kelso, N.B.—Vegetable and Flower

W. SMITH & SON, Aberdeen—Seeds, Plants, &c.
S. DIXON & CO., 34, Moorgate Street, London, E.C.—
Vegetable and Flower Seeds.

COMMUNICATIONS RECEIVED.—W. P.—W. Birkenshaw.—B. F.—W. S.—W. V.—W. D. C.—F. S. S. Co.—W. J. M.—C.—W. S. W. C.—W. J. M.—M. T.—H. E. W.—J. M.—Sir. J. P.—W. T. T. D.—Sir W. E.—G. M.—A. de C.—W. and N.—W. B.—F. E. C.—Prof. Heoriques.—H. V.—F. A. B.—G. V.—E. A. Carrie.—Geo. Engelmann.—W. H.—A. van Geett.—G. Bell.—Messs. Brogden.—Dr. Hugo de Vrise.—J. A. D.

DIED, on the 9th inst., at Aberystwith, GRAHAME, the younger son of the late George Brown, of Powis Castle Gardens, Welshpool, aged thirty-nine,

Markets.

COVENT GARDEN, January 24

[Tha subjoined reports are furnished to us regularly every Thursday, by the kindness of several of the principal selemen, who revise the list weekly, and are responsible for the quotations. It must be remembered that these quotations are averages for the week preeding the date of our report. The prices fluctuate, not only from day to day, but often several times to noe day, and therefore the prices quotations as averages for the past week must not be taken as indicating the price at any particular date, still less can they be taken as guides to the price in the coming week, Ep.].

No alteration this week. All goods in fair supply, with Grapes scarcely maintaining the rise of last week. James Webber, Wholesale Apple Market.

s. d. s. d.	s. d. s. d. Lemons, per case15 0-25 0
Apples, 1/2-sieve 1 0- 5 0	Lemons, per case 15 0-25 0
Cobs, per 100 lb125 0-135 0	Pears, French, doz. 1 6- 0
Figs, per dozen 1 o	Pioe-apples, Eog ,lb. 1 6- 2 0 — St. Michael's, each 2 0- 8 0
Grapes, per in. 11 2 0- 5 0	, orinicisted speaking 0- 0 0

VEGETABLES .- AVERAGE RETAIL PRICES.

VEGETABLES.—AVERAGE RETAIL PRICES.

Artichokes, Globe, d. 5. d.

Per doz. 30 - 5 o.

— Jerusalem, bush, 40 - .

Asparagus, English, per too.

Per too.

Per too.

Beet, per doz. 10 - .

Beet, per doz. 10 - .

Carrots, per bin. 04 - 0 d.

Radishes, per doz. 10 - .

Carrots, per bin. 20 - 0 d.

Carrots, per bin. 10 - 2 d.

Carrots, per

POTATOS.—Keat Magnums, 90s. to 100s. per ton; do., Regents, 90s. to 95s.; Champions, 80s. to 90s.

CUT FLOWERS .- AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Abutilon, 12 bunches 3 0- 6 0	Marguerites, 12 bun. 6 o- 9 0
Arum Lilies, 12 blms, 6 o- 0 o	Mignonette, 12 buo. 6 o- 9 0
Azalea, white, 12 spr. 1 0- 2 0	Narcissus (Paper-
Bouvardias, per bun, 1 0- 1 6	white) 10-30
Camellias, per doz 3 0- 6 0	Pelargoniums, 12 spr. 1 6- 3 0
Carnations, 12 blms, 1 0- 3 0	- zonal, 12 sprays o o- 1 o
Chrysanth., 12 blms. 2 0- 4 0	Poinsettia, 12 blooms 6 0-12 0
— 12 bunches12 0-30 0	Primula, double, bun. z o- z
Cyclamen, 12 blooms o 3- o 6	- single, 12 bua 6 0- 0 0
Epiphyllum, 12 blms. o 6- 1 o	Roses (indoor), doz. 2 o- 6 o
Eucharis, per doz 4 0- 6 0	- coloured, doz 3 o- 0 o
Gardenias, 12 blms 18 0-36 0	Tropæolum, 12 bun, 1 0- 2 0
Heliotropes, 12 sp o 6- 1 o	Tuberoses, per doz., 4 o- 6 o
Ivaciaths (Roman),	Tulips, 12 blooms 1 0- 2 0
72 CDT2VS 7 D= 2 D	Violets, 12 bunches 1 0- 1 6

PLANTS IN POTS.-AVERAGE WHOLESALE PRICES.

PLANTS IN POTS.—AVER
Aralia Sieholdi, dos. 3. d. s. d.
Aralia Sieholdi, dos. 3. dos. d.
Arbor-vite (golden). 0-24 o
Arbor-vite (golden). 0-24 o
Araleas, each 0. 6 o-18 o
Begonias, per dos. 0. 6 o-12 o
Begonias, per dos. 12 o-18 o
Cyclamen, per dos. 12 o-18 o
Cyclamen, per dos. 12 o-19 o
Dracena term dou. 12 o-50 o
Dracena term dou. 12 o-24 o
Epiphyllum, per dos. 18 o-30 o
Erica, various, dos. 9 o-24 o
Evergreens in var. 16 o-24 o
Frens, in var. 4 o-18 o
Frens, in var. 4 o-18 o

AGE WIOLESALE PRICES:

1, d. s. d.
Figure elastica, each 1 6-7 o
Foliage Plants, various, each . . . 2 o-10 o
Hyacinths, per dos. 8 o-40 o
Hyacinths, per dos. 8 o-40 o
Hyacinths, per dos. 18 o-40 o
Hyacinths, per dos. 12 o-18 o
Myrtles, per dos. 2 o-12 o
Palms in variety,
each 2 o-10
Pelargonium ser dos. 6 o-12 o
Poinsettias, per dos. 2 o-6 o
Foliagential, single, dos. 4 o-6 o
Solanums, per dozen 6 o-9 o

SEEDS.

SEEDS.

London: Jan. 23.—There is now an increasingly active demand for farm seeds. Choice samples of home-grown Clover seed are getting scarcer, and are realising rather more money. Of American red the stock in London is, for the time of year, exceedingly moderate. White Clover is firm at the recent advance. There is not much passing in Alsike. Fine Trefoil continues scarce. Rye-grasses are cheaper. Spring Tares keep dear. Very low rates prevail for Timothy. John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.

CORN.

CORN.

At Mark Lane on Monday the Wheat trade was exceedingly dull. Both English and foreign Wheat written 11. per quarter lower on the week, but prices were very irregular, and in some cases the decline was heavier for interior qualities. Flour followed the same course as Wheat, and was quoted 6d. to 15. lower for the week, the largest decline being on American. No alteration was, however, made in the official top price of town flour. In Barley good qualities were not a large proportion. Malting grades were firm, and grinding descriptions steady. Peas have receded 11. per quarter from the previous Monday's rates, and Canadian were quoted 35t, to 36s. Beans were without quotable alteration. New Odessa Maize was 6d. lower on the week, and next after lower figure, but the current market was not quoted at any decline.—On Wednesday next to nothing was done in Wheat, and quotations were nominal, but the tone depressed. For flour the market was in the ame condition. Barley showed steady value, and met a moderate demand. Beans and Peas moved off in retail quantities at Monday's currency. Maize was barely supported.—Average prices of corn for the week ending January 19:—Wheat, 38s. de, 1 Barley, 32s. 3d.; Oats, 19s. 3d. For the corresponding period last year:

— Wheat, 40s.; Barley, 32s. 6d.; Oats, 20s. 2d.

CATTLE.

At the Metropolitan Market on Monday there was a small supply of cattle, but good selections. The general trade was rather better for first quality cattle, Sheep supplies were good as to number and quality, but mostly prime heavy weights. Trade slow, with drooping prices. Our top quotation is for sheep weighing not less than 10 stone. Calves nominally lower; pig trade very dull. Quotations: —Peasts, 45, 64, to 55, 64, and 55, 64, to 55, 64, and 65, 64 to 75; pigs, 45, to 64. 64. Thursday's trade was quiet, Beasts were held with a shade more firmness, but sheep were difficult to move, even at a reduction. Calves and pigs sold slowly.

Tuesday's Whitechapel Market report states that supplies were not quite so large, but trade was very quiet, at the following quotations: F-rime old Clover, 95* to 105**s.; inferior, 60**s. to 75**s.; prime second cut, 90**s. to 10**s.; best meadow hay, 80**s. to 86**s.; inferior, 40**s. to 55**s.; and straw, 28**s. to 55**s. per load,—On Thursday there was a moderate supply of hay and straw on offer. The trade was quiet, except for straw, which was somewhat dearer. — Cumberland Market quotations:—Superior meadow hay, 80**s. to 12**s.; inferior, 70**s. to 75**s.; superior Clover, 98**s. to 12**s.; inferior, 70**s. to 80**s.; and straw, 33**s. to 37**s. per load.

POTATOS.

The Borough and Spitalfields Markets reports state that good supplies were on offer, and met a slow demand as follows:—Magnum Bonums, 8os. to roos.; Regents, 7os. to 9os.; Champions, 5os. to 7os.; and Victorias, 8os. to 100., per ton.—The imports into London last week consisted of 203 bags from Boulogne and 2 packages from Havre. packages from Havre.

COALS.

The following are the prices current at market during the week:—Bebside West Hartley, 145. 9d.; Walls End —Hetton, 165.; Hetton Lyons, 144. 6d.; Lambton, 151. 6d.; Wear, 145. 6d.; Thornley, 155. 3d.; Tees, 16s, ; Caradoc, 16s.

Government Stock.—Consols closed on Monday at 101½ to 101½ for delivery, and 101½ to 101½ for the account. The prices of Tuesday and Wednesday were as on Monday for delivery, and 101½ to 101½ for the account. On Thursday Consols closed at 101½ to 101½ for delivery, and 101½ for 101½ for the account.



FLOWERS.

LOBELIA Prima Donna

OBELIIA TIMB DONNA.

Awarded First-class Certificate Royal Horticultural Society. No modern introduction to the world of Flora has received a bearine welcome than was accorded to Committee of the Royal Horticultural Society. In habit it is very compact and dwarf, whilst the rich velvety crimson-marcon flowers—equal in size to those of Lorentz and the committee of the Royal Horticultural Society. In habit, we have a size of the Royal Horticultural Society. In habit, we have been a second flowers—equal in size to those of Lorentz habit, which was a size of the Royal Royal

NEMOPHILA atomaria atro-

Gorulea. Awarded First-class Certificate, Royal Horticultural Society. After years of anxious care and selection we have succeeded in fixing the beautiful rich purplish-blue in this charming novelty. The colour of the flower is a deep ultramarine, pure white centre, with a zone of black purple.

Price, in sealed packets, 11.6d., 21.6d., and 31.6d., post-free.

SWEET PEA Adonis.

The hright rosy-carmine blossoms of this distinct novelty contrasts most pleasingly with the pure white, scarlet and other decided colours already in cultivation Price, in sealed packets, 1s. 6d. and 2s. 6d., post-free.

NEW PRIMULAS. CARTERS' HOLBORN GROUP.

AWIERS' HOLBORN GROUP.

Awarded Bronze Banksian Medal Royal Horticultural Society. We have lately raised a section of compactness of habit, and substance, and size of flower. The better to distinguish our new strains from the ordinary ones in general cultivation we have formed them into a section designated "The Holhors," and the group will hereafter be identified with that appellation.

CARTERS' HOLBORN BLUE.

Awarded a First-class Certificate, Royal Horticul-tural Society. The first Blue Primula ever offered— and still the best.

W. R. Robinson, Esq., Gloucester, writes:—"Carters' Holborn Gem Primula is a great success, and gives satisfaction to all who have seen them."

W. WING, Esq., Oakham, writes:—"The Holborn Gem Prinula is now in flower, and there is no mistake about its being exactly as depicted in your Catalogue." Price, in sealed packets, 3s. 6d., 5s., and 10s. 6d. per packet, post-free.

packet, post-iree.
HOLBORN BIJOU
HOLBORN CARMINE
HOLBORN LILAC
HOLBORN MAGENTA
HOLBORN MAUVE
HOLBORN QUEEN
HOLBORN GOLDLEAF
Fach, insended practice of HOLEORN ROSE
HOLEORN SALMON
HOLEORN PEARL
HOLEORN RUBY
HOLEORN WHITE
HOLEORN PURPLE Each, in sealed packets, 2s. 6d., 3s. 6d., and 5s., post-free

ance, in seared packets, 23. out, 35. out,	HIC	. 5	, pust	nice
Price per				
New Aster Inimitable Quilled		d.	s. d.	s d.
New Aster Dwarf Crimson	_	0	2 6	5 0
New Calceolaria Golden Princess		6	3 6	50
New Begonia Crown Jewels 15. 6d.	-		3 6	5 0
New Cineraria Brilliant Prize 15. 6d.		6	3 6	
	_	6	5 0	5 0
		6	2 6	**
				5 0
New Godetia Spotted Carpet		6	2 6	* *
New Godetia Duchese of Albany		6		
New Calceolaria Victoria Prize 1/6		6	3 6	5 0
New Calceo. Australian Nugget		6	3 6	5 0
New Calceolaria Bird of Paradise		6	3 6	5 0
New Nasturtium Empress of India	1	0		
New Nasturtium Ladybird	Ì	6	26	
New Pepper American Mango	1	6	26	
New Poppy Victoria Cross	1	6	2 6	
New Wallflower Old Gold	I	٥	1 6	2 6
New Single Dahlia Unique 15.	1	6	26	50
New Petunia Emperor	I	6	26	3 6
New Nicotiana affinis	I	6	2 6	
New Statice Candelabrum	2	6		
New Viola Blue Perpetual	(I	0	2 6	
For full particulars see				

CARTERS' VADE MECUM, Price 15., post-free, or gratis to custo

THE QUEEN'S THE QUEEN'S And by Royal Warrant BERINGE OF WALES 237, High Holborn, London, W.C.

S QUELCH AND BARNHAM
Fruit and Flower Salesmen,
Long Market, Covern Garden, London, W.C.,
Are open to RECEIVE CONSIGNMENTS of GRAPES,
TOMATOS, CULUMBERS, and STRAWBERRIES; also
CHOICE FLOWERS, they having a special Trade for

Choice Florings, the above.
Consigners are assured that they will receive Full Market
Prices for all goods; Consignments receiving prompt and
personal attention.

ACCOUNT SALES forwarded daily.

ACCOUNTS SETTLED weekly.
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JAS. HOLDER AND SON have to offer the above in strong healthy plants, established in small 60-pots, consisting of Show, French, and Spotted varieties to name, 30, per too; also Extra Strong Plants in 48-pots, or dozen, Co., Jero, Also Double-flowering Iny-leaved prices. Packing included, Cash with order.

(Crown Nursery, Reading.

STANDARDS, 2/5 to 4 feet, 155, or 1 does not shall be beauthy plants, and embracing the best varieties in cultivation of Hybrid Perpetuals, & to Sawbridgeworth, Herts.

TRUIT TREES—FRUIT TREES

APPLES, PEARS and CHERRIES, Dwarf-trained, for walls,
&c., good trees, 15s, 15s, and 24s, per dozen.
PEARS, Fyramid, 4cs, and 3cs, per 100; good fruiting trees,
APPLES, Byramid, 4cs, 3cs, 3cs, 3cs, per 10c.
CHERRIES, Dwarf-trained Morello and May Duke, 15s, 16s.

and 24s. per dozen. CURRANTS, Red and Black, of sorts to name, 8s., 10s. and

RAPHER FILES. Fillhasket, 6s. per 100.
RAPHER FILES. Fillhasket, 6s. per 100.
ROSES, Dwarf H.P.'s, our selection, 40s. per 100.
CONIFERS, 100.
CONIFERS, 100.

CONIFERS, bushy, for pots, window noxes, occ., g to \$2, ar, 255, per 100 and y and Ontario, from \$ to 10 feet, \$8. to 355, per 100; 12 to 16 feet, extra fine, for screens, grown unable lines, 152 per dozen.

SH HI windle lines, 152 per dozen.

SH HI SH Hardy, of sorts to name, 255, per 100.

THORNS, Double and Single, of sorts, Standards and Pyramids, 500, and 925, per 50.

mids, 50s. and 75s. per 100. SPIRÆA PALMATA, fine forcing clumps, 10s., 15s. and 20s.

per 100.

AUCUBAS, well coloured, for hoxes, pots, &c., 9 to 12 in., 16s.
per 100; 12 to 15 inches, 20s. per 100.

THORN QUICKS, 15s., 20s. and 25s., per 1000, extra well

rooted. OVAL-LEAVED PRIVET, 4s. and 6s. per 100. WM. CLIBRAN AND SON, Oldfield Nurseries, Altrincham.

SCOTCH FIR.—I-yr. Seedling, 2-yr. Transplanted, 10s. 6d. per 1000; 9 to 15 inches, extra transplanted, 15s. per 1000; 12 to 18 inches, ditto, ditto, 17s. 6d. per 1000; 15 to 2 inches, ditto, ditto, 17s. 6d. per 1000; 15 to 2 inches, ditto, ditto, 17s. 6d. per 1000; 15 to 2 inches, ditto, ditto, 25s. per 1000; 2 to 3 feet, ditto, ditto, 30s. per 1000.

COMMON LAURELS.—9 to 12 inches, Transplanted, 105. 6d. per 100, 84s. per 1000; 12 to 18 inches, 16s. per 100, 126s. per 1000; 1½ to 2 feet, 21s. per 100, 168s, per 1000. CATALOGUE of Forest and Ornamental Trees and Shrubs

sent on appli-JAS. BACKHOUSE AND SON, York.

The Planting Season.

AND A. MORRISON, The Nurseries,
Elipin, beg to draw the attention of intending Plantes to their extensive and well-grown stock of SCOTCH FIR and LARCH, of all sizes, from 1-ry, seedlings to 2 to 13 feet, all the produce of seed collected for them in the Forests in the North SCOULAM, and Liken out of cone on kins within their Nursery of Scouland, and Liken out of cone on kins within their Nursery of True Native."

True Native."

T. AND A. M. also grow largely PINUS AUSTRIACA, LARICIO and MONTANA, NORWAY SPRUCE, ASH, LELH (Wych, OAK, SYCAMORE, and other FOREST, and the for Hedges, Underwood, and Game cover.

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E W R A S P B E R R Y, Testimenial from Mr. THOMAS LAXTON, Bedford:—
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Cancs, 35t. per 100, 6t. per dozen.
Cancs, 35t. per 100, 6t. per dozen.
Early orders respectfully solicited.
Ebmund PHILIP DIXON, The Yorkshire Seed Establishment, Hull.

TRUE TREES (74 STEACHES).—

RULT TREES (74 STEACHES).

NECTARINES, APRICOTS, &c., as Stundards, Dwarfs, Pyramids, Bushes, Cordon and Trained Trees in great variety. WINES, excellent canes, s. of. to row, for. ORCHARD WINES, excellent canes, s. of. to row, for. ORCHARD WINES, excellent canes, s. of. to row, for. ORCHARD Descriptive LIST, containing a sketch of the various forms of Descriptive LIST, containing a sketch of the various forms of Prees, with divections for Cultivation, Soil, Drainage, Manure, Pruning, Lifting, Cropping, Treatment under Glass; also information as to Swonyans, Quality, Size, Form, Skin, Colour, Flesh, Flavour, Use, Growth, Duration, Season, Price, &c., free by post.

RICHARD Sull'IT AND CO., Worcester.

MItchell's 80 Co, Worcester,

Mitchell's 80 Goseberry.

M. MITCHELL having obtained a Stock
of this extraordinary variety of GOOSEBERRY, is
now prepared to offer, for the first time, Trees and prepared
cuttings for present planting. To all Growers, Salesmen, and
Buyers of Fruit attending Covent Garden Market, this fine
arriety is too well known to need description, but to others it
may be described as the largest, greatest cropper, and earliest
for picking when green. 1-yr. Trees, 25; per 100; Cuttings,
£5 per 10000 Men green. 1-yr. Trees, 25; per 100; Cuttings,

ILLARNEY FERNS for Sale. — Two healtby well-grown Plaots, between 5 and 6 feet in circumference. Apply to A McKENZIE, Clarisford, Killaloe, Co. Clare.

FOR SALE, about 3 coombs CRESS, 56 lb. and half a peck of Dutch Red CABBAGE SEED; also SEED; also SEED; also sequents of Laxton's Earliest of All PEA. Any reasonable offer accepted.

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A GUINEA COLLECTION of ROSES.— Forty splendid bushy Dwarf H.P.'s and ten Teas, all fine varieties, seed on receipt of Post-office Order. EDWIN HILLIER, Winchester.

100-Dwarf Rosss-100

IN ONE HUNDRED FINEST NAMED
VARIETIES, Carriage Paid to Edinburgh, Newcastle,
Hull, or London, for /z cash.
It is a well-known fact that Roses taken from a cold climate
such as we eejly in Aberdeen, give greater satisfaction than if
taken from a Southern warm climate. Our Roses always give

satisfaction.

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CUTBUSH'S MILLTRACK MUSHROOM SPAWN,—Once used no other will be willingly taken.

Price 6r. per bushel.
WM. CUTBUSH AND (Limited), Highgate, London, N.

A USTRIAN PINE, extra transplanted, 15

to 2 feet, 12s. 6d. per 100. well furnished, 2 to 23/2 feet, 16s. per 100; 21/2 to 33/2

"", "Well turnished, 2 to 2/2 teet, 105, per 100; 1/2/10/3/2

CORSIGES 1916, ""

121, 6/d, per 100.

"", four times transplanted, 1/½ to 2 feet, 1/61, per 100; 2 to 3 feet, 400, per 100.

LAUREL Collonic, very bushy, 1 to 1/½ foot, 12x, per 100; 1/½ to 2 feet, 40x, per 100; 2 to 3 feet, 25x, per 100.

RODGER, MCCLELLAND AND CO., Nurserymen, Newry.

SEEDS.—Vegetable, Flower, and Farm, carefully selected, reliable, and moderate in price. Illustrated LIST, containing copious interesting and useful information,

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RICHARD SMITH AND CO., Seed Merchants and
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WANTED, OFFERS for CYCAS
REVOLUTA, stem 2 feet; 100 strong healthy bulbs
EUCHARIS AMAZONICA: 100 each Garbaldi, Keed
Seedling, and British Queen forcing STRAWBERRY
PLANTS, in 32-9045.
WISE AND RIDES, Covent Garden, W.C.

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CATALOGUE, of fifty pages, containing full information as plintation. A capital Collection for Rocks, Stumps, and Borders, from 95t, per 100, or 45, per dozen. Most of the plans being in pots may be despatched at any time, or by Parcels Post when fit. Most of the plant being in pots may be despatched at any time, or by Parcels Post when fit. Most of the planta is post of the page 100.

Merchants, Worcester.

BLUSH ... 75 RODGER, McCLELLAND AND CO., Nurserymen, Newry.

A SPARAGUS. — In consequence of ground being sold for building, and must be cleared, we have to offer several acres of very fine beds, strong plants, sz. per 100, or 420. per 1000. Reference required from unknowe correspondents.—A. HART AND SONS, 150, High Street, Guildford.

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TO Gardeners and Stewards.

ERTFORDSHIRE

SEED

ESTAB

LISHMENT street in the bown harvest of 1823, offers sphendid MARROW EAS (new Seed), for successional corpping, equal to the most fastidious requirements, as follows, viz.;—William the First, Kentish Invicta, Laxton's Alphaa, Viz.;—William the First, Kentish Invicta, Laxton's Alphaa, Viz.;—William the First, Kentish Invicta, Laxton's Alphaa, Viz.;—To Hallam the First, Kentish Invicta, Laxton's Alphaa, Viz.;—To Hallam the First, Kentish Erner, Dr. McLean, Laxton's Supreme, Laxton's Fillbasket, Frizetaker, Ne Plus Ultra, voitable Farefetton, Champion of England, Ertish Queen, Castallam Control of State of Castallam Control of Castallam Castall

ROLLISSON'S TELEGRAPH (true), JAMES STYCHE, The Nurseries, Hedon, Hull.

Surplus Nursery Stock.

EDMUND PHILIP DIXON will be pleased to send Special Offer for any of the following NUR-SERY STOCK, which are all remarkably healthy, and of

SERY STUCK, which are all remarkably healthy, and or LARCH, 2½ to 3 feet; 3 to 4 feet; 4 to 5 feet; 5 to 6 feet. ASH, 4 to 5 feet, 5 to 6 feet. ASH, 4 to 5 feet; 5 to 6 feet. LAUCHBA JAFONICA, 1½ to 2 feet, bushy.

ELDER, Goldeo, 4½ to 3 feet. BROUM, 29, transplant as 5 feet. BROUM, 29, transplant as 5 feet. BROUM, 29, transplant as 6 feet. PLATAND ONLY OF ASPARAGUS, Glunt, 2 and 3-yr. Connover's Colossia, 2 and 3-yr. SOLANUM CAPSICASTRUM, in Berry. SULANUM CAPSICASTRUM, in Berry. SULANUM CAPSICASTRUM, in Berry. SULANUM CAPSICASTRUM, in Berry. SULANUM CAPSICASTRUM, in Berry. Hull, January, 1824.

Seed Potatos.—Seed Potatos.

JOHN PERKINS AND SON beg to offer the fallowing select stock of SEED POTATOS.—
VEITCH'S ASHLEAF, 7s. per cwt., £5 ros. per ton. SCHOOLMASTER, 7s. per cwt., £5 ros. per ton. SYHOLMASTER, 7s. per cwt., £5 ros. per con. MYATT'S IMPROVED ASHLEAF, 6s. per cwt., £5 per ton. Sy, Markes Square, Northampton.

VEGETABLE and FLOWER SEEDS

Orders of £1 er upwards sent carriage paid.

Price LIST's sent on application.

Special sent on application.

Special sent on application in the sent on application in the sent on application.

BACKHOUSE'S WINTER WHITE PROTECTING BROCCOLI.—For tweety years this has proved one of the best of all varieties for winter or earliest spring use. Per packet, xx, per cunce, xx.6.

EXTRA FINE DWARF GREEN CURLED BORECOLE.—Examples of this were sent to the Editor of the 'fournal of Horticulture, in the spring of 1883, after passing through a position of the sent proported upon them :—"I'll he heads are very compact, and to finely curied as to resemble Parsley. The variety is similar to that for which a First-class Certificate was granted last week at South Kensington, as it is no doubt a very distinct and excellent form of the dwarf curied Kale." Per ouoce, xx. Amongst the flower seeds will be found a large assortment of choice.

ALPINE and HERBACEOUS PLANTS, saved from our well-known collection.

JAS. BACKHOUSE AND SON, York.

JAS. BACKHOUSE AND SON, York.

SPECIAL OFFER of FRUIT TREES, at reduced prices to clear the ground. All strong and well grown.

APPLES, 3 and 4-yr., branched, 5 to 7 feet, 9t. per dozen, 50s. to 6 ox, 5 to 6 feet stems, 12s. per dozen, 70s. to 8 feet consists of principally Wellington, Lord Sufficient Cox's Orange Pippin, Blenchem Orange, PEARS, 3 and 4-yr., branched, of sorts, 9s per dozen, 60s. per 150s.

,, Standards, 4-yr., 5 to 6 feet steme, 12s. per dozen, 70s. to

"Staodards, 4-yr., 5 to 6 feet stems, 12t, per dozeo, 70s. to 80t, per 100.
Pinncipally Williams' Bon Chrétien, Beurré Diel,
Duchesse d'Angouldme, &c.
CHERRES, Staodards, 6 feet stems, in about twenty good
APNICTOIS, MOORPARK, &c. Dwarftrained, for walls,
PEACH, &c. M. M. B. Per doze, Dwarftrained, for walls,
Standards, S. Dwarftrained, of leading sorts, for walls, 3t. each, 3ot, per dozeo.
APPLES, PEARS, PLUMS, and CHERRIES, Dwarftrained, in all the best dessert and culturary kinds, 2s. each, 20t, per dozeo.

in all the est dessert and culmary kinds, ar. each, 20s.
A varief other kieds of FRUIT TREES and a large general NURSERY STOCK to effer cheap.
Write LISTS post-free on application.
WALTER CHAS, SLOCOCK, Goldworth Old Nursery, Wicking, Surey.

POTATO and ARTICHOKE SEED.

BEAUTY OF HEBRON, free on acy Station in Lordon £6 per ton MAGNUM BONUM, ditto ... £4 " CHAMPION £3 10s.,, ARTICHOKE (JERUSALEM)... 5s. per cwt.

> Apply - R. BATH, WARSUNT FARM, CRAYFORD.

TO RESTONE TREES, to be sold cheap:—

500,000 LARCH

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TO OFFER, Standard APPLES, PEARS, and FLUMS; Jainden APPLES, PEARS, and FLUMS; DAMSONS, PEACHES, and NECTARINES. Trained APRICOTS, PEACHES, NECTARINES, PEARS, and Morello CHERRIES. Dewarf and Half-standard ACER NEGUNDO YAR.
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4d. per bushel; 100 for 25s.; truck (loose, about 2 tons),
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BROWN FIBROUS PEAT, bet quality for Orchids,
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Quality the Best in the Market.

PEAT, best hrows fibrous. - 4s. 6d, per sack; 5 sacks for 20s.
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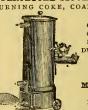


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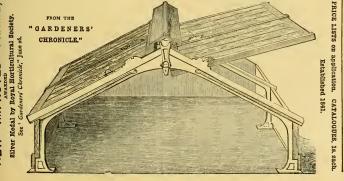
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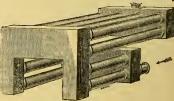
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Cao be heightened or lowered, or made to suit any requirements. They stand complete in themselves, and require no building work, being wholly water-jackted and thus entirely free from risk by fire. They can be had all sizes, to heat from, say, a few feet up to 8000 feet of 4-inch pipe each: are now in all parts of the world, and are univalled as being the best, most powerful, and most economical Het-water Bolders in use.

Specimen Extracts from Testimonials:

From W. Morgan Robbins, Eag. Architect, Ilfracombe,
Softember 9, 1836.

"I am delighted with your Boiler; it answers admirably, and
the directors are satisfied that it is one of the best £25 worth

ever put in the hotel."

From Q. C. CHALMBIS, Gardens of James Mudie, Esq., From Q. C. CHALMBIS, Gardens of James Mudie, Esq., "Your Boiler beats all my expectations; at 1830.

"Your Boiler beats all my expectations; at 1830.

From ISAAC HOLDEN, Esq., Oakworth House, Keighley, Vorkabley, 1831.

From Your Boiler beats nearly Soc feet of sinch pipe.)

From Wal. Frank, Kipfer Gardens, Dunning, Perthshre, December 6, 1832.

"I consider your Boiler most efficient; as for economy, it is the acme of perfection."

From Rev. James Cardwell, Military Academy, Highlands, Fersey, December 31, 1881.

"Nothing could be better than the Boiler you sent me; it burns all sorts of rubbish, and gives an excellent heat."

From ARTHUR BOOTY, E.Q., Rese Villa Nurseries, High Harvogale, March 22, 1832.

'Your Boiler has exceeded all my expectations; it will pay for itself as a fuel saver in a short time. It beats 2000 feet of 4-inch pipe."

Keith's Treatise on "Heating by Artificial Means," post-free for twelve stamps.

HIGHEST

AWARDS

WHEREVER

EXHIBITED.

ESTABLISHED 1823.

for twelve stamps.

KEITH'S

PATENT MINERAL OIL GAS WORKS, are unrivalled for use in the Country or in the Colonies.

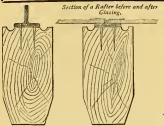
PATENT SECTIONAL HOT-WATER COLL TABLES, have three times the Radating Surface of any other form of Pipe Coil.

PATENT OFEN FIRE, Ornamental HOT-WATER APPRAEATUS, combining Warmth, Cheerfulness, Ventilation and Perfect S JAMES KEITH, GAS, HYDRAULIC and HEATING ENGINEER, LONDON, EDINBURGH, and ARBROATH. 57, Holborn Vladuct, London, E.C. 120, George St., Edinburgh.



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GARDENERS' CHRONICLE.

Established 1841.

No. 527.—Vol. XXI. (SERIES.) CONTENTS.

SATURDAY, FEBRUARY 2, 1884.

Registered at the General Price 5d.
Post-office as a Newspaper. (Post-FREE, 52d.

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ILLUSTRATIONS.

British epiphytal Orchids
Caryopteris Mastachanthus
Grains of Sand and Spores of Potato Fungus
Saxifraga Burseriana var. major
Usnea, growth of, on trees in Florida.
Yriesia heliconioides

NOTICE to SUBSCRIBERS and OTHERS. Post-office Orders and Postal Orders should now be made payable at

DRURY LANE.

ROYAL HORTICULTURAL SOCIETY,

TOTAL MONTICULTURAL SOCIETY,

South Recoisgton, S.W.

The ANNUAL GENERAL MEETING of the ROYAL
HORTICULTURAL SOCIETY will be held in the Conservatory, at South Kensington, on TUESDAY, February 22, to
the Effection of Members of Council, Officers, and Additors, and
to confirm alteration of Bys-law No, 66.

N.B.—At this Meeting Candidates for Fellowship will be
elected.

N E W C A S T L E - O N - T Y N E

FLOWER SHOWS,

SPRING-April 33 and 24,

SUMMER-July 23, 24, 3 and 25

FOR SCHEDULE AS,

Cross House Chambers, Newcastle-on-Tyne.

GRAND FLORAL FETE, YORK, JUNE 18, 19, and 20, 1884. Twenty-sixth year. Price and the standard of the standard

WANTED, the Address of JOHN WAKE-FIELD, formerly Gardener at Bladon House, Burton-on-Trent. Any person sending the address shall be rewarded. Address MANACER, Albert Hall, Worksop, Notts.

THE EXECUTORS of the late BENJAMIN
MALLER beg to announce, that the BUSINESS
WILL BE CARRIED ON AS USUAL All Orders
entrusted to them will be punctually and carefully executed.
Butth 3sh Lane Nurseries, Lee, S.E.

Seed Catalogue, 1884.

HARRISON AND SONS' Seed LIST is now ready, and will be sent free to all applicants.

Royal Midland Seed Warehouse, Leicester.

To Osler Growers, Basket Makers, and Nurserymen.

PRADFORD AND SONS, Yeovil, Somerset,
now Grow and Cut yearly too Acres and upwards of
OSIER EEDS, and will quote proces to the Trade, according
to quantity required. Samples and prices of Osier "Sets" on
application.

A NEMONE JAPONICA ALBA
and ROSEA.—30,000 very strong Plants for planting or
potting. 16z, per 100, or 2z, 6d, per dozen. Special quotations
to the Irade.
HY. GODFREY, Nurseryman, Stourbridge.

L APAGERIA ALBA, LAPAGERIA RUBRAS LIPER BA, Det doren.
The above are strong crowned by the Laboratory of the Company of the Comp

GRAPE VINES.—A fine stock in leading varieties, Planting and Fruiting Canes. Apply to FRANCIS R. KINGHORN, Nurseryman, Richmond.

BORDER CARNATION,
First-class Certificate was awarded at Kensington. A beautiful rose-coloured Self, very highly-scented, of great size, very full, and of perfect shape; does not burst the earlyx, a very free bloomer and vigorous grower, and perfectly hardy. See Gardener Chronick, August 4, 1883, page 146. Price 4s, 5s, and cr. a pair. Cash with order.

If G. SMYTH, 21, Goldsmith Street, Drury Lane, W.C.

HUGH LOW AND CO. offer ARECA RUBRA, 1 foot: PIVCHOSPERMA ALEXAN. DR.E. 9 to 12 inches, 4 st. 252, per 100. GLAZIOVA INSIGNIS, 6 inches, 50s. per 100. Established in small pots. Clapton Nursery, London, 1

KELWAY AND SON'S CATALOGUE of GLADIOLI, describing all the varieties worth growing, and at prices as low as those of any other house, will be forwarded on application.

Langport, Somerset.

PLANTS for GREENHOUSES, &c.—The best kinds of Camellia, Azalea, Bouvardia, Croton, Epiphyllum, Gardenia, Ixora, Primula, Rhododedoron, Ericapacris, Climbers, Perns, &c., fully described in LIST, free to Epacris, Climbers, Ferus, Co., all applicants.
RICHARD SMITH AND CO., Worcester.

Orange Trees.

TOR SALE.—Two splendid SPECIMEN
TREES, from 10 to 1, feet high. In good bearing. For full particulars and price, apply to
Mr. C. B. WAMEZ, Woodlands, Hoddesden, Herts.

ARCH, 1,500,000 well-grown, to offer, as below:-1 to 26et, 10s.; 1½ to 9½ feet, 10s.; 2 to 3 feet, 13s.; 4 to 3 feet, 2 s.; 5 to 3 feet, 5 feet, 2 s.; Per 1000. All well rooted. Apply, FRANCIS BELL, Nurseries, Easingwold.

Tea Roses—Tea Roses.
THE LIVERPOOL HORTICULTURAL
COMPANY (JOHN COWAN), Limited, have this year a
splendid stock of Tea and other Roses in pots. Prices and full particulars on application to The MANAGER, The Vineyard, Garston, Liverpool.

POSES, Standard, best kinds, good stems
and heads, £3 per 100. White CLOVE CARNATION,
"The Bride," 205. per 100. THUA GIGANTEA, 3 to 4 feet,
505. per 100. THUA GIGANTEA, 3 to 4 feet,
505. per 100. ThuA CIGANTEA, 3 to 4 feet,
505. per 100. ThuA CIGANTEA, 3 to 4 feet,
505. per 100. ThuA CIGANTEA, 3 to 4 feet,
505. per 100. ThuA CIGANTEA, 3 to 4 feet,
505. per 100. ThuACKSON, Blackclown, Kidderminster.

Large Growers of Fruit and Cut Bloom are PEQUESTED TO COMMUNICATE with the undermentioned, who will be happy to SUPPLY BASKETS, &c., with full Directions for Facking. Wils AND RIDES, Fruit and Flower Salesmen, Covent Gardee, W.G.

SQUELCH AND BARNHAM, Long Market, Covent Garden, London, W.C., Invite consignments of GRAPES, TOMATOS, CUC BERS, STRAWBERRIES, and CHOICE FLOWERS.

SQUELCH AND BARNHAM, giving personal attention to all consignments, they are thus enabled to obtain the HIGHEST MARKET PRICE.

S Q U E L C H AND B A R N H A M.
ACCOUNT SALES sent daily, and
CHEQUES forwarded weekly.
BANKERS and TRADE REFERENCES.
BASKETS and LABELS supplied.

To Nurserymen, Private Growers, &c.
CATTANEO, COMMISSION SALESMAN,
4.4. HARStreet, and New Flower Market, Covent Garden,
W.C. is open to RECEIVE CONSIGNMENTS of CHOICE
CUT FLOWERS in any quantities. Terms on application.

WANTED, large FICUS ELASTICA
Plants, suitable for cutting up for Propagating purposes.
Cush or liberal EXCHANGE in PLANTS. Send particulars to
JOHN STANDISH AND CO., Royal Nurseries, Ascot.

WANTED, PALMS. — Large and small Decorative Plants. State lowest cash prices, Floral Gallery, South Kensington Station, Londoo, S.W.

WANTED, a quantity of good sound ACORNS, fit for sowing. Apply, stating price and quantity, to
LITTLE AND FALLANTYNE, Seed Merchants and
Nurserymen, Carlisle.

Porter's Excelsior Potatos.

WANTED TO PURCHASE, a few Tons of the above. Send price and full particulars to C. FIDLER, Potato Grower, Reading.

S U T T O N A N D S O N S can supply their carefully selected stocks of SUTTON'S INPROVED EARLY CHAMPION, SUTTON'S RINGLEADER, EARLY SUNRISE, and other excellent sorts, at very moderate prices, particulars of which may be bad on application.

THE QUEEN'S SEEDSMEN, READING.

ILIUM AURATUM.—Good, plump, sound
strong, por and 481, per dozen, extra
canally set and 481, per dozen. All other good LILIES at
canally Mr. WILLIAM BULLS Establishment for New and Rare
Plants, 536, King's Road, Chelsea, London, S.W.

YEW CHRYSANTHEMUM, "LORD ALCESTER," late "PRINCESS IMPERIAL."

Strong cuttings now ready, 1s. 2d. each, post-free, cash ish order.

HENRY FREEMANTLE, Bishops' Hull, Taunton.

TIGHTY THOUSAND CLEMATIS, in of the flowers of which become to inches across, and are of the flowers of which become to inches across, and are of every chade, from pure white to the darkest purple), for climbing and bedding, from 122, to 22, per dozen, strong plants. RICHARD SMITH AND CO., Nurserymen and Seed Metchants, Worcester.

Forest and Ornamental Trees and Shrubs.

THE LAWSON SEED AND NURSERY
COMPANY (Limited), Edinburgh, have an immenseStock of the leading kinds of Seedling and Transplanted
FOREST TREES and SHRUBS, &c.—all in healthy condition and prices moderate. Special offers on application.

CREEPERS for Walls, Trellises, &c., in great variety. By planting what is suitable an unsightly object may easily be made beautiful. Descriptive LIST and advice on application.

RICHARTI SMITH AND CO., Nurserymen and Seed Merchant, Worcester.

RUIT TREES and KOSES.—A large and select stock is now offered for sale. The Illustrated and Descriptive CATALOGUE of Fruits post-free for three-penc, the Descriptive CATALOGUE of Roses post-free. THOMAS RIVERS AND SON, The Nurseries, Sawbridge-THOMAS RIVERS AND SON, The Nurseries, Sawbridge-

Daffodil, Daffodilly, Daffodowndillies.

A DESCRIPTIVE CATALOGUE of more than 200 sorts of DAFFODILS free on application.

BARR AND SON, 12, King Street, Covent Garden, W.C.

Reading Hero Potatos

B. LAIRD AND SONS (Successors to

Downie & Laird) have pleasure in offering above, free
on raits at Edinburgh, at £6 tof, per ton, 72, per cwt,

R. B. LAIRD AND SONS, Nurserymen and Seedsmen, 17,
Frederick Street; and Royal Wioter Garden, Haymarket,
Edinburgh.

Trade Seed List
Trade on application.
Sleaford, January, 1834.

FOR SALE, by Private Treaty.—Being about to give up growing PINES, I have 120 Thoresby Queens forward in fruit, and 80 Succession, to dispose of; they are clean and in good condition.
Apply, A. WEEB, Keiham Hall Gardens, Newark-on-Treot.

THE LIVERPOOL HORTICULTURAL
COMPANY (Jone Coave), Limited, have this season, as
usual, a splendid stock of VINES, suitable for Fraiting in Pote
and Planting Vineries. Also a fine stock of Maréchal Niel,
Gloire de Dijon, and other TEA ROSES.
Descriptive Priced LIST on application.
The Vineyard, Garston, Liverpool.

A SPARAGUS.—Early Purple Argenteuil, the earliest and finest in Covent Garden. Seed from enormous heads, 15. 6d, per packet. Plants, same strain, 10st. per 10c, 12AXTON, Bedford.

A SPARAGUS PLANTS.—Strong Forcing, 10s, 6d, per 10s. Apply to J. E. DIXON, Seedsman, Gainsborough.

A SPARAGUS for Forcing.—Strong crowns, which will produce a quantity of capital heads, 2s. per dozen, 2s. 6d, per too. SEAKALE, famous forcing roots, 2s. 6d, per dozen, 16s. per 100. RICHARD SMITH AND CO., Worcester.

TRADE OFFER.—Strong SEAKALE, 455.
PLUMS, 555, per 100. Fatleigh DAMSONS, 455. per 100. Termis, cash in one month.
WILL TAYLER, Osborn Nursery, Hampton, Middlesex.

PEADING HERO POTATOS.—St. eral tons of Scotch grown Reading Hero to offer, on r. 's in Scotland. Full particulars upon application to C. FIPDLER, Potato Grower, &c., Reading.

SALES BY AUCTION.

Rugby.

Expiration of Lease, the Land having to be given up March 25

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Fremises, The Nursery, Rugby, on TUESDAY, February 5, at 12 o'Clock The remainder of the WELL-GROWN NURSERY STOCK, comprising ...
Specimen CONIFER.E., nearly all transplanted 1882. ORNAMENTAL TREES.
10,000 1971. MARKITI STOCKS and cultivated BRIERS, 10,000 1971. MARKITI STOCKS and cultivated BRIERS,

ORNAMENTAL TREES.
10,000 : 79: MANETTI STOCKS and cultivated BRIERS, fit for immediate working.
2000 GOOSEBERRAIN and CURRANTS.
2000 FRUIT TREES, in variety, and other Stock; together with the remaining GLASS ERRCTIONS and FIITINGS, including large CONSERVATORY, 60 feet by 20 feet; 1500 feet 4-inch Howater PIPING, Saddle BOLLER, HORT-CULTURAL REQUISITES, &c.
May now be viewed. Catalogues may be had on the Premises, and of the Auctioceers and Valuers, 67 and 68, Cheapside, and 8, New Enod Street, E.C.

8, New Broad Street, E.C.

Wednesday Next.
HIGH-CLASS POULTRY and PIGEONS.

MESSRS. PROTHEROE AND MORRIS

Rooms, 67 and 68, Chespied, E.C., on WEDNESDAY

NEXT, February 6, at half-past 1s o'Clock precisely, about
300 Lats of High-class POULTRY and PIGEONS, including Birds from some of the principal and most successful Breeders and Exhibitors in the Kingdom.

Also a CHRISTIES PATENT INCUMATOR.
On view morning of Sale. Contained at the Sale Rooms,

Conview morning of Sale. Contained at the Sale Rooms,

N.B., The NEXT SALE will take place on WEDNESDAY,
February 13, and ENTRIES should be made NOT LATER

than MONDAY, the 4th inst.

Thursday Next.
BULBS and ROSES.
PROTHEROE AND MORRIS MESSRS. MI ESSAS, INOTITION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on THURSDAY NEXT, at half-past zo 'clock precisely, a consignment of ZEPHYRANTHES and PANCRATIUMS, from the West

ZEPHYRANTHES and PANCKATIOUS, from the west fadies. THERROUS ROOTED REGONIAS. 110,000 BERLIN CROWNS LILV of the VALLEY, in lots of 1000 each. 2000 of the new and beautiful ORNITHOGALUM.

GRACILIS.

150 imported bulbs of the scarce LILIUM PHILIPPINENSE.

200 CLEMATIS COCCINEA.

An assortment of hardy English-grown LILIES and BULES,
together with

1000 Standard and Dwarf ROSES, from an English
autrery, of the best named varieties.

On view morning of Sale. Catalogues had at the Sale
Rooms, or at the Auctineners' Olines, 8, New Broad Street, E.C.

Friday Next.
VANDA SANDERIANA.
CATTLEVA TRIANÆ.
C. MOSSIÆ.
C. GASKELLIANA.

MESSRS. PROTHEROE AND MORRIS are iostructed by Mr. F. Sander to SELL by AUC-TION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY NEXT, at half-past 12 o'Clock precisely, a grand

on FRIDAY NEAT; as unit-post 22 o Good present importation of 3-TRIANÆ, including the most shapely mass ever offered, in flower (opened in case).

A superb lot of VARIDA SANDERIANA, CATTLEYA A A large and fine importation of CATTLEYA MOSSIÆ, and other valuable ORCHIDS.

On view morning of Sale. Catalogues had at the Kooms, or at the Auctioneers' Offices, 8, New Eroad Street, E.C.;

wal the Auctioneers' Offices, 8, New Ernad Steet, E.C.;

Walham Green, S.W.

Expiration of Lease. CLEARANCE SALE.

MESSRS. PROTHEROE AND MORRIS
are instructed by Mr. Whittle to SELL by AUCTION, on the Premises. The Eschol Nursery, Walham Green,
S.W., on TURSDAY, February 10, at 12 o'Clock precisely—
The whole of the well-grown FERS and EVERGREENS,
ORNAMENTAL TREES in variety, large quantities of
LAURELS, AUCUBAS. and HOLLIES, EUONYMUS,
VIRGINIAN CREEPERS, and IVIES, UTENSILS in
TRADE, LOAM and MOULD, POTS, EDGING TILES, &c.
May be viewed. Catalogues had on the Fremises, and of
the Auctioneers and Valuers, 67 and 63, Cheapside, and 8, New
Broad Street, E.C.

Eaton Nurseries, near Norwich. GREAT CLEARANCE SALE. Fourth portion of the beautifully grown NURSERY STOCK, by order of Messrs. Ewing & Co., who are giving up their Business.

Business:

MESSRS. PROTHEROE AND MORRIS

A

acco Standard and Dwart ROJES of the Control of Teas, &c. A large quantity of Deciduous Flowering and Variegated Foliaged SHRUBS, Several thousand FOREST TREES of various sorts and sizes, including a large quantity of WILLOWS, POPLARS, ELMS, LIMES, and Sweet CHESTNUTS, &c. A quantity of choice EVERGREENS, CONTERS, &c. The Lots will be so arranged as to suit both large and small butters.

May be viewed. Catalogues on the Premises, and of the Auctioneers and Yaluers, 67 and 68, Cheapside, and 8, New Broad Street, E.C.

MESSRS. PROTHEROE AND MORRIS at their Central Sale Rooms, 67 and 68. Chapside, E.C., a wonderfu importation of an extraordinary and most beautiful Day of Sale and full particulars will appear in next week's Gardeners Chronicite.

67 and 68, Cheapside. E.C

67 and 68, Cheapside, E. C.

Monday Next.—(Sale No. 6,881)

M.R.

J. C. STEVENS will SELL by
GOVER LIGHT AUTON from Japan, &c.

M.R.

J. C. STEVENS will SELL by
GOVER Carlot, W. C. L. S. Great Rooms, 38, King Street,
12 of Clock precisely:
2002 LILIUM AURATUM, in fine condition, and
300 LILIUM Species from Japan.
Englash-crown LILIES.
ACILIS, PANCRATIUMS, CVCLOBOTHRAS, &c., from Mexico.
2002 BEGONIAS from France.
2002 BEGONIAS from France.
2002 BEGONIAS from France.
2002 LILY of the VALLEY from Germany.
2003 GIANT ASPARAGUS PLANTS, Hardy ORCHIDS,
CLADIGLI, &c.

On view morning of Sale, and Catalogues had.

Wednesday Next.—(Sale No. 6,834)

Wednesday Next.—(Sale No. 6583.) HARDY PLANTS and BULBS.

HARDY PLANTS and BULBS.

M.R. J. C. STEVENS will SELL by AUCGraden, W.C., on WEDNES, S. King Street, Covent fadden, W.C., on WEDNES, W.EXT, February 6, at 1000 Stardard, Dwarf, and Climbirg ROSES.

CLIMBING PLANTS, EVERGREENS.
60 face CVCLAMENS in flower.

HERBACEOUS PLANTS, GLADIOLI, LILIUMS, TUBEROSES, and other BULBS, &COA view morning of Sale, and Catalogues had.

On view morning of Sale, and Catalogues And.

Wednesday Next.—(Sale No. 6;84)

ODONTOGLOSSUM ALENANDRÆ,
The Celebrated Pacho Varieties.

ON CIDIUM JONESIANUM,
The Entire Stock.

M.R. J. C. STEVENS has received instructions from Messrs. F. Horsman & Co. to SELL by AUCTION, at his Great Rooms, 28. King Street, Counter the Sale of the Flowering Orchids—
The whole of a splendic consignment of ODONTOGLOSSUM ALEXANDRÆ, from the well-known district of Pacific North Studium Control of Co

Wednesday Next.—(Sale No. 65%4.)

SPECIAL SALE of ORCHIDS in FLOWER and BUD.

M.R. J. C. STEVENS will SELL by AUCGarden, W.C., on WEDNESDAY NEXT, February 6, at
half-past 12 o'Clock precisely—
A fine COLLECTION of ORCHIDS in flower and bud,

A fine COLLECTION of ORCHIDS in flower and bud, comprising COLOSSUM ALEXNDR.E in quantity, ichaling some fine specimens and grand varieties; O PESCATOREI, O. WILCKEANUM, O. DODORATUM STRATUM. CATILEYA TRIANÆ (many plants), C. MENDELII; PHALENDRSIS, EUUCORRENDOA, C. MENDELII; PHALENDRSIS, EUUCORRENDOA, DESCRIPTION, C. STRATERI, S.C. PERIPEDIUMS, MASDEVALLIAS, COPLO-OYNE CRISTATA, LVCASTE SKINNERI, S.C. Also 12 plants of EUCHARIS SANDERII, and a large quantity of rare specimens, not included in Catalogue, which will be brought up in flower on morning of Sale.

On view morning of sale, and Catalogues had.

Thursday Next.—(Sale No. 6585)
CYPRIPEDIUM DRURVI.
M.R. J. C. STEVENS has received instructions from Mr. F. Sander to SELL by AUCI'IDN, at his Great Rooms, 38. King Street, Covent Gardee, WC. OTHURSDAY NEXT, February 7, at half-past 12 o'Clock precisely:—

The sale of the control of the contr

Established Orchids. Established Orchids.

MR. J. C. STEVENS will SELL by
AUCTION at his Great Rooms, 38. King Street,
Covent Garden, W.C., during the THIRD WEEK in
FERRUARY, the COLLECTION of ORCHIDS, formed by
E. H. MOSS, Sen, of Kavessorof, including, E. in quantity
C. TRIANE ATALANTA, C. TRIANE MAGNIFICA, C.
SPECIOSISSIMA LUDDEMANNIANA, C. DOWIANA,
LÆLIA ELEGANS PRASIATA, L. PURPURATA (Smith's
variety), DENDROBIUM JAMESIANUM, D. TORTILE,
D. WARDIANUM, Se.
On view morning of Sale, and Catalogues had

Floral and Horticultural Business.

Floral and Horticultural Business.

Le Tail, of Sheffield, Handsworth, and Rotherham.

TO BE DIS POSED OF, by Private Tender, the whole of the Estate of this Debtor, consisting of about with the property of the property of

TO BE SOLD, an Oldestablished BUSI-NESS, with large Gardens, 12 Hot, Green, and Show Houses, Forcing Pits, &c.; also Show House and Vicery, in a leading throughfare. Held on Leases at moderate reals. Together with the extensive and well assorted Stock, and good Jobbing Connection. Together with the extensive and Jobbing Connection. FENNER AND HILTON, 37, Ship Street, Brighte

LOR SALE, long LEASE, of 1½ Acre walled and beautifully open NURSERY GROUND, three good Hothouses, &c., and nice Cottage: 4½ miles from Covent Address, GARDEN, 52, College Street, Putney, S.W.

TO BE LET, and may be entered upon on Stable, &c., now in the occupation of Mrs. Mitchesoo, and situated in Pelaw Leezes, on the south side of Gilesgate, in the City of Durhan (matter apply to Mr. WILLIAM FORSTER, Surveyor, Lontonderry Offices, Scaham Harbour.

To Nurserymen, Florists, and Greengroeers.

TO LET, with Immediate Possession, an Oldestabilished and Froductic Walde GARDEN, of about 1 acre in extent, with Greenhouses, Vincies, Forcing Houser, Pits and Frames, Gordener's House, and ample Store Houser, and about 1 acre of unwalled Garden adjoining Situated at Bolham, 1½ mile from Tivertoo, Devon, on the Great Western Railway.

Also, if desired, there would he LET with the above a good Greengroee's Business. Apply for particulars to H, J. W. COULSON, Estate Office, Leat Street, Tiverton, Devon.

TO BE LET, on Lease, eight miles from London, on the Great Eastere Railway, and maie Lordon road, about a mle from a station, in an increasing heighbourhord, 33 Acres of MARKET GARDEN LAND, suitable for Fruit Growing, or for the Erection of Glass for Forcing. A capital supply of good water.

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The new Firm have authority to receive on my behalf all Debts due to me to date. Yours obediently, THOMAS HEWITT.

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R. J. C. STEVENS has received instructions from Messrs. F. Horsman & Co. to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, on WEDNESDAY NEXT, February 6, after the sale of the Flowering Orchids, the whole of a splendid consignment of ODDONTOGLOSSUM ALEXANDRÆ from the well-known district of "Pacho." Also the entire stock of the beautiful and new ONCIDIUM On view morning of Sale, and Catalogues had.

AUCTION ROOMS AND OFFICES, 38, KING STREET COVENT GARDEN, LONDON, W.C.

VANDA SANDERIANA. FRIDAY NEXT. CATTLEYA TRIANÆ. CATTLEYA MOSSIÆ. CATTLEYA GASKELLIANA.

M. F. SANDER to SELL by AUCTION THE ROTHEROE AND MORKI'S are instituted by Mr. F. SANDER to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY NEXT, at half-past 12 o'Clock precisely, a grand importation of CATTLEYA TRIANÆ, including the most shapely mass ever offered, in flower (opened in case). A superb lot of VANDA SANDERIANA, CATTLEYA GASKELLIANA, new type; a large and fine importation of CATTLEYA MOSSIÆ, and other valuable ORCHIDS.

On view morning of Sale.

CATALOGUES had at the ROOMS, or at the AUCTIONEERS' OFFICES, 8, NEW BROAD STREET, E.C.



B. S. WILLIAMS' CALCEOLARIA

(Herbaceous, finest mixed), per Packet, 15, 6d, and 25 6d. This time strain has been selected from the dwarfest and most distinct types, and will be found unequalled for size of flowers and brilliancy of colour. Victoria & Paradise Nurseries, Upper Holloway, London, N.

HAMPTON COURT BLACK HAM-above (true), and all other leading sorts, from 75 def. each T JACKSON Ann SON, Nurseryneu, Reyal Kitchen Gardens, Hampton Coutt, and Kingsten-on-I hames.

Gardens, Hampton Court, and Kingston-on-Thames.

CHOICE PALM SEEDS.—Good fresh
Seeds of the exceedingly elegant Palms, Processor rupicola
and Thimus argentes, just to hand. Friess on application to
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ROSES-ROSES-ROSES.- Forty choice V Perpetuals sent to any address on receipt of remittance for ats.; Purchasers' selection from 200 best varieties. List of names on application. Hundreds of testimonials. JAMES WALTERS, Mount Radford Nursery, Exeter, Devon.

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W. H. ROGERS, Red Lodge Nursery,
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RHODODENDRONS, Standard, named, with good heads
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CEDRUS DEODARA, beautiful specimens, 4 to 5 feet, 22. (d, and 31. 6d each.

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Standard and Dwarf ROSES, FRUIT TREES, and every other description of fine NURSERY STOCK, extending over (o acres, detailed CATALOGUES of which may be had on application.

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DAUL AND SON, The "Old" Nurseries, Cheshunt, have the pleasure of offering this, the finest incurved variety obtained for many years. Three First-class criticates, Royal Horicultural Society, National Chrysanthemum Society, and Eastbourne Chrysanthemum Society, actes the value of the Society Chrysanthemum Society, actes the value of the Society Chrysanthemum Society, and I sating, from the fine petals, very long; indispensable to exhibitors.

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PAUL AND SON, The "Old" Nurseries, Cheshunt.

ARGE TREES, for Parks, Villas, Road-sides, &c. See Advertisement in Gardeners' Chronicle, January 19, 1985, 71. Strong transplanted LARCH, 1/2 to 2 feet, 2 to 3 feet, 3 to 4 feet, in large quantities, at unprecedentedly low prices. W. JACKSON AND CO., Nurseries, Bedale.

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BASING PARK HYBRID s. de MELON (New) per pkt. 2 6 MELON (New) per pkt. 2 6
Deep flesh, scarlet, and of fine flavour.
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GENUINE



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JAMES VEITCH & SONS, ROYAL EXOTIC NURSERY, CHELSEA, LONDON, S.W.

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Charming Bride.

First-class Certificate, Read Herticultural Society.
This super hew and silicontary sy of compact, robust, free-flowering habit, and remarkable for the immense substance, perfect form, and pure ivory whiteness of its flowers, which are without any tinge of colour at the base. It is the largest and best pure white variety extant. Per fruchelf, 5s.

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Per packet, 1s. 6d. und 2s. 6d.

GIGANTEUM.

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AMARYLLIS, VEITOH'S HYBRID.
Saved from our magnificent collection grown at our Chelsen
Nursery, from which so many exceedingly beautiful varieties o
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A new perfectly double form of this pretty Everlasting, of a charming rosy hue. Per packet, Is.

ASTER, Dwarf Perfection, Pure White (New).

A new pure white and compact form of the Pæony Perfection type, of dwarf growth, erect habit, and extremely floriferous; flowers of large size, very double, and of good form; excellent for edgings, beds, or pot culture.

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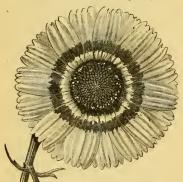
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Carefully hybridised and saved from our celebrated collection.

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CHRYSANTHEMUMS, Single. Remarkably showy and effective plants; now extensively rown for Covent Garden Market. They are perfectly hardy, f rapid growth, very profuse and continuous blooming, and last long time decorative.

Collection of 8 fine varieties, 2s. 6d.

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Saved from the finest varieties, and cannot fail to produce flowers of the finest substance, and of the most charming and diversified shades of colour.

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Magnificent varieties, with flowers of immense size, beautiful colours, and massive substance.

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Saved from a very extensive and varied collection, embracing ill the newest and best hybrid varieties of this most beautiful and highly decorative class of plants.

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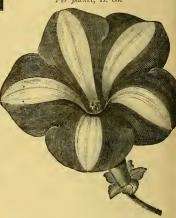
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This new arisety proved in our trials one of the finest and most destrable for pot culture. It is of dwarf, vigorous, pyraolidal, short-branched habit, and throws up numerous strut flower-stalks, terminated by extremely broad spikes of delightully scented bright red flowers.

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A true pure white form of the lovely M. dissitiflora. A most desirable acquisition for early spring gardening. Per packet, 1s. 6d.



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FINEST FRINGED, Red, White, and Mixed.
These are the finest in cultivation, and were awarded a First-class Certificate by the Royal Horticultural Society for superior quality.

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SUNFLOWER, ARGOPHYLLUS.

Of dwarf neat habit, with small silvery-woolly foliage, bearing an abundance of small, single, bright golden-yellow flowers with a black disc; very decorative, and highly useful for cutting. Per packet, 6d.

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A very dwarf pure white variety, of compact habit, perfectly hardy, and comes into bloom very early in spring, its snow-white flowers making a fine display during the spring and summer mooths.

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WALLFLOWER, Veitch's Dwarf Dark Red A new and very superior selection, of rich dark colour, dwarf growth and bushy habit, fine for spring gardening.

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For full particulars of above and other varieties of Choice FLOWER SEEDS see CATALOGUE for 1884, forwarded gratis and post-free on application.

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THE QUEEN'S SEEDSMEN,

Certificate by the Royal Horticultural Society, June 26, 1883. SUTTON'S SUTTON'S SPECIAL LIST OF NOVELTIES SUTTON'S SPECIAL LIST OF NOVELTIES ONION Gratis and Post-free on application. LEVIATHAN NEW AUTUMN Michaelmas WHITE SUTTON'S BROCCOL **SCARLET** White SUTTON INVINCIBLE. 3s. 6d. per packet, post-free. SUTTON'S From the "Gardeners' Chronicle," June 30, 1883. "As usual at this season, the Committee had several seedling Melons brought under their notice, but only one came up to the rethis a First-least Centificate was awarded. It was exhibited by Mr, Goldsmith, and is medium sized, round, prettly netted, sender Seshed, and of excellent flavour." 0 AT NEW 20 SUTTON'S SPECIAL LIST OF NOVELTIES OF NOVELTIES, WHITE E ≪ z SUTTON'S SPECIAL LIST Gratis and Post-free on Gratis and Post-free on "White Gem." S'NOLLO WORDSLEY, STOURBRIDGE



THE

Gardeners' Chronicle.

SATURDAY, FEBRUARY 2, 1884.

PLANTING.

I N such exceptional seasons as that we are now passing through, with the mean temperature so far above the average, and with an absence of the autumn frosts that generally exercise so beneficial a check on growth, those who have planting to do not unusually congratulate themselves on the chance they have of getting on with the work, keeping on continuously, even with the removal of evergreens, as if there were a certainty, or even a probability, of such weather enduring throughout. Yet it is well to point to the risky character of such proceedings, or, rather, to the failures which the planters thus court, even when the plants they deal with are in suitable condition for moving. There is an old saying that "Winter is never lost," and it almost invariably happens that when we get a continuance of unusually mild weather at the latter end of the old year and beginning of the new, we have a cold, cutting, unseasonable spring. March, above all months, is the planter's dread, and when it comes so as to deserve its proverbial character, with dry, biting easterly winds and bright sunny days, its slaughtering effects are partially seen at once in the drooping, shrivelled leaves of such things as Hollies, Portugal and other Laurels, Laurustinus, Arbutus, and others of like nature; but with the coniferous and taxaceous plants the destruction is not so apparent until later on in

The temptation offered by fine open weather in winter to get on with and finish such work in place of letting it hang on hand, is often so strong that it is acted on, instead of adopting the more reasonable course of deferring, until well on in the spring, the planting of such evergreens as could not be moved early enough in autumn to ensure their rooting freely. The loss of evergreens that die outright, through unseasonable removal, is by no means the whole of the mischief, many that do not absolutely succumb are years before they take to growing freely, getting into a stunted state which they do not readily come out of. The cause of such mistaken work is often traceable to a want of forethought in beginning early enough in the latter end of summer. It frequently happens that those who have new work, or alterations which entail a large amount of labour, do not make their minds up soon enough, often only beginning when they ought to have finished, and they are afterwards impatient of any delay-a course that is frequently costly in its result.

Where work of considerable extent has to be done, entailing the removal of evergreen shrubs, there is nothing like doing whatever draining is necessary, with the trenching and other preparation in the summer; then the planting can be carried out during the later part of August, and up to the third week in October, which is by far the best and safest time for moving evergreen shrubs, not only from the little loss that follows planting during this period, but in the saving of labour in the watering that is unavoidable after spring planting. When planting of this kind cannot be completed within the

THE QUEEN'S SEEDSMEN, READING.

time above-named, it is meeting failure more than half way to do it before spring, at which time the period when such work is admissible is in the most favourable seasons short. In such springs as that of last year, when we had piercing March weather up to the middle of May, no great amount of such work can be got through satisfactorily.

As regards deciduous trees and shrubs, the old saying that in planting before Christmas they grow of their own accord, whereas when moved afterwards you have to make them grow, is expressive and correct. The difference in the result of planting in the periods named is not so noticeable in the proportion of those that die after the latter time of removal, as in those that make much less progress in the first and second summer afterwards. This is most apparent in the case of trees that have got above the ordinary planting size, and are not in the best condition for moving through having stood too long without being transplanted. In the case of such, if fairly taken up, properly planted, and well staked as soon as the leaves have fallen in autumn, they will often do as well as others in better condition for moving that are planted late in winter.

The gist of what has been said will be seen to point to the mistake of being lured to planting evergreens too late after the right season in autumn is past and too soon in spring before there is a certainty of the roots beginning to act immediately the plants are put in, and to the equal importance of getting on without delay in completing the planting of all kinds of deciduous trees and shrubs, which in this exceptional season will push their buds earlier than usual. During the past autumn root-action has been prolonged later than ordinary: a quantity of Hollies and other evergreens we were obliged to take up in the last two or three days of October were heeled in, and they are now as full of young white roots, made since they were taken up as would usually be found present with plants moved a month earlier. The cause of this is, no doubt, the uninterrupted mild weather, further influenced by the more than usual amount of warmth still present in the soil through the absence of snow and the unusually light rainfall.



L.ELIA ELEGANS PICTA, n. var.*

I HAD this nearly a quarter of a century ago from Mr. S. Low, and now it is at hand from Mr. Harvey, 12, Riversdale Road, Aigburth, Liverpool. It bas light 12, Riversdale Road, Algourth, Liverpool. It has light lose sepals and petals, with greyish zones, and numerous small spots of darker purple. The fine lip has rather sharp side lacinize, nearly equal to the midlacinize, and a cuneate dilatate emarginate body. This and the tips of the side lacinize and the central area of the disc are fine purple, the remaining part, major part, of side laciniæ fine yellow. It is very good. H. G. Rehb. f.

Cypripedium Leeanum, n. hybr.

Messrs, Veitch have surprised the orchidist world with the flowers of this fine Sedenian mule between new Spicerianum and old insigne var. Maulei. upper sepal, the best of the flower, is very broad, expanded, nearly flat, retuse, not replicate at the borders, white, with two central batches of mauve spots, and smaller, broken narrow lines of mauve on the low green base. The lateral sepals have an oblong, acute, whitish body, shorter than the lip. The tepals are ligulate, blunt, acute, very wavy, dark brown, with two even darker longitudinal lines, and a light yellowish border. The lip's basilar part is light ochre with numerous sepia lines. The anterior part is of good cinnamon with a honey coloured narrow margin, and very short angles. Stamioode rhom-boid, but emarginate at superior base, light ochre with an orange knob in front. Ovary nearly mauve-purple. Stamioode rhomPeduncle brown. Bract much shorter than ovary, green, with a few purple lines. The plant being quite young we may expect its improvement next year. The lovely novelty is dedicated to the excellent collector, Mr. W. Lee, Downside, Leatherhead. H. G. Rohb. f.

VRIESIA HELICONIOIDES,*

This was one of the most striking plants exhibited at the Ghent Quinquennial last spring, under the name of V. bellula. It turns out, however, to be the V. heliconioides of Lindley. In any case it forms a most desirable plant for amateurs with small space at command, for the plant is of relatively small dimensions-less than a foot in diameter each way. It has the tufted habit so characteristic of Bromeliads, with arching, ligulate-lanceolate green leaves, of a violet colour on the under-surface, each about 10-12 inches long. The inflorescence is a simple erect spike, rising from the centre of the tuft of leaves to a height of 4-5 inches, and bearing two rows of spreading, boat-shaped bracts, overlapping each other at the base, and of a

WALLFLOWERS.

THROUGHOUT the market gardens of West Middlesex Wallflowers are so green and vigorous, and have been blooming so richly throughout the winter, that it would indeed he a disaster were any severe weather to intervene to their injury. The fine quality of the true market strain may be seen in breadths of several acres in extent in which almost every plant is of the same height, and size, and has the same rich-coloured flowers. The best strains are not so very dwarf, averaging perhaps where not drawn some 12 to 14 inches in height, but then the seed is sown in February probably, and the plants in good soil are far bigger than are those seen in private gardens; indeed, in most cases a bushel basket would not cover them. Rather dwarfer selections, specially fitted for bedding, are not difficult to obtain, but these do not give such good spikes of bloom for cutting as do stronger-growing plants. We may take it



FIG. 26.-VRIESIA HELICONIOIDES.

brilliant rose-pink colour, the free end being green. brillant rose-pick colour, the free end being green. The tubular curved flowers, of which only the unexpanded buds are shown in our illustration, greatly exceed the bract in length, and are of a pure white. The plant grows on trees in the valley of the Magdalena. For our illustration (fig. 26) we are indebted to the Compagnie Contineotale d'Horticulture, by whom the plant was introduced to commerce.

CHRYSANTHEMUM CERES. - We bave received a flower from Messrs, Cannell & Sons, Swanley, under the above name. It is of a pleasing light flesh colour, resembling the Rose La France, and illustrates forcibly how near we are getting to a race of varieties that will overlap the flowering time of the summer bloomers. The specimens sent showed great sturdiness of growth, fine foliage, and were fair sized flowers. The strain is evidently hybrid Japanese, as seen in the broad, convoluted, and loog petals. Under special culture this would possibly develope into a good flower.

for granted that crimson kinds of single Wallflowers, let them be under what name they may, are generally identical with the London market strain, one which it is difficult to excel.

It need hardly be said that market growers do not sow their pounds of seed in warmth even in February. A dry piece of ground and a dry day is all that is needed, and the seed being fresh and good will germinate freely, and give tens of thousands of plants to go out in May and June. The grower invariably marks for his own seeding a dozen or two plants that are early to bloom, are of a deep rich hue, and, not least, those which exhibit a good habit in the production of flowerspikes. There is nothing like a plant that gives up its spikes all at once, so that one cutting clears it off. The same habit is best in bedding strains, and those who want to see a rich mass of colour in the winter and spring can hardly do better than sow seed of a first-rate deep red Wallflower early; plant out as the market growers do, and then transplant with big balls of soil and roots into the bed in October, using not a wheelbarrow but a handbarrow to carry the plants from one place to another. Whilst, however, there

V. heliconioides, Lindley, ex E. Morren in Illustr. Horti-cole, t. 490; V. bellula, hort. Linden; V. Falkenbergii, hort. Augl.

may be said to be but one really good kind of dark coloured single Wallflower, there are several good yellow kinds; indeed we can name five that exhibit distinctness, and perchance there may be others. The strongest of all perhaps is found in Graham's Yellow Perfection. It is a strong grower, the spikes long, and the pips large, but in many the petals hang somewhat loosely; the colour is a rich bright yellow. As a rule it is somewhat less compact in habit than the blood-red market kind. Very closely allied to this is the somewhat misnamed Golden Tom Thumb, which in bloom grows to a height of 18 inches, and is of somewhat irregular habit; still it is a fine yellow for cutting, and we marvel that, with a fashionable taste for yellow flowers, such a beautiful kind has never been grown for market.

Whether the public would purchase or not does not seem to have been fairly tested, but when middlemen or dealers decline the public must submit. The best of any good yellow strain is seen in the fact that from first to last the colour does not vary. On the other hand the deep red flowers will fade as the season grows, until a few warm days will turn the finest colours to a yellowish-brown. That means consider-

average height of full grown plants is 6 inches. It makes for these reasons a beautiful pot plant, but, of course, it is best employed as a bedder or edging plant. A good breadth shows remarkable evencess in habit, and presents the dwarfest true Wallflower extant. Such a strain of the Blood-Red kind would be most valuable.

SAXIFRAGA BURSERIANA VAR. MAJOR.

THIS is one of the dwarf-growing species, forming little tutts of closely-packed, three-sided, sharply-pointed, ciliated leaves, from amid which the flower-stalks, about 2 inches high, arise, each bearing a solitary pure white flower with rounded petals. It is a native of the Austrian Alps, extending into Transsilvania and the Banat. It is one of the earliest of the Saxifrages to bloom, flowering on the rockery as early as February, on which account alone it is worthy a place in all gardens. Like most plauts it is subject to considerable variation, and the collector is, of course, ever on the alert to pick out what he thinks



FIG. 27 .- SAXIFRAGA BURSERIANA VAR. MAJOR: FLOWERS WHITE,

able depreciation in market value. From out of this Continental yellow strain, which is called Golden Tom Thumb, has been selected a very fine flowered but much more compact habited strain, named Bedfont Yellow. The first kind has distinct pale green leafage and flower-buds; the latter bas leafage like almost to that of the Blood-Red, and rather darker flower-buds; its average height is 12 inches, and the flowers have fine flat stout petals of a rich orange-yellow hue. It is very early, and will make a grand bedding kind, or to edge a mass of the taller deep Blood-Red kind. Then we have a well-known bedding kind in the Belvoir Yellow, but it is a little later than any other. Its average height is 9 to 10 inches, it carries dense heads of bloom, but the petals are small, and of a pale yellow hue, as a rule. This kind may always be distinguished by its peculiar habit and pale green flower buds. It is best sown early in April, as the seedling plants are not quite so hardy as are those of the Market Red. For cutting purposes it is of little value, but in April and May it makes a very striking mass of yellow.

Still another, and dwarfest of all, is Yellow Dwarf. This is a very distinctive babited kind from Belvoir Yellow, though a selection from it. Strong plants, prior to blooming, average 3 to 4 inches in height, and are of a dense bushy babit. When in bloom the

the best. In this case there will not be much difference of opinion as to the superior merits of the var. major, which we are enabled to figure (fig. 27) from a specimen kindly forwarded by Messrs. Backhouse, of York.

FORESTRY.

PINUS LARICIO.—About sixteen years ago, having occasion to clear and plant several acres of land in Cheshire, I determined to try all the leading kinds of coniferous trees, hardly any of which were growing in the neighbourhood. I will speak oow of the Corsican Pine, P. Laricio, about which I have lately observed several notices in the Gardeners' Chronicle. My attention was especially directed to this Pine by having frequently noticed the fine specimen of it in the Royal Gardens at Kew, which grows about 100 yards from the Kew Green entrance to the gardens, on the left-hand side of the path; and of this specimen I will say more presently. Having obtained 2000 or 3000 two-year-old seedlings, and planted them in a nursery, I bought a hundred trees of 2 feet high to plant out at once. Nearly all of these were dead in a few mooths, and so were a second and a

third lot of the same size. I then discovered that, if P. Laricio has been growing two years or more without transplanting, it will not stand having the roots bared and being sent a journey. Meanwhile I was every autumn transferring those in my oursery to permanent places, and of them I lost hardly one. I planted them, some on wet boggy soil, some on rather stiff clay, some on sand. Those on the wet soil did worst, not nearly as well as Scotch Firs planted at the same time. Those on the clay grew very fast, many of them as much as 3 feet a year for several years after they were established, till they became from 15 to 20 feet high, and then nearly all of them became top-heavy, and were blown down, not by one violent gale, but a few at a time. The soil was so strong that the roots had not to travel to find food, and so confined themselves within a very small radius from the stem, and afforded insufficient hold. Where the soil was sandy the growth was perhaps one-third slower, and as the roots are more spreading the tendency to blow down is not so great. Still, as compared with Scotch Fir, the tree is more top-heavy and less stable.

Where I made mixed plantations of several kinds of Conifers, the Corsicans always presented themselves as trees to be taken out in the process of thinning, becoming untidy at an early age as compared with Larch, Douglas Fir, Silver Fir, and Wellingtonia, so that I have probably not more than 200 or 300 Corsicans left. It is remarkable how easily they are cut down at the age of ten or twelve years, being much softer in the wood than Scotch Fir of the same size; in fact, up to that age they seem to be nearly all sap-wood. The tallest amongst my trees at fifteen years old are from 25 to 30 feet, and their girth near the ground from 28 to 30 inches. Up to this time they have beaten Scotch Firs planted with them, but the annual growth of the Corsicans is fast diminishing, and the Scotch are gaining upon them. The same is happening a few miles away on the range of hills at the end of which Beeston Castle stands; where a large tract of sandy hill-side was planted in 1865 with Larch, Corsican, and Scotch Fir. Few of the Corsicans are there more than 25 feet high, and some of the Scotch are nearly as tall: but both look healthy.

The late Mr. William Menzies, head forester of Wiodsor Park, told me a few years ago that he believed the Corsciean Pine was proving a failure, and it has certainly been planted long enough in many parts of the country for us to know more than we do about it, if it is successful. The following abstract of its history has been collected partly from the books on forest trees edited by Gregor, Selby, and Brown, but mostly from the very full account given in Loudon's Arboretum Britannicum, published in 1838.

The Corsican Pine is a native of many parts of the South of Europe, Spain, the Morea, Mount Etna, the coasts of France, and also the Caucasus, and parts of Asia Minor, but grows to the largest size in Corsica, where it is often found from 120 to 140 feet high, attaining its full size at the age of seventy or eighty years, and being used as good timber at the age of thirty. The first planted in England is said to have been brought in 1759, and is probably the very tree mentioned already as growing at Kew. which is now therefore about 124 years old. Loudon figures this tree as it was in 1838, when it was about 85 feet high. It was then branched to within a few feet of the ground. Selby, whose Forest Trees was published four years later, speaks of the same tree as being 90 feet high. It is now, perhaps, 120 feet high, and the trunk is bare to within a few feet of the top, and as straight as a ship's mast. The next tree of which the progress is recorded was planted in the Jardin des Plantes at Paris in 1774. Loudon speaks of this tree as being 80 feet high in 1838. It would be interesting to know whether it is still standing. About the time that the latter tree was planted the quality of the timber, which had long been used in the French Navy, became the subject of investigation. left uncertain whether the timber of Scotch Fir from the Baltic or Corsican Pine from Corsica was the better; but it was recommended by the French Government that the tree should be cultivated in France. However, the cones were so difficult to obtain that those of P. maritima (Pinaster), a closely allied species, were fraudulently sold as those of P. Laricio. In 1822, owing to the continued difficulty of obtaining genuine seeds, many thousand Corsican Pines were grafted on Scotch Fir in France, and planted in the Royal forests; but about that time M.

Vilmorin, who had planted the tree extensively at Barres, in Brittany, supplied the market with seed, and continued to do so for many years.

Loudon tells us that in his time the tree had been planted for ornament in many parts of England and Scotland, and that its growth had been very rapid. The trees mentioned by him must, many of them, be from sixty to seventy years old, and have attained their full maturity. The most remarkable charactertheir full maturity. The most remarkable characteristic of the tree is its rapidity of growth; it has been mentioned that in its native country it makes a timber tree in thirty years, and that it ceases to grow at the age of seventy or eighty; while the Scotch Fir will continue to grow up to the age of 200 years, and remain standing sound up to 300. Still we have the fact stated, that the cultivation of the tree was recommended, and in some instances commenced, in Great Britain more than fifty years ago, and it is not known that any timber worth recording has yet been produced by it. It is probable that any soil suitable for Corsican Pine would also grow good Larch, and that the latter tree would give more profit in the same time. In the young trees which I have cut, or which have been blown down, the amount of sap is so great, and the wood so soft, that they are of no use for fence rails or even for firewood. I accidentally heard within a few days that on Lord Belper's estate in Nottinghamshire, where the soil is heavy, the Corsican Pines planted from thirty to forty years ago have all been blown down.

Pinus Laricio was first introduced to England by the name of P. maritima, which it still retained at Kew when Loudon's work was published. C. Wolley Dod. Llandudino.

P.S.—I must plead guilty to having made a mis-statement about Lord Belper's trees. The Firs which were blown down in the recent gales were, I am informed, Pinus austriaca, not P. Laricio. These two kinds of Fir were planted together about thirty-five or forty years ago on Lord Belper's estate in the south of Nottinghamshire, where the soil is clay. The P. Laricio are now from 50 to 60 feet high, and seem likely to make good timber, whilst the P. austriaca, which are not more than 40 feet high, have been blown down. This is certainly the opposite of what has happened here. I planted some hundreds of P. austriaca with the P. Laricio, and half of the latter have been blown down, but not one of the former. The P. Laricio are at least half as tall again as the P. austriaca, which never can make a timber tree from its bushy habit, though for ornament as well as for shelter I consider it superior to P. Laricio. C. Wolley Dod, Jan. 29.

FOREST WORK FOR FEBRUARY: PLANTING .-Owing to the lengthened continuance of fine dry weather, planting operations should now be near a close, unless in such wet unfavourable situations as it was deemed necessary to leave over till spring. Where transplanting is carried on at the present season great care is necessary to avoid keeping the plants out of the ground longer than is absolutely necessary. Where trenching and pitting were carried out in autumn or early winter there will be but little difficulty in obtaining a finely comminuted soil for the reception of the young plants. Unless urgently required it will be better to leave unprepared ground over for planting next autumn. Attend to newly planted ground, and see that none of the plants are rocking with the wind, which proves fatal to many, especially during a dry spring and summer.

NURSERY. - In the nursery transplant layers of Elm and Lime, plant cuttings of all kinds, and prepare beds for the reception of coniferous seeds. Cones may still be collected, especially those of the Austrian and Corsican Pines; but we cannot too strongly insist upon the necessity of selecting those of the best quality, and from healthy, vigorous, middle-aged trees. Sow seeds from the rot-heap, and during dry weather Sycamore, Ash, Maple, Beech and Elm may also be sown in previously prepared beds. Always select fine dry weather for nursery work, and the results will be far more satisfactory than when pursued when the ground is in a damp wet state. transplanting young stock avoid overcrowding, as nothing is more injurious, and give each plant ample room to furnish its side branches, and so produce bushy well-rooted trees, that are not likely to be upset by the wind when planted out permanently. Trench or ridge up such plots as are not to be re-filled with trees, at the same time clear them of all

weeds, and add a liberal supply of manure if found necessary.

THINNING. — Continue the general thinning of plantations, Oak excepted, removing the hardwoods first, and leaving Pine and Fir till the last. This is, however, only practicable where each wood is composed of but one class of timber, and cannot be pursued with advantage in mixed plantations. Plantations that have been neglected till they have formed a dense thicket must be thinned gradually, for if thinned at once those left would not only be injured by the sudden exposure, but many would be blown over during the first storm. Thinning should be commenced in due time, carried on gradually, and proportionately to the exposure of the plantation.

Hedges or trees intended for removal this season should be cut at once, so as not to interfere with farming operations.

Unless in the removal of broken or dead branches, pruning should now be discontinued, especially on such trees as are given to excessive bleeding.

FENCING.—All fences ought now to be put in thorough repair, as during severe weather, and with a scarcity of food, sheep and cattle are difficult to keep in bounds. Examine tree-guards, rabbit-proof fences, and look frequently to the staking and tying of recent transplants. Where game abounds it will be found beceficial, for preventing their attacks on newly planted trees and shrubs, to strew fresh branches about for these pests to feed upon. Hares are especially mischievous to recently planted trees, and frequently cut the leader and side branches over, and that during mild open weather, and with a plentiful supply of tood within easy access.

HEDGING.—There will be but little work in this department at present—at least, if previous instructions have been acted upon; where trimming and plashing of hedges is allowed to remain until late in spring the succeeding growth is weak and feeble. Even the planting of Quicks and formation of hedges, if not already finished, should be speedily brought to a close. Ivy is very pernicious to live fences; indeed, in some damp maritime situations it is a regular nuisance, and necessitates great expenditure in its extermination.

ROADS AND WALKS. — The main requisites of a well-kept road are a smooth, firm, and dry surface; and to produce as well as maintain this a great amount of care in the construction and after-management is necessary. Carriage drives, and all walks within the policy grounds, should receive special attention, so that a clean smooth surface may at all times be maintained, few things being more disagreable to foot or other passengers than dirty uneven roads. Roads that have recently been metalled should receive a coating of screenings, and have a roller passed over their surface, which will greatly help to consolidate them, especially if the latter operation is performed after a night's rain.

GENERAL WORK.—Groundwork improvements of all kinds may be prosecuted during favourable weather, and the shrubberies pruned of all dead, twisted, or overgrown branches. Woodland ditches should receive attention during the winter months, and have all obstructions immediately removed from their course. The mouths of closed drains and culverts will also require frequent inspection, neglect of which often produces serious consequences, and the outlay of time and expense to rectify. A. D. Webster, Penrhyn Castle, North Wales.

WINTER BEDDING AT HALTON.

With the arrival of the cold season, in normal winters, we usually see the flower-beds bereft of all their floral beauty, although, as in the present one, the foliage may remain on the hardiest species. But this will have become ragged and torn by wind and rain, and the plants having made no growth their appearance goes from bad to worse.

Still we prefer these remnants of the past, shabby though they be, to the trimmest of bare beds, as almost anything of a green colour, if kept in order, is to be preferred to bare earth, and that perhaps immediately in front of the windows. One of some of the makebelieve modes of filling our winter flower beds that deserves universal condemnation on the score of downingth tugliness, and as a waste of means to an end, is

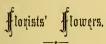
that of filling the beds with slips and branches of evergreen plants. No amount of care will make these appear anything other than what they are—rootless bits, which in all weathers have a frozen-out, flaccid look about them, and which get loose, and twisted with every wind that blows. Sedums and Saxifages, if the gardener has them in numbers sufficient to clothe the soil well, will make fairly good substitutes for the faded bedders of the previous summer. They have the fault of possessing too little variety in growth and colouring, and they labour under the disadvantage of similarity of height. They are therefore not the best of subjects to be employed, without assistance from other plants.

The surfaces are, if varied in colour, too flat to be altogether pleasing, and in large beds especially something is wanted to break up the uniformity of outline and surface flatness. Among the plants generally employed now for this purpose are the smaller growing evergreens, and small specimens of plants that when of mature age, under good culture, become of a large size, but which, under a system of removal in spring and autumn, keep fairly dwaff for

many years.

A still better mode of filling the beds is that of sing evergreens altogether, or in conjunction with bulbs and some good carpeting Sedum to cover the ground in which the latter are planted; by this mixing of the different species of plants very pleasing beds can be furnished that will give a cheerful, warm look to the otherwise bare flower parterres, and which in spring will be gay with Dutch bulbs and other spring flowering plants. A good example of this mixed system of planting with evergreens, bulbs, and Sedums, is to be seen this season at Halton, near Tring, the new residence of Mr. Alfred de Rothschild. These extensive pleasure grounds and gardens, covering twenty-five acres of ground, have only been lately laid out by Messrs. Veitch & Sons, of Chelsea. The style adopted is the natural or English; still, in the parts near the mansion the arrangements partake of the formal character of adjacent objects. A terrace with a balustrade and several flights of steps surrounds the house on the north or garden front proper, the cast and south-east sides. This terrace has at its base a broad margin of turf, on which are a series of beds of simple forms—the circle, the oblong, with semicircular projections from the sides, and a combination of four circles, are the principal figures. These adapt themselves admirably to a style of planting with evergreen shrubs and miniature Conifers, which are the principal subjects made use of. In one bed that stood at the conservatory end of the terrace were the following plants :- Two rows outside of Retinospora plumosa aurea, then came a quantity of Osmanthus ilicifolius variegatus, then another row of Erica vagaos, the centre being Hedera Regneriana lutea, with an edging of Euonymus japonicus. A quadrilateral figure, with semicircular projection, was very prettily planted with an edging of Sedum acre aureum, next to which was a row of Erica mediterranea rosea, then Osmanthus ilicifolius variegatus, a circle in the centre being planted with a golden-leaved Ivy and Retinos-Another bed at the base of the terrace was filled with silver variegated Yew as the centre patch; then came three rows of Mahonia Aquifolium, next to which was a variety of Erica carnea, the outermost line being formed of variegated Box. In other of these terrace beds, Cryptomeria elegans, Retinospora argentea, Thuia borealis, variegated forms of Euonymus, and various species and varieties of hardy Heaths, formed the chief furnishing plants, the flowering section consisting of broad bands of Crocuses in three distinct colours, representing 2s nearly as possible those of the house of Rothschild, On the spacious lawn, which descends from the mansion towards the north, and from which is seen a beautiful panorama of the rich Vale of Aylesbury, the beds are now filled with evergreen and other plants, giving a warm and well-furnished appearance to a garden scene that is, from its complete newness, bare of large trees, although immeose efforts were made to give an appearance of age to it by the planting of comparatively large Coulfers, Ifollies, and deciduous subjects of all kinds. A broad walk leads from the terrace to a water basin of 50 feet in diameter. Right and left from this walk is arranged a row of large-sized beds, and in the centre of each half of the lawn, that is thus divided by the beforementioned walk, is a very large bed, square in genera form, but having circular beds let into the sides. We noticed the planting of these two centre beds was

quite similar, the middle plant being a neat specimen of Picea nigra surrounded by Aucuba japonica, round which was Mahonia Aquifolium; this formed altogether a circle in the middle of the bed; then, right and left, were circles filled with Golden Yew as the centre plant, then Thuia Vervaeneana, and green Euonymus edged with Retinospora plumosa argentea. other circles in the same bed were planted with Golden Yew as the centre plant, round which were dwarf Rhododendrons, and an edge of Retinospora squarrosa. The space between these circles was planted with a scarlet Tulip, and carpeted with a Sedum. One long parallelogram was filled with Golden Euonymus, Portugal Laurel, Cupressus Lawsoniana, and Skimmia japonica covered with berries. Veronica Traversi. Mahonia, Erica mediterranea alba, Menziesia polifolia fol. rubris, Taxus japonica, Cupressus Lawsoniana erecta viridis, Euonymus radicans, make up the major portion of the materials employed in this most extensive series of beds, which are very tastefully arranged. Very few of the plants exceed r foot in height, many of the naturally dwarf ones being much less; and although the arrangements are pleasing now under their purely winter aspects, they will appear much finer when the immense quantities of Tulips and Crocuses with which most are planted come into bloom. M.



AMARYLLIS.—We are now in the bustle of repot-ting the bulbs. This is done once a year, and the usual time is just before they start into growth. For three months previous to this they ought to have been quite at rest by being kept dry at the roots and in a cool greenhouse temperature. We do not let them get so dusty-dry that the rather fleshy roots become In repotting the bulbs it is best to shake all the old compost from the roots, and any offsets that will part readily from the parent bulbs should be removed. Pot the smaller bulbs in large and small 60's, and the larger ones in large and small 48's. We use four sizes of pots for the flowering bulbs, viz., 5, 6, 7, and 8 inch; and for potting soil two parts good turfy loam to one of peat, with a fifth part of rotten stable manure, and sufficient sand to keep the material open. It will not be necessary to water them for two or three weeks after they are potted, especially if the pots are plunged, as they ought to be, in a gentle bottom-heat; also avoid a high minimum temperature, which is not only unnecessary but injurious.

AZALEAS .- As an exhibition plant for the large summer exhibitions the Azalea always holds a promineot position. During the months of May and June the plants are at their greatest beauty. The pyramid form of training is not so fashionable now as it used to be. It is an unnatural form, not only for the Azalea, but for any other plant. Even the round formal heads, which in some instances have taken their place, may be made almost as unnatural looking as the pyramids by the use of plenty of strings. Azalea takes naturally the form of an irregular bush, and most of the named varieties have an awkward habit of growing out of all form, by one or two leading shoots pushing away from the twiggy bud-furnished branches. This habit must be restrained by pinching these vigorous growths during the late summer months I have previously alluded to thinning out the buds; this is an important part of their culture, as a mass of flowers so much crowded together that they cannot open, is not a pleasant sight either in the greenhouse or conservatory, far less on the exhibition stage, well bloomed specimen Azalea is a strong point in a collection of stove or greenhouse plants in July. Late flowering varieties should be selected for this, and can be retarded by being placed either in a cool part of the greenhouse, or in a cool house with a north

CINERARIAS. — Few persons now grow named varieties, at least not into the form of exhibitors specimens of large size. I have observed that, not only in London but at the large provincial exhibitions, all the plants are seedlings merely, with no attempt at training. This primitive method of managing the business is not to be commended. Propagated plants of named or selected varieties are

as easily grown as seedlings, and they make equally good specimens. We have propagated plants now, including the variety "March Past," in 8-inch pots, that will be between 2 and 3 fect across. They are propagated in the autumn, and potted on as they require it, the centre being pinched out as soon as it can be done. Keep the plants now close to the glass; give them sufficient air. High winds, even if they are not frosty winds, are injurious. Give weak liquid-manure water occasionally when the pots are pretty well filled with roots.

CHEYSANTHEMUMS.—We were rather later this year in getting the cuttings put in, but have now done so. It is best to plant each cutting carefully in a small pot, and plunge the pots in some moist material in a cold frame, keeping the lights close for a few weeks. If a hotbed with a gentle bottomheat is at hand, it may be as well to place them in there, but they will form roots in a cold frame, though more slowly. Young plants propagated early to form specimens should be placed on a shelf in the greenhouse; they need no more artificial heat than enough to keep the frost from them, but they must be grown on freely without any check. If the Chrysanthenum has to be well grown it must be looked after all the year round, and be kept growing steadily, free from insect pests. The specimen plants at least must be kept growing until all danger of frost is over.

CALCEOLARIAS .- The culture of these and that of Cinerarias is very much alike. Propagating named varieties is not quite so satisfactory as in the case of Cinerarias, and perhaps it is best to trust entirely to seedlings of a good dwarf strain, as the principal seedsmen vie with each other to produce the best article; good seeds can now be obtained from all the seedsmen. This plant is rather more hardy than the Cineraria-it will almost stand a touch of frost-but they are more liable to be injured by greenfly; it is of the very first importance that they should be kept clean. Gardeners and amateurs are not alive to the importance of keeping their plants clean rather than destroying the fly after it has done considerable injury.

PELARGONIUMS.—With the increasing light, and the plants under favourable conditions—that is, near the glass in an airy greenhouse—the leaves will be deep green, and rather brittle; care is therefore necessary in tying out the stems, in case these snap off or the leaves get broken. The over-crowded growths ought to have been thinned out before this time; but if it has not been done, do so without any delay. The latest flowering plants may not yet be potted, but it will be best to see that they are done at once. The plants ought to be potted rather firmly, and those that were potted in October are now pretty full of roots. During the last six weeks they have been kept rather dry, each plant ought, therefore, to have a thorough good watering, to moisten all the roots, 7. Douglas, Great Gearies, Hord.

THE PROPAGATOR.

THE CULTURE AND PROPAGATION OF GLOX-INIAS .- The Gloxinia is one of the finest of summer flowering bulbs. Its flowers are of brilliant and rich colours, and for window decoration it lends an iovaluable aid. In conservatories it stands prominent for its rich beauty and graceful appearance; when tastefully arranged in baskets with Feros it can scarcely be surpassed for beauty and good effect. Few other plants equal it when combined with Ferns for drawing-room or other indoor decorations. Custom has long used the flower of the Gloxinia with success and profit for bouquets when intermingled with Ferns. It is hardly necessary to say that, when arranging a bouquet of Gloxinias, the erect varieties should be placed in the centre, and the drooping ones on the outer side. We propose now to make a few observations on the propagation and culture of Gloxinias, adding a lew remarks about the seed-time, and of the way to keep them in a state of health and beauty. There are many varieties of plants which are most easily propagated, but the delicate operations in the propagation of the Gloxinia must be performed with the greatest skill and care if we would be successful.

Gloxinias may be produced—1, from cuttings; 2, from whole leaves; 3, from pieces of leaves; 4, from seeds

I. FROM CUTTINGS .- Having selected a number of growing Gloxinias for cuttings, cut each plant down, only leaving the first pair of eyes directly above the bulb, in order that the old plant may grow and shoot out like a new bulb. The top of the plant that bas been severed from the bulb has now to be made into cuttings, and care must be taken to see that they are made as follows: - Beginning at the top, or smallest part of the stem, cut it off immediately below the first pair of eyes, i.e., below the first pair of leaves, but not so as to cut the leaves in any way. The next section must be made differently to the first cutting, about an inch below the next pair of eyes. This and the subsequent cuttings must be cut longitudinally, so as to make single eyes-or two cuttings out of one; and continue so to do until the plant has been used up. These cuttings, the eyes of which are only just covered with soil, must be potted each in a thumb pot, with a small stick to support them. If there is any difficulty in keeping the top cutting in the pot, it would be advisable to make a hooked peg, and thus make it secure in the soil over the leaf-stalks. are now ready for the cutting frame, in which they must be put on a gentle heat. They must, however, be well ventilated for an hour in the morning and in the evening, or if the house is a very close one it would be better to remove the covers from off the frames during the whole of the night.

2. FROM WHOLE LEAVES. - Although propagation by the leaves is a somewhat delicate operation, the gardener who is gifted with common sense and intelligence, and who strictly follows the remarks given below, must command success. nature of the success of the propagation of Gloxinias from leaves must depend upon the first step that is taken in making the cuttings. The first step is to gather your leaves together; they must be fully developed and ripe ones, or, to write in the terms of a propagator, "hard" leaves. If young and tender leaves are selected, potted and put in a frame, they will only rot. The footstalks of the leaf cuttings must be severed close to the leaf itself; the midrib of each leaf must be notched, with a sharp knife, in four or five places; and the veins branching out from the midrib in one place only. If the midrib or vein be cut through, the abundance of sap will waste and thus weaken or limit the number of plants it would otherwise produce. A few well drained pans, filled with a sandy soil sifted through a 4-inch-sized sieve, are now required. The leaves must be spread upon and pegged loosely to the surface of the soil. The pans must now be placed in a cutting frame. When young plants have formed on the leaf-cuttings and begin to send out shoots, pot them into thumb pots and put them in a damp but warm place; either upon a gentle bottom-heat or upon a warm shelf. As the plants increase in size they must be put into larger pots, and on no account must they be allowed to become "pot bound." There is, however, another method of forming strong bulbs in a shorter time. If flowering bulbs are required in one season there is no better method of which we know than that given below. Having made the selection of leaves as directed above, put six leaves, if they are large ones, eight if medium, or twelve if small, into a 48-sized pot. When cutting them, an inch of the foot-stalk must be left on the leaf in each case. They must be planted up to the leaf in a cutting-pot, and supported by means of four sticks on the borders of the pots, placed so as to form the corners of a square, and around them on the outside a piece of matting must be tied to make the cuttings secure. They must be placed in a cutting frame until they have rooted, then they can be potted off, or the bulb can be allowed to mature in the cutting-pot if more convenient.

3. FROM PIECES OF LEAVES. — This method of Gloxinia propagation is perhaps the most difficult. It is important to have proper cutting-pans or pots prepared. The best soil is sandy peat sprinkled with loam and sifted through a fine sieve. When filling the cutting-pan or pot press the soil down firmly, and cover it with sand a quarter of an inch in depth. In order to make it with a rose-pot and allow it to settle. Take a hard leaf and spread it upon a deal board. The footstalk must be severed close to the leaf; the midrih of it, if a thick one, must be reduced to one-half its bulk, i.e., a slip must be taken off along the top of it. The leaf must now be divided into two parts with a sharp kolfe through the centre of the midrih longitudicall; ;

these two portions of the leaf must again be divided, crosswise, into small strips, each strip having a vein running through it. If the latter remark is acted upon, not only will the vein help to support the piece of leaf, but also it will help to form a larger bulb. With the aid of a label, or any other flat piece of wood, the cuttings can be placed half an inch deep into the cutting pot. It should be arranged for twelve pieces to form the outer ring, eight the next, and four the centre. The holes made with the labels should be filled up with dry sand. When the cuttings have been watered through a fine rose-pot, put them in a cutting frame. As soon as they begin to send out shoots, pot them into thumb pots, and repot them as often as necessity dictates.

In the culture of Gloxinias, from this time great care must be exercised to prevent the attacks of the rust and the fungi, which cause so much damage. If the plants are kept clean, and in an equable temperature, it is seldom they are attacked by rust If, however, the temperature is allowed to vary from hot to cold, not only does it dwarf the plants, but it weakens them also, and thus renders them doubly liable to the attacks of thrips and red-spider. Should the plants be attacked by these pests, the best means of cleansing them is to sprinkle them lightly with sulphur through a dredger, two or three times. When the plants have been sprinkled with sulphur, under no circumstances must sprinked with surpair, under in chromatoces may be allowed to reach them, because it would burn them. Also the temperature must be kept up to between 65° and 75°. The floor of the house must be well damped, and it is also a good plan to syringe between the pots, but never over the heads of the plants.

Sometimes the Gloxinia is attacked by a small white fungus, which generally spreads itself over the whole root of the plant. The best treatment is to have the plant shaken out, and the roots washed two or three times in a solution of tobacco-water and soap. The proportions of the mixture should be, a quart of tobacco-water added to a piece of soft soap about the size of a Walnut. The soap should be first dissolved in hot water, and mixed with tobacco-water, to which a quart of ordinary water should be added, and the whole mixed well together.

The best time for starting the Gloxinia into growth is in February. The old plants should be shaken out from the large pots they filled, and potted into as small pots as conveoient; the roots of the plant as smart pots as convenient; the roots of the plant being rubbed off first. As soon as they root through they can be potted into 32-sized pots. If specimen plants are required, the strongest ones should be separated from the rest and potted into 16-sized pots. The latter will of course require training. A hoop of wire should be coiled underneath the rim of the pot to which the shoots of the plant should be tied with a piece of matting. The shoots should be trained straight across the pot. It is a good plan to thin out the leaves in the centre of the plant as they grow until about the flower-time. If this is done the plants will be symmetrical, and the flowers will increase incredibly in number and beauty. The best soil for potting the Gloxinia in should be composed of one-half loam, and the other half of peat, leaf-mould and sand in equal proportions.

4. FROM SEEDS .- It is a fruitful and interesting means of increasing Gloxinias to raise them from seed. The seeds should be sown early in January, and in similar soil to that mentioned above, only the leaf-mould must be excluded and the soil passed through a fine sleve. Shallow pans should be filled with the soil, firmly pressed down, and the seed sown with the soil, firmly pressed down, and the seed sown upon the surface. A piece of glass must be placed upon the top of the pan, and the pan must be put upon a warm shelf. When the seedlings apring up prick them off and put them in another pan, each seedling an inch from the other. As these increase in size and strength pot them into thumbs, and repot them into a larger size until a 48-sized pot is reached. In this pot they will flower. During the growth of the seedlings a good growing temperature must be kept up, and the gardener must be careful to see the growth is not checked by a widely varying temperature.

rature.

Of the old varieties for Gloxinia the following are perhaps the best:—Charme de Lutéce, Prince of Wales, Duchess of Teck, Insulaire, Boule de Nêjeç, Coup d'Hébé, Mont Blanc, and Vesuvius.

Messrs. James Veitch & Son, of Chelsea, are noted for fine Gloxinias, and among the best of their new ones are Cordelia, Crimsoo Queen, Radiance, The Car, Daimio, Bayard, Mrs. Atkinson, and Garibaldi. T. O.

BRITISH EPIPHYTAL ORCHIDS.

GROWING here and there in the upland bogs of the British Islands may be found a very small Orchid, having one or two tioy pseudobulbs, not at all unlike those of some tropical species of Dendrobium. So small and inconspicuous is the plant, however, that you may search for it in vain unless you are an experienced collector, or unless some friend is there to show you the peculiar habitat it invariably prefers. The little plant alluded to is popularly called the "Marsh Bog Orchis" (Malaxis paludosa), and it is a species of peculiar interest, only found on trembling sods of bog-moss, or sphagnum, and in positions where one may not always venture with impunity, since, however tempting and secure the cushions of moss may look, they are apt to be as treacherous as they are beautiful; and even when the dainty little Orchid itself is discovered, one can but rarely gather it with dry feet; and perhaps this is Orchids of the epiphytal class now so popular in our gardens. As a matter of fact, we bave many among our native plants which now and then assume epiphytal habits. Some mosses, lichens, and Ferns often do this, and wild Roses, Honeysuckle, and Ivy, occasionally exist in a sub-epiphytal way, but I believe we have no true epiphytes, as distinguished from parasites, among our flowering plants except these two rare little native Orchids. This, if true— and for the present our observations prove this to be

the case—is a very interesting fact.

We have said that the little Malaxis is always epiphytal-epiphytal on living sphagoum moss-and this fact of itself becomes practically interesting and suggestive when we remember how very little progress of a permanent character was made in the culture of tropical Orchids uotil the use of this same sphagnum became general. Even the sphagnum itself is peculiar in its variation as also in geographical distribution, and that it readily adapts itself to the tropical temperature of our Orchid-houses may be



Fig. 28 .- BRITISH EPIPHYTAL ORCHIDS. A, Malaxis paludosa on Sphagnum; B, Liparis Loesellii on Rushes.

one reason why the plant is thought to be rather rare and local in our flora. It has been found in mountain bogs at 1500 feet above the sea level, and is not at all uncommon among the Dublin mountains, where the "lesser Twayblade" (Listera cordata) is also quite at home to the wandering botanist, and where Isoetes lacustris forms a bright green turf near the margins of the gloomy lakes or taros. But just now the little Malaxis is of most interest to us, as being undoubtedly a true epiphyte in its way, growing as it does on the stems of the common bog-moss or sphagnum, instead of emu-lating its relatives, the Dendrobia of the East or the Masdevallia of the West, by growing high up in the branches of a forest tree. Its real relation to tropical Orchids of the epiphytal group is still further shown, inasmuch as its pollen is concrete or wax-like, and not powdery, as is the rule among our native Orchids of the terrestrial group. Although by no means beautiful, this little Orchid and its solitary relative, Liparis Loesellii (epiphytal on rushes in the bogs of Cambridge and Lincolnshire), illustrate for us the most characteristic traits of that large group of tropical

one illustration of its cosmopolitan distribution-or rather the result of that latent strength and vigour which enables it to resist the variable, albeit more temperate climates of both hemispheres. Now-a-days sphagnum moss is such an important factor in the compost, or rooting media, employed in the culture of all tropical epiphytes, whether they are Orchids, Nepenthes, Arolds, Fromeliads, or Ferns, that it becomes even more interesting to find that Nature has been growing our native epiphytal Malaxis for ages on the same material. F. W. Burbidge.

USNEA.

THIS, like its fellow lichens, is an epiphyte, growing upon trees, but is not really parasitic upon them in the sense of deriving nourishment from them. Our illustration (fig. 29) is taken from a photograph representing a scene in a swamp in Florida, where the trees, rising from an undergrowth of dwarf Palms (Palmetto) have their branches wreathed with the pendulous wisps of this grey licben. The profusion of this growth, its length and dull colour, give a peculiarly weird, lustreless aspect to the forests. Like other Lichens, these Usneas afford an example of good-fellowship; at one time thought to be imaginary, but which is now becoming generally accepted—we allude to the association in one plant of a fungus with an Alga. The fungus, destitute of chlorophyll, preys upon the Alga, which has a store of that material,

they may obstruct the ingress and egress of gases and liquids, which go on through the younger bark in the same way as through the leaves. Lichens are usually indicative of a moist atmosphere, but it is remarkable how they infest certain trees and not others. Thus at Osborne, where there is a long avenue of Austrian Pines alternating with Elms, the latter are thickly encrusted with lichen, while the



FIG. 29.-GROWTH OF USNEA ON TREES IN FLORIDA: FROM A PHOTOGRAPH.

and thus makes the Alga do its life-work for it. But as the growth of the Alga continues proportionate to the demands made upon it, the balance is not destroyed, and the two plants jog on comfortably together. The epiphytal habit of lichens makes it a question whether fruit growers need to he so careful to remove the "moss," as they call it, from the stems of their trees as they are. But although the lichens do not prey on the fruit trees they may serve as a harhour for insects, and, in the case of the younger shoots,

Pines are nearly free (Gard. Chron., August 13, 1881, p. 198).

PLANTING IN MAURITIUS.—According to Mr. Home's reports, the planting in the suburbs of Port Louis has been successful in improving the sanitary condition of sites formerly most unbealthy. Eucalypti of various kinds succeed well, and Cedrela Toona is highly spaken of for the rapidity of its growth and the value of its timber.

Prehid Notes and Cleanings.

ERIOPSIS SPRUCEI, Rehb. f.— This interesting species was discovered in 1854, in the neighbourhood of the Rio Negro of Amazona, or Solimoes, by the eminent collector, Dr. Spruce, whose No. 2390 it is. I named and described it in Walper's Annales, vi., 663, and now, after a lapse of nearly thirty years since the discovery, I have it alive. Mr. E. Harvey, 12, Riversdale Road, Aighurth, Liverpool, has kindly sent me bulbs, leaves, and inflorescence, telling me that it came from the Amazon territory. The cylindrical, strong, green bulbs are nearly even, having few linear superficial furrows, and the scars of the leaves are aculeate from the remains of the vascular hundles, as in Lycaste, &c. The long cuneate oblong-ligulate acute leaves are of a thicker substance than those of a common Lycaste and Zygopetalum. The raceme is long, cylindrical; the flowers equal in size to those of Eriopsis biloba, Lindl.; the sepals and petals are lemon coloured, and the petals have red borders. The side lacinize of the lip are nearly circular, the mid-lacinia has broad stalk, and a transverse elliptic blade. Two fleshy retrorse acute horns stand in the middle of the disc, quite an unusual ornament for an Eriopsis, when the nearest ally, Eriopsis sceptrum, has two membranous, triangular, no doubt resupinate blades, standing more towards the base. It is exceedingly distinct in this, not to speak of the different bulbs. The side lacinize are whitish, covered over by innumerable red minute spots. The central part between the side laciniæ, the disc, is white, like the two horns, which have an apiculus below their point in front, and mauve spots at the base. The central lacinia is lemoncoloured, with mauve spots on the base of the stalk. The trigonous curved column is lemon-coloured, and has a few purple spots on the anterior part of the It was an extraordinary satisfaction for me to see this fine plant alive—a pleasure for a botanist to name such distinct species. H. G. Rehb. f.

IPSEA SPECIOSA .- Your correpondent at p. 119 is in error in supposing this attractive species exists only in the Kew collection. It has been regularly grown for the last seven or eight years by me, and is always highly esteemed by visitors as well as amateurs in Orchids for its extremely distinct qualities. In March, 1879, my gardener was awarded a First-class Certificate for it at South Kensington, and the plant was excellently figured in a coloured plate in the Garden, vol. xxii., p. 188 (August 26, 1882). Its cultural requirements are not difficult to satisfy; pot in an equal mixture of peat and loam, with sharp river-sand to keep it open; grow in the warmest house, and keep clear from yellow fly (aphis), which seems to have a special fancy for the tender growths. With me the leaves always appear first, and the flower-scape rises afterwards, exactly the reverse of the statement of your correspondent, who must I think have been misled by what has happened with newly imported plants, and mistaken their conduct for the regular habit of the plant when established and settled to its regular régime. F. A. Philbrick.

ODONTOGLOSSUM ROSSII MAJUS.—With this as with all other Orchids the quality of the variety rules the value of the plants. At Sander's sale at Messrs. Protheroe & Morris' on January 25 a very fine variety of this having very large flowers, the colouring of the sepals being of a yellowish-brown instead of the usual claret-brown, the same colour running almost to the tips of the petals and through the usually white outer half in a very quaint manner, was purchased by Baron Schröder for eleven guineas, plants of the ordinary form only realising as many shillings.

ORCHIDS IN FLOWER AT THE CLAPTON NURSERIES.—Amongst several rarities in bloom here is a beautiful new Saccolabium that bears the name of S. bellinum; it is much in the way of S. higibbum, but the individual flowers are double the size; the ground colour of the sepals and petals is olive-yellow; three-fourths of the surface are covered with large blackish-brown spots; the interior of the sac is pure white spotted with crimson; the lip is quite flat, three-fourths of an inch across; conspicuously fringed, white, with a bright yellow circular blotch in the centre, in which, forming almost a

circle, appears a row of well-defined red spots, which latter, although they stand out distinctly on the yellow blotch, are only reflected, as in reality they are on the back of the lip. Several examples of this really fine Orchid are in flower, differing to some extent in their more or less depth of colour. growth of the plant is like S. lanceolata. In the thousands of plants of Cattleya Triange here that have not before bloomed, and which are now daily opening their first flowers, not a few of them have four or five scapes apiece. There is much interest attached to the unfolding of these first blooms of this most variable of Cattleyas. Some varieties of extraordinary merit have already appeared, one in particular may be mentioned, to which the varietal name of T. Backhouseana superba has been given; it is a flower of large size and great substance in all its parts; the lip is of the most intense deep purple, suffused with an indescribable violet shade, contrasting beautifully with the yellow at the base. The sepals and petals are of the usual soft lilac shade; the petals, which are unusually large, have a distinct feathery stripe of deep purple running from the extremity downwards to about half the depth, half an inch wide at the extremity, tapering at the bottom: this band of deep colour in the petals is the most decided we have seen, and much enhances the beauty of the flowers. Another lovely form of this Cattleya has an unusual amount of the orange-yellow colour running completely across the interior portion of the lip, then comes a broad band of crimson, almost black, whilst the extremity of the lip is violet-purple, much lighter in shade; the sepals and petals are nearly white. Many other fine and distinct forms of this Cattleya are here to be seen, but the above stand out as gems such as rarely make their appearance. A new and distinct looking Phalænopsis is also in flower, something in the way of P. Veitchii. The sepals and petals are white, suffused with mauve; base of lip pale yellow, freckled over with small crimson spots; the lip is unusually long, and of a dark reddish colour. The leaves are like those of P. Veitchii, which also was in flower, and several forms of P. Stuartiana. The immense quantities of P. amabilis and P. Schilleriana are opening a second lot of buds, formed after the first, which, as so often occurs, were destroyed by the fog. Some 6000 recently imported P. grandiflora fill a considerable portion of one of the large houses; they are in excellent condition, the leaves in most cases showing little effects of their trying journey. The rare Calanthe Cecilize is in flower; it may be described as a C. veratrisolia with the lip pale lavender, all the remainder of the flower white, as in C. veratrisolia. number of healthy plants of the miniature white-flowered Angræcum hyaloides are blooming; so free to flower is it that tiny single crown plants not above 2 inches high were bearing three or four spikes each. A new Dendrobe, with the growth of D. luteolum, is flowering; it has short broad sepals and petals, pale primrose-yellowin colour, with pinkishred lines on the lip. Amongst different varieties of D. Lowii is one much superior to the ordinary form, with the usual yellow sepals and petals; the red blotch on the lip is much darker and better defined than general. The singular Trichocentrum albosanguineum is likewise in bloom, with its remarkably marked lip, the white and sanguine-red colours in which are so clearly defined. Among numerous Cypri-pediums were C. Stonei, C. Lowii, C. Harrisonianum, and C. Boxalli. Of this last, which is one of the best winter flowerers, there is an immense number. Of C. Lawrenceanum one of the large houses contains 7000 newly imported plants, that have arrived io surprising condition; a few pags of this handsome variegated plant help to enliven an Orchid-house with its beautiful foliage, independent of its flowers. useful winter-flowering Lycaste Skinneri is represented by some beautiful varieties in bloom; the enormous quantities of this good old plant coming on will soon be a sight in themselves, with their endless variety in shade and colour.

Odontoglossum Warnerianum.—This beautiful epiphytal Orchid is one of the many forms referable to the O. Rossii type, and which have been introduced at various times from Mexico. The present one is far superior in size and colouring to the type, having the sepals heavily blotched with dark chocolate markings on a white ground, thus differing from the type in the absence of the green tinge suffusing the ground colour. The elliptic obtuse petals, with the exception of a few dull purple

blotches at the base, are of the purest white, and the same may be said of the labellum, enlivened at the base with its pale yellow or lemon cup-like crest or tubercle. This form, introduced in 1865, seems to be altogether different from O. Warneri, introduced in 1844, and described as having yellow and crimson flowers borne on a few-flowered raceme; petals smaller than sepals, and a cuneate two-lobed labellum.

CYPRIFEDIUM GODEFROY.E. — This is a new Cypripedium, the native country of which has not been revealed, and the introduction of which has been attended with inconvenience and disaster, the narrative of which, as well as an engraving, are given in the December number of the Orchidophile. It is described as intermediate in character between C. niveum and C. concolor. The lip is like that of the latter species. The flowers are white, spotted with chocolate spots. The plant is reputed to grow on limestone rocks, shaded on the mountain on which it grows during the morning, but is afterwards exposed to the most intense sunlight. The stock has been purchased by Messrs. Veitch.

ORCHIDS AT THE VICTORIA NURSERIES, HOLLO-WAY .-- Here, among the forerunners of a finer display that will follow-for many things show wonderfully well in sheath and bud-we noticed the seldom seen Sophronitis violacea in flower, in a small suspended basket hung near the roof. They are evidently getting to know the wants of this hitherto difficult bloomer hetter, and we may hope to see more of it in collections. The vividly coloured Masdevallia ignea gigantea had several of its flowers open; this will be a conspicuous object when larger than this plant was amongst these fireflies of the Orchid race. There were flanking the doorway in one of the houses two beautiful large plants, just going past their best, of Coologyne cristata, the largest of them about 30 inches in diameter, and carrying between 200 and 300 flowers. Lighting up a bank of flowerless plants was a nice The Vandas are showing piece of Ada aurantiaca. here grandly, so far as bloom-buds at present indicate, but a piece of the Dalkeith variety of V. tricolor had a fully expanded raceme of bloom open which displayed that beautiful densely spotted hybrid form to perfection. The everblooming Odontoglossums were seen in many varieties; O. tripudians, than which few are prettier, had two moderate-sized racemes open, as had O. cristatum and O. maculatum. The charming gold and brown in Oncidium Forbesii was very telling when seen in contrast with the ivory whiteness of the Odontoglots in this house, notwithstanding there was but one spike of it amidst scores of the others. Odontoglossum cariniferum was also in the cool-house in fine bloom; the modest beauties of this easily grown kind, which has the property of lasting in flower for several months in succession, making it a desirable variety. The favourite Odontoglossums, Hallii and gloriosum, had each several spikes of their fine blooms open. O. pulchellum, so desirable for a winter display, was also showing its spikes here and there in this house. Lycastes of various varieties were to be met with in different houses, and were to be seen in flower from the richly coloured L. Skinneri purpurata through varying degrees of brightness in the Skinneri section, to the pale creamy L. lanipes, of which several were in bloom. Cattleya Percivaliana bad withstood the baleful influence of fog better than others of this genus, or had opened some few days later, as it had several fresh-looking blooms open. On a strong plant of Cattleya Trianæ tyrianthina seven sheaths were showing themselves. The pretty miniature Orchid, Comparettia rosea, was in flower in an elevated position; this is another species that may be relied on for late autumn and winter flowering, if not subjected to that deleterious drying off during the resting period. Another useful white flower, and well adapted for most purposes, was seen in Calanthe nivalis, almost, if not quite, the latest bloomer amongst Calanthes. A few early flowers had appeared on Cypripedium villosum, and on two of newer intro-duction, C. Meirax and C. melanophthalmum, and on C. calophyllum; and a few blooms of Dendrobiums rewarded the visitor in D. luteolum (a pale primrose), D. primulinum, and the gold and white blooms of D. thyrsiflora. D. Ainsworthi was also conspicuous by its richness of claret colour among the paler blossoms around it, wanting foliage only to make a perfect setting for its plentiful crop of flowers.

FRUITS UNDER GLASS.

VINES .- Although the weather at present is favourable to early forcing, so far as artificial heating is concerned, on the other hand its almost continual duluess is by no means helpful to the forcing gar-dener. The foliage and wood of Vines forced in sunless weather are always unsatisfactory, showing a great want of robustness, and where they are in this condition careful management in airing and damping must be exercised on the return of sunny days to prevent scalding; but when once they are inured to more sunlight it is surprising how quickly improvement sets in. During the time the Vines in the early house arc in blossom maintain a light, warm temperature, and if the tying and stopping are well forward deler the work on them until they have blossomed. If quality is wisely valued, be careful not to over-crop, and lose no time in commencing to thin the berries after they are large enough to handle. The system of not growing many varieties in the early house is a good one; the Black Hamburgh should be the one principally planted, it being the best for the purpose, as it both sets freely and may be thinned safely at an early stage. Madresfield Court is another black Grape of excellent quality, which sets well under similar culture, and may be grown with it to give variety in the early house. As soon as the first thinning is finished give the inside border a good mulching of cow and horse manure, and in watering, liquid manure should be administered if the Vines need it, but not otherwise. The strength of the shoots and texture of the foliage are generally a safe enough guide in this matter, and, as a rule, they do not require it for the first few years after being planted. Follow on with disbudding as required in successional-houses, and when the ouds are well advanced syringe overhead in bright weather, and then once daily early in the afternoon, and increase the warmth as the shoots lengthen. In the Grape-room look over the bunches and remove decaying berries with regularity, keep the bottles filled with rain-water, and make use of fire-heat when necessary to expel moisture.

MELONS,-Plants intended for the first crop will have been shifted from their seed pots into 32's, and preparations should now be made for planting them in their fruiting quarters; small well-lighted houses or pits provided with adequate means of heating are the best structures for the purpose. Presuming these are at command they should be thoroughly cleansed and at command they should be intologist, or classed and a bottom-heat of 80° to 85°, either from pipes or fermenting leaves, secured. The soil producing the finest fruits is a heavy turfy loam from an old pasture, cut and stacked at the end of last summer, which will now be in a proper condition for Melon growing, and will not require the addition of any other substance. Supposing a turf stack of this sort is at hand, a portion should be cut down, and be coarsely broken up with forks. It should then be placed in the form of a ridge loosely thrown together, under the lower part of the trellis, so as to be the more readily warmed and aërated; and when warmed through it should be made quite firm by ramming, an important point of practice, as then the plants make short-jointed frunful growth, together with great quantities of fibrous roots, and are less liable to canker than when planted in soil that is loose and porous. Before turning the plants from their pots be sure they are moist at their roots, and in planting press the soil firmly around them; arrange them on the centre of the ridge about 21 feet asunder, and see that each is on a mound, so that in watering canker can be guarded against by keeping the soil dry immediately surrounding the stems. Furnish each plant with a stake, and either rub out or nip beyond the first joint all side shoots as they appear before the trellis is reached, but let the main hoots proceed unchecked until they attain the desired length. Keep a night temperature of 65°, with about 10° more in the day-time from fire-heat, and admit air when the suo's heat has raised the temperature to Soo, and allow it to run up to 90° or more, with additional ventilation; close early, and at the same time syringe freely overhead on sunny days. Where Melons are fruited io pots keep them plunged in fermeeting leaves, and on no account let them suffer from want of water at their roots. At intervals of about three weeks sow seeds singly in 3-inch pots for successional crops, using a compost of loam mixed

with leaf soil, and when the plants appear keep them plunged in bottom-heat near the glass.

PEACHES AND NECTARINES .- Continue to fertilise the blossoms of late-flowering sorts, and when the blossoms drop syringe the trees gently over with tepid water twice a day when the weather is favourable; but by no means allow the young fruits to remain continually wet. Endeavour to maintain a growing atmosphere by keeping the surface of the borders, &c., damped; and still keep low night temperatures—55° will be sufficient while mild weather continues, but 50°, or a little lower, should frosty weather ensue. Fumigate immediately greenfly is seen, and should red-spider appear so early, repeatedly syringe the foliage on both sides. vere with disbudding, which is one of the most important operations in Peach culture, and to carry out which properly carefulness and forethought are both necessary. It should at all times be done gradually; the young shoots on the upper and lower surfaces can, as a rule, he all removed first, while those that are intended to form the tree, or to be laid in to carry the succeeding year's crop, should be selected from those that are most suitably placed on the sides of main shoots. Eudeavour to perfect the form of the trees, and to secure an equal distribution of fruitful wood over every part of them, and where there is likely to be a deficiency of foliage form spurs by pinching out the points of shoots. In the successionhouse, that will be following on closely after the first, the buds will be swelling and showing signs of colour even where no artificial heat has been used. Do not neglect to efficiently fumigate trees when in this condition, and treat them as directed for the early house. T. Coomber, Hendre Gardens, Monmouth.

PLANTING AND SOWING .- Peas and Beans which were sown in pots and boxes the first week in January, and subsequently hardened off, will now be ready for planting (weather permitting of the work being done) in a warm border. They should be carefully turned out of the pots-disturbing the balls of soil and roots as little as possible in doing soand planted in rows 4 feet apart (if dwarf-growing varieties), and 9 or 12 inches asunder in the row. A little soil should be drawn up on either side of the rows, after which lime and soot should be strewed on each side of the rows, and some pea-stick spray stuck in to support the haulm. The spray should be put sufficiently close to the Peas to keep them in an upright position, and then some Spruce boughs stuck firmly in the ground on either side the row sufficiently close to protect them from frosts and cutting winds. As the Peas progress in growth and become inured to the weather the boughs should be gradually removed, which will prevent the Peas making a weakly growth. And with this object in view it will be advisable in favourable weather to remove the boughs during the day, replacing them at night when frost is apprehended.

Beans should be transplanted singly in rows 4 feet apart, and from 10 to 12 inches in the row, and have a small stick put to each plant for support. Draw a little soil up to the plants on either side, then a line of lime and soot in the same direction to protect the plants from the attacks of slugs. Another sowing of Peas and Broad Beans of the following or kindred varieties should be made next week—viz., Laxton's Supreme, John Bull, Carter's Telephone, and Carter's Stratagem Peas, and Leviathan and Taylor's Broad Windsor Beans. These - which should be sown thinly in the row, as by so doing better results will be obtained — will be found suitable for all purposes. Should the present open weather continue another planting of Cauliflowers and Cabbages should be made, in the manner described at p. 83. A planting should now be made, I foot apart each way, of young Lettuce plants that were pricked out in the autumo in a warm border, over which a dusting of lime and soot has been previously strewn. For this purpose the plants in every other row in the nursery-bed above referred to should be taken up as required, which will then leave a space of 9 or 12 inches between the remaining rows, which again should be thinned in the rows as the plants are required.

ORDINARY WORK. — Pitted Potatos should now bave attention in the way of sorting and disbudding, and Jerusalem Artichokes should be taken up, where not already done, and be sorted and housed. If not already done, stake autumn-sown Peas, and make the soil firm about the collars of any Cabbage or Broccoli plants that may have been loosened by the wind.

FORCING DEPARTMENT.-Transplant young Lettuce plants, as soon as they are large enough to handle, into a bed containing a gentle bottom-heat; and earth-up Potatos on hotbeds as they require it, with soil of the same temperature as that in which they are growing, and give air freely on all favourable Thin out young Carrots growing on hotbeds to 2 inches apart in the rows, after which they can be thinned as required for use. Tomato plants which are intended for fruiting in pots should be shifted into larger-sized pots as they are found to require more room at the roots, using good loam and well rotted manure, in the proportion of about threeparts of the former to one of the latter, with a sprinkling of charcoal, and again place them near the glass in a forcing house, where the night temperature ranges from 50° to 60°, and by day from 65° to 70° by fire-heat, and 10° higher with heat; and endeavous to obtain a short-jointed consolidated growth. Maintain a good supply of Mint, Tarragon, Mustard and Cress, also French Beans. The latter should be syringed twice a day (more or less frequently, according to circumstances) as a means of keeping the plants free from red-spider, to which they are usually subject when grown in artificial heat. A night temperature of from 50° to 60°, and 10 higher by day with fire-heat, running up 10° or 15 with sun-beat, and plenty of atmospheric moisture at shutting up time, will be congenial to the requirements of the plants. Succession crops of Beans should have the points of the shoots pinched out to make them branch, and be top-dressed with rich soil.

MUSHROOMS.—Collect horse-droppings, and keep them spread out thinly in a dry shed for a few days. With such materials make up succession-beds, as soon as the necessary quantity of droppings for that purpose have been cullected, beating the materials as firmly together as possible. In making-up the bed a dipping thermometer or "test-stick" should be inserted, and when the heat has declined to 75° or 70° it may be spawned, inserting pieces about half the size of a hen's egg under the surface of the beds about 6 inches apart, and then covering with half an inch of such droppings pressed firmly down. The surface of the bed should then be covered with the same thickness of soil consisting of two parts of light loam, one part of garden soil, and one of cow-dung, thoroughly mixed to the consistency of mortar, which should be laid on with a trowel or float, finishing off with a perfectly smooth surface, which effectually cases the bed, thereby preventing the ammonia, which is necessary for the production of a good supply of Mushrooms, from escaping. A rather moist atmosphere, with a temperature of from 50° to 60°, should be maintained in the house, but I need hardly observe that so long as the Mushrooms grow sufficiently fast to meet the demand for them, it will not be necessary to turn the hot-water on in the pipes, or to apply atmospheric moisture in the house, further than damping the surface of the beds with tepid water in the event of their getting dry. As a rule, woodlice are very troublesome and destructive at least and the readlest and at the same time most efficient way of eradicating these pests is to pour boiling water out of a long-spouted watering-can along the sides and cods of the beds, especially between the latter and the walls, where they congregate as soon as daylight is let in upon them, and which is the best time to apply the boiling water. H. W.

Plants and thein Sultune.

GENERAL REMARKS.—It is a good custom thus early in the New Year to thoroughly well consider our plans and arrangements for the coming season. In doing this it is as necessary to reflect on the failures, as it is on the successes, of the past seasons. All of us by close observation have something to learn in the wide field of horticulture, of which plant culture is no exception. It has often struck me that there is but a slight step between success and failure in many instances. Cases in support of this are constantly cropping up, and failures occurring, which at

the moment seemed inexplicable, unless all details of treatment are well thought out and reviewed. mistakes have been made in the past, lessons of experience should have been learnt from which we ought to derive benefit in the future. Nil desperanaum is, we think, a very good motto for a gardener to remember in following his profession. In some few cases our attempts may have been futile, either from want of better accommodation for certain classes of plants, or from undue pressure having been brought to bear on our everyday routine of work. Where any of us have met with success beyond our anticipations, the same should be chronicled for the benefit of less successful cultivators. This used to be the case far more in the past than it is in the present; there are, however, without doubt, many good gardeners who would enlighten us if we could but persuade them to do so.

The requirements of a proper supply of plants for furnishing cut flowers and for decorative uses should be well considered. Certain classes of plants are always indispensable where the demand is great, and may be put down as such. There are also many others which might be brought into prominent notice, say for a few years only, and then be allowed to recede for a time, and some other classes of plants brought forward to replace them. This can easily be done with such plants as are annually raised from cuttings or from seed. We advocate this for the sake of securing a change in some measure from the otherwise too frequent repetition of the same plants season after It is a mistake to overcrowd ourselves with an excess of stock of any given genera. Fewer plants, and those better grown, by reason of having more room to develope themselves, will be by far the best plan in the end, and a saving both in labour and material. It is an error to rely too much on quantity for general effect, when it might be more easily attained and of greater durability, by having due regard to quality instead. If we happen to be fortunate enough to secure a good strike or to raise an extra number of seedlings, it does not follow that all such should be reserved for cultivation. Better consign some of them to the rubbish-heap at once than to grow them for a time and then be compelled to do away with them when crowded out.

SEED SOWING.—Several necessary and most useful kinds of flower seeds should now be sown, such as a pinch of seed from a choice strain of Gloxinias and tuberous-rooted Begonias; both of these will form a good succession to the hulbs of last and previous year's growth. Torenia Fournieri should not be overlooked; it is a valuable and distinct decorative plant, seedlings of which will make nice stuff for the coming summer if raised as soon as possible. Seeds of a good strain of Amaryliis should also be obtained, so that the full benefit of the season may be obtained. Those who grow Aphelandra auranticae. Roezlii or A. nitens will the more readily increase their stock of either from seed, but must look sharp after the same as soon as it is ripe, when the capsules quickly burst and scatter the seed. The comparatively new Impatiens Sultani will now, without doubt, meet with more extended cultivation, as seed can be obtained at a cheap rate. We intend to give it a trial under different conditions this season, and hope to report progress by-and-bye. The stove section of Vincas can easily be raised from seeds; this is the most ready way of securing a stock, and they are well worthy of more extended cultivation. Of foliage plants, the fertilised seeds of Coleus will afford an infinite variety, whilst a packet of seed of Grevillea robusta, if successfully raised, will give a serviceable lot of plants. We find an extra stock of patience is required in raising this plant from seed, as it has often germinated a long time after it has been given up as a failure. Acacia lophantha should also be thought of an early sowing of Mignonette to succeed the autumn stock; in doing so, choose good friable loam and a little mortar rubble with some fowl's dung next the recoks; press the soil, or rather ram it into the pots as firmly as possible, so that the finger will not easily penetrate the soil. A few dozen pots of Rhodanthe maculata and R. m. alba should be sown soon; these will give a good account of themselves when the glut of sprin

and which have been adopted by Baron von

APPOINTMENTS FOR THE ENSUING WEEK.

Feb. 4 | Sale of Lilies and other Roots, at Stevens' MONDAY. Feb. 4 Sale of Lines and Sale of Morsery Stock, at The Nursery, Sale of Nursery Stock, at The Nursery, Rugby, by Protheroe & Morris.
Feb. 6 Sale of Flowering Orchids, Plants, and Sale of Imported Orchids, &c., at Stevens' Sale of Imported Orchids, &c., at Stevens' TUESDAY, WEDNESDAY. Feb. 6 Sale of Imported Orchids, &c., at Stevens'
Rooms.
Rooms.
Linnean Society meets at 8 F.M. Papers to
be read s-r. "On the German of Aulatonion paluster," F. D. Bowert 2,
(Farts): "Kew A. E. Eaton. 3, "Compound Vision of Insects;" B. T. Lowe.
4, "Cyperacem of West Africa;" H. N.
Crustrace;" New A. M. Norman,
Sale of Imported Orchids, at Protheroe &
Morris Kooms.
Feb. 8 Sociation of Comments of Comm THURSDAY,

FRIDAY, SATURDAY. NOT greatly inferior in importance to the

MUELLER, are also noted; but for his purposes M. NAUDIN prefers characters taken from the inflorescence, flowers, and fruit. Singularly enough it is not yet ascertained whether fertilisation takes place before or after the fall of the little cap which at first covers over the stamens and styles. If before, then cross-fertilisation would not occur as a rule. M. NAUDIN, however, suspects that the fertilisation takes place after the fall of the cap, and that much of the variation met with is due to crossed impregnation. This would certainly seem the most probable view, though against it we have to set the opinion of Baron VON MUELLER, whose experience is so large that no one would be disposed to question it unless he felt very secure of his facts. So far as the Riviera is concerned, and the few species there grown, the question as to the self or crossfertilisation surely could speedily be settled, even if it were more difficult to prove actual

hybridity.

As to propagation, M. NAUDIN recommends seeds in preference to cuttings, there being no difficulty in raising the seed in seed-pans under glass in a warm greenhouse or propagating pit. As the seeds are very small they should be covered with only the slightest possible covering of earth. It is not so easy, however, to rear the seedlings during the two or three months of their existence, except in the case of those which have been grown in the open air. If they have to be pricked out from the seed-pan the risk of injury is great. This pricking out is best done early, when the plants have only three or four leaves. They should be placed in small pots, in a compost of vegetable mould, sand, and loam, in equal proportions, and should be placed in a shaded position till they have established themselves, when they must be exposed gradually to sun and air. Injudicious watering is the greatest danger likely to befall them. M. NAUDIN points out that they are naturally plants of a very dry climate, with abundance of clear light. As they grow on the plants should be shifted into larger pots with a larger proportion of loam terre franche, and with good drainage : the pots can be protected in winter if necessary, and planted out in the open the next year (M. NAUDIN is writing of the Mediterranean regions).

The site where the Eucalypts are to be planted should be chosen beforehand, for they admit no rival near them and by their rapid growth make large demands on the soil, which should therefore be deep, though there are some dwarf-growing "scrub" species which do well on a shallow rocky soil.

When it is desired to make a plantation the trees should be planted in lines at equal distances, at first thickly, each tree having a space of 4 square metres-that is to say, there should be 2500 trees per hectare (a hectare is rather more than 2 acres). After three or four years clearances should be made by removing alternate lines of the trees, first lengthwise and after an interval in the opposite direction, so as to leave space between the trees as they grow. Pruning should scarcely be required unless in the case of misshapen trees. At the end of the ten years the number of trees per hectare should be by the means above detailed reduced to 400-500.

Felling may commence after about twenty years, according to circumstances, the trees having by that time acquired a height of 20-25 metres, and a girth at I metre above the soil of 2.50-3 metres.

The profit to be obtained, of course, will vary according to local circumstances, but under ordinary conditions a very satisfactory result may be counted on.

For the most part the Eucalypts are trees of warm temperate regions, where the winter is

mild, the spring rainy, the summer hot and dry. Very few of them are found in the tropics. Some of the Tasmanian species, such as amygdalina, coccifera, or some from the Australian alps - E. Gunnii, coriacea, polyanthema-may succeed near the sea in Western Europe. Some species are limited in distribution by soil-characters, some being found on sandstone, some on basalt, granite, or limestone. Incidentally M. NAUDIN speaks of the value of the flowers as food for bees.

The culture of the Eucalyptus in Southern Europe only dates from the last quarter of a century, but the trees are now to be counted by hundreds of thousands. Without pledging himself to any opinion as to any special virtue in Eucalypts, such as has been claimed for them, M. NAUDIN points out how valuable trees are as sanitary agents, and especially in countries like some parts of Italy, Algiers, and Turkey, where the indiscriminate felling of the forests has rendered the country a desert. What a melancholy spectacle for the traveller in these countries, formerly flourishing and deeply populated, to see them now barren, reduced to their rocky skeletons, or with their plains alternately scorched by the sun, or transformed into pestilential swamps. The remedy is now known, and it is not beyond the power of a civilised Government to effect it in time by means of replanting, and a proper system of forest conservancy. The condition of Algeria, which M. NAUDIN has studied for himself, leads him to advocate replanting there on the largest possible scale, in spite of the inevitable cost and difficulty of the proceeding. Various Oaks, Abies Pinsapo, Pinus halepensis, Pistacia atlantica, &c., form the natural timber of the country, but these have been recklessly destroyed, meanwhile timber and firewood are urgently needed by the growing population. M. NAU-DIN shows how the Eucalyptus globulus will supply in the same period of time at least four times as much timber as an Oak.

With these remarks, with which all who have considered the subject must in substance concur, M. NAUDIN prefaces his detailed description of the thirty-one species which he has been enabled to study from the seedling to the fruiting stage. Descriptions of these are given in Latin, as being serviceable all over the world; and, as we have said, the primary distinctions are based upon the inflorescence, the flower being solitary, or cymose, umbellate, or panicled. Afterwards come characters founded upon the number of flowers in each inflorescence, the distribution of the stamens, the form of the

calyx-lid (operculum), &c.

M. NAUDIN has had many other species under observation, but only includes those which he has been enabled to study from the seedling stage to maturity. We may add that there is a collection of several species represented, of course by small specimens only, in

the Temperate-house at Kew.

CARVOPTERIS MASTACHANTHUS, - In the autumn of last year we received from Messrs, VEITCH a flowering spray of this hardy Japanese shrub, from that rich store place of interesting plants, Combe Wood. The illustration from the pencil of Mr. FITCH (p. 149) will serve to give a general idea of the plant, which undoubtedly is one of the best flowering shrubs. It is hardy at Combe Wood, but we would not from that circumstance infer that it would prove equally so in less propitious localities. The plant is a Japanese shrub, with its leaves covered with a hoary tomentum, like Nepeta incana, and with dense whorls of lavenderblue bi-labiate flowers proceeding from the axils of the upper leaves, thus forming a terminal leafy panicled inflorescence. FORTUNE met with the plant in China, and other explorers have sent it home from Japan, where it is said to grow at the margins of fields, and even on the tops of the mountains. Not many young gardeners would, be a member of the Verbena family, but so it is by many young gardeners would, we suspect, guess it to described by SCHAUER in the eleventh volume of DE CANDOLLE'S Prodromus, p. 625 (1847).

introduction of the Cinchona into India and certain of our colonies has been the diffusion of various species of EUCALYPTUS throughout our colonies and in the South of Europe. In this island the species are too tender to be anything more than curiosities, though E. Gunnii survives the unfavourable conditions of a Kew winter, and E. coccifera has formed a good-sized tree at Powderham Castle, Devonshire, and has even flowered (see vol. xiii., p. 395). But it is to our colonies that the cultivation of these trees is a matter of importance, and it may, therefore, be not inappropriate to call the attention of our readers to a valuable memoir on the species of Eucalyptus introduced into the Mediterranean region, recently published by M. NAUDIN in the Annales des Sciences Naturelles. We have frequently had occasion to allude to the splendid monograph in course of publication by Baron VON MUELLER which must serve as the standard of scientific information on these trees for years to come. M. NAUDIN'S object is more restricted; he confines himself to the species introducedinto Europe, and he studies them from a cultivator's point of view, not from dried

specimens or trees in one stage of growth only,

but from the germination to the ripening of the

fruit. The rich collections of the Villa Thuret

and other gardens along the Riviera have

have then in the treatise before us one of those

botano-horticultural memoirs which are of such

afforded him the means of doing this.

special value to cultivators. One of the first points noticed is the variation in the form of the leaf in the same plant, which is so marked a feature in the species best known in this country, E. globulus. M. NAUDIN points out how the seedling plants of various species differ one from another in this particular. If the trees are pollarded, shoots are produced from near the base of the trunk. bearing leaves similar to those of the juvenile plant, and leaves of this form are often produced without any injury to the tree having taken place. This partial reversion to a previous condition is no bar to the production of blossom, as flowers and fruit are produced on these juvenile looking shoots as well as on those of the adult branches. We have, then, in the Eucalypti the same condition that occurs in so many Conifers, Thuias, Junipers, &c., and to which we owe many of the Retinosporas of our gardens. the latter class of plants the disposition of the breathing pores, and the production of the leaves on branches of different character of growth, point to a difference of function, which is not hinted at by M. NAUDIN in the case of the Eucalypts, although he suggests the possibility of the diversity in form having been due to cross or hybrid fertilisation.

M. NAUDIN passes in review the "characters" that have been proposed to distinguish the species, such as the form and nervation of the leaf, the size and habit of the tree, some being small, others furnishing trees which exceed the famous Sequoias of California in height. characters afforded by the bark of the full-grown



Fig. 30.—caryopteris mastachanthus: hardy shrub: flowers lavender-blue. (see p. 148.)

— THE PHYLLONERA LAWS,—The Editor will be obliged if those nurserymen who have suffered loss or inconvenience in exporting plants to the Continent or colonies, owing to the operation of these laws, will communicate with him before Tuesday next.

CHATSWORTH.—Mr. BANNERMAN writes to say that he has not been engaged to go to Chatsworth, and that we have been wrongly informed on the subject.

— INTERNATIONAL POTATO EXHIBITION.—
Through a slip of the pen, the writer of the note
under this head, that appeared last week, made a
mistake as to the number of sets, or sample tubers,
that should be sent for trial at Chiswick. There
must be at least twenty sets or samples of each soit,
and not more than eight sorts will be received from
any one exhibitor.

- THE WEEK .- The horticultural event of the week which has caused the greatest sensation is probably the gale, which blew all over the country on Saturday last. Hitherto, although its force is stated to have been greater than in most similar cases, we have not heard of damage in proportion. Fortunately the branches were not laden with snow or foliage .-We are glad to find that the Nottingham folk are continuing their agitation against the mischievous proposal to convert the allotment gardens of that town into "eligible building land," surrounding a park. The value of open spaces in towns is beginning to be understood, and the value of gardening as a wholesome and profitable recreation might well be studied by our City magnates. The Garden Holder's Asso-ciation of Nottingham, among various proposals, recommend that "the Corporation should make permanent provision for gardening, and set apart as many gardens as possible, including the Hunger Hills, as permanent gardens." They further propose that in those cases where it is requisite to convert the present gardens to other purposes, due notice and adequate compensation should be given.—The Worshipful Companies of the City of London are devoting their energies towards carrying-out in spirit, if not in letter, the designs to fulfil which they were originally We have before us an essay on "profitable founded. fruit-farming" by Mr. CHARLES WHITEHEAD, written for the Worshipful Company of Fruiterers, at the suggestion of the late Lord Mayor. This matter of fruit growing requires to be considered with great care before any large amount of capital is embarked in it, else disaster is only too likely to befal the incautious planter, as has happened in more than one instance to our knowledge.-This reference to fruit trees induces us to allude to the letter of Mr. HARRISON WEIR in another column. Mr. WEIR is jubilant in the belief that he has found the cause of canker, and, moreover, can apply the right remedy in the form of We do not controvert our correspondent's Gishurst, statements, but we are of opinion that we require to know a great deal more on the subject before we can afford to be at all positive on the matter. First, we require an exact definition of what canker is, for to our knowledge gardeners mean different things by the Mr. BERKELEY, whose knowledge same word. on the matter is at once more comprehensive and more exact than that of any one else, refers it to "constitutional depravity," the indications of which may be made appparent by various causes. In support of Mr. WEIR's theory there is, so far as we know, no direct evidence at present-merely vague statements as to the presence of insects, or as to indications of their presence. Such statements are far too vague to be of any real use. The canker of the Ash has been attributed to insects, and especially to the larva of some Tinea, or allied moth of minute dimensions. The canker of Peach trees has been attributed in America to bacteria; but in no case that we know of has it been satisfactorily proved that the insects or the bacteria, which are undoubtedly present, are really the causes of the disease. They may be merely the scavengers. - We are glad to find that exporters of plants are beginning to inquire whether anything can be done about the Phylloxera laws. The outlook is not hopeful, but it will be a comfortto Editors at least-to have it established whether any thing can be done or no.

— Cydonia Japonica.— From Mr. Lowry, The Gardens, Belmont, Mill Hill, we have received a fine spray of this beautiful shrub, showing to what a degree the unusual mildness of the season has

affected its early blooming. It is seldom that in the neighbourhood of London this shrub is to be found in bloom earlier than the month of March. The particular plant from which the flowers were taken is growing on a southern aspect, and is stated to be four weeks earlier in bloom than it has ever been before. The Cydonias are deserving of more extended culture, not forgetting C. vulgaris, the common Quince, than which no finer shrub in flower and leaf is to be found in our gardens. C. japonica and its varieties, C. alba, C. princeps, and C. Maulei, make capital hedges in sunny localities, bearing the shears well, and blooming densely under the treatment, C. japonica being then a veritable fire shrub.

- WEATHER ASPECTS, - The recent stormy weather has sufficed to let us know that with all our congratulations over the mildness of the season we are yet far from being out of the wood. The clerk of the weather has for some time been in an admirable humour, and given us an exceedingly pleasant time; so much so, in fact, that we were in danger of forgetting that functionary's office. We may, therefore, take it for granted that the clerk in the recent boisterous ebullition of wind and rain has just given us a hint that he is still "boss" of the meteorological department, and we his dependents. No doubt the storms have done much mischief, but then coming at a time of the year when Nature is at rest, much less mischief is done than has been seen at some previous outbursts of Boreas. We see no reason, however, to assume that the recent visitation indicates a long spell of bad weather, or a severe close to a so far mild The more violent the outburst, as a rule, the winter. less prolonged are its effects; therefore we hope still for some of that pleasant weather which has left the now departed month of January famous as one of the most pleasant of its name. Foresters, and, indeed, arboriculturists generally, may well discuss the effects of storms upon forest trees, especially at a time when becoming a subject of such exceeding interest. Of course, storms often do great mischief in laying noble trees low, but perhaps the majority of these are safer down than up. What is worth enquiry is to learn whether on robust growing timber the lively action of the limbs, promoted by wind-storms, is beneficial or otherwise.

MR. JACOB ROSE, who for so many years has been gardener to Admiral ECERTON, St. George's Hall, Byfleet, has, we regret to hear, been compelled through illness to resign his position as from March next; and from the same cause he has been compelled to retire from the committee of the Gardeners' Royal Benevolent Institution. Mr. Rose, by his manly, straightforward character, has endeared himself to a great many members of the gardening fraternity, who will be sorry to hear of the misfortune that has overtaken him.

THE INTERNATIONAL FORESTRY EXHIBI-TION-SITE FIXED .- It has now been definitely settled that the forthcoming International Exhibition of Forestry will be held within the grounds of Donaldson's Hospital, Edinburgh. The exhibition building will be erected in the park in front of the hospital, while the outside exhibits will be shown on ground immediately adjoining, which belongs to the Heriot Trust. The Secretary of State for the Colonies has authorised a grant of £100 to the colony of Dominica, to enable it to take part in the exhibition. Sufficient time has not elapsed for answers to be received from all our colonies, and as yet the Governor of South Australia alone has responded from Australasia. Every wish, however, is evinced in all the replies that have been received to have the colonies suitably and amply represented. The committee have received an offer of some models of forestry huts from Denmark, which has been accepted. It is hoped that builders of timber bridges will show specimens of their workmanship, as we understand that much difficulty is experienced by landed proprietors in getting a good, useful, and ornamental bridge at anything like a reasonable cost. The date fixed for the open-ing (July) seems rather late, but it will be better to have everything in order than to open prematurely, as exhibitions of this kind are wont to do.

— EUCHARIS AMAZONICA.—Some very fine specimens of this most useful flowering plant can now be seen at Harefield Grove, near Uxbridge, the residence of GEORGE WEBSTER, Esq. They are in 16-inch pots, and are fed with soot-water, and twenty

or more strong flower-stems can be counted on each. The plants were repotted in June, and allowed to rest until November, when they were pushed into growth, and as soon as they began to put forth new leaves soot-water was given to them, and, as above stated, is being liberally supplied. It is seldom that any one sees such large and vigorous specimens carrying such marvellous heads of bloom. Mr. Goucit, the head gardeoer at Harefield Grove, proceeds upon the principle of giving gentle shifts, not more than an inch or so at a time; and his practice is, as soon as the bulbs touch the side of the pots to give a shift. The Eucharis is largely grown here, as Mr. GOUCH depends on it for cut flowers, and there are many plants in various stages of growth, including a young stock of a highly promising character.

— DISEASES IN THE VEGETABLE KINGDOM was the subject of the paper read by Mr. BRUCE FINDLAY at the last meeting of the Manchester Horticutural Mutual Improvement Society.

THE PIEPUL. — The following interesting details respecting the Peepul (Ficus religiosa) are copied from a letter in a recent issue of the Daily News. From this letter-one of a series entitled " A Journey Round the World," from the travelling correspondent of the Daily News, written from from the travelling Benares, which is not only the holiest, but also the oldest city in India - a vivid idea may be gained by non-travelled readers of certain phases of Indian life "Close by here, too, is a more than usually sacred growth of the Peepul, a patriarchal tree whose once stalwart limbs, drooping under the weight of farspreading boughs, were supported by a block of solid maronry built under them. Being Saturday an everchanging procession of grave elders, matronly women, young men and maidens, were walking round and round the tree, chanting a low strain. Every time they passed a particular point in its circumference threw on it with their hand water taken from the Ganges and carried in their lotas. Some varied their performance by throwing Marigolds or grains of Rice. It seemed a particularly dull game of follow-my-leader, but it is a serious religious function, and good Hindoos would not see Saturday's sun go down till they had walked 108 times round the Peepul tree, laved its trunk with holy water, or cast upon it some offering of food or flower. A goat had discovered the richness of the land, and, climbing up the masonry, browsed upon the flowers, whilst the pigeons coming down in swarms pecked up the Rice, nobody saying them nay," In the "North" Gallery, at Kew, picture No. 282 represents a Nepalese temple and Peepul tree, with blue pigeons, which are sacred to CHRISTNA, bathing in the foreground. No. 329 is another representation of the Peepul tree. The Hindoos hold the Peepul sacred, in the belief that their god VISIINU was born among its branches. From GARDNER's Ceylon we learn that the Peepul is held in great veneration in Ceylon, and in the Cingalese language is called Bogaha, or Tree of Buddha. It is accounted the most sacred of trees, and is held in such estimation in the district of Kandy that the form of its leaves is only allowed to be painted on furniture employed exclusively for the gratification of the king. tailed leaves are skeletonised, varnished, and painted by the Chinese. Specimens so treated may be seen in the No. 1 Museum at Kew; living plants, too, are to be seen in the Palm-house and elsewhere in the same establishment.

- ITEA VIRGINICA is, from a gardening point of view, a very desirable shrub. It is a member of the Saxifrage family, and is worthy of a place even by the side of the showiest shrubs furnished by that order, one which must hold a high place in the estimation of the horticultural world, seeing that it includes such deservedly popular garden plants as the Ribes, Hydrangeas, and Escallonias, &c. Itea virginica has been known for above a century in British gardens, having been cultivated as far back as 1744 by Archibald, Duke of Argyll, to whose merits as a gardener Collinson, a great gardener himself, pays the following tribute :- "The Duke of ARGYLL, on the 15th of April, 1761, died as he sat in his chair, my honoured friend, and great patron of all planters, aged 79, a very hearty man of that age. In the year 1723 4 he took in a part of Hounslow Heath to add to a little farm, and began planting by raising all sorts of trees and shrubs from seeds from our northern colonies, and all other parts of the world. He had the largest collection in England, and happily lived to see what a surprising maturity they had arrived to in thirty-seven or thirty-eight years. Great was his benevolence, for he gave to every one to encourage planting, and raised plants on purpose to oblige the curious at this seat of his called Whitton. He had a fine collection of rare birds and beasts; he was a great chemist, natural philosopher, mechanic, astronomer, and mathematician. He was a wonderful amiable man, plain in his dress, without pride or vain ostentation; his library was scarcely to be equalled. He was forty-one years old when he began to sow seeds for his plantations." The Itea succeeds best in damp peaty soil, grows from 2 to 5 feet in height, and produces a profusion of upright racemes of small white flowers about June or July. This shrub derives its name from the Greek for "Willow," which it somewhat resembles in its mode of growth.

RHODODENDRON ARGENTRUM, - In the Winter Garden, Kew, a large specimen of this magnificent Rhododendrom seems to bid defiance to short days and cloudy sunless skies. The tip of every shoot, with its radiating clusters of leaves, is laden with flowers in various stages of progressive development. In bud these flowers exhibit a rosy lilac hue, but when fully expanded they display an interior that is nearly white, traversed with longitudinal bloodpurple veins. The campanulate corollas are of great size, and more or less numerously produced in a truss, while the orthodox number of stamens (namely, 5-10) that prevails amongst Rhododendrons generally is exceeded in this instance, as well as in several oth Himalayan species. This is ooe of the many noble types collected by Sir J. D. HOOKER in the Sikkim Himalayas. There is a figure of it in HOOKER'S Rhododendrons (9), and a painting (No. 248) in the " North" Gallery at Kew.

—— SEMPERVIVUM HOLOCHRYSUM, —A good many Sempervivums are tolerably well known and pretty largely grown for the summer decoration of the flower garden. S. tabulæforme and others of the Canary Islands and Madeiran species are frequent in gardens; but the shrubby ones, as a rule, are not allowed to develope themselves so as to show anything like their true character. A large group of these interesting plants are always to be seen in the Succulent-house (No. 5) at Kew, and in addition to the differences in leaf form, some are nearly always to be found in bloom. Pyramidal panicles of golden-yellow flowers produced at a dull season are by no means to be despised, and the Sempervivums are very easily grown. The species mentioned at the commencement of this note has been in flower for some time at Kew. The Sempervivums, as some of them grow in their native habitats, are beautifully represented in the "North" Gallery at Kew, in picture No. 34.

— LIVISTONA AUSTRALIS,—In private establishments it is seldom we have the pleasure of witnessing these noble types of vegetation in flower, as number, and not size, is the usual desideratum there. A tree in the Palm-house at Kew has been flowering for weeks, and the flowers are conspicuously more ornamental than those of its congener, L. chinensis, flowering close by. It is, moreover, the tallest tree in the house, and distinctly shows its leaves in the uppermost dome or section of the building. The much branched spadix and flowers are of a bright straw-yellow colour, while the more slender and ultimate branchings hang about in a graceful manner. In a wild state it is one of the tallest of the Australian Palms, and a conspicuous feature of the vegetation where it occurs. There are paintings in the "North" Gallery at Kew (Nos. 549 and 582) showing the habit and general appearance of the tree.

— ORCHID SALES.—At Messrs, PROTHEROE & MORRIS' sale of flowering Orchids on Tuesday there was a large attendance of visitors and buyers, and the competition for some of the specimens was unsually good. The more important lots sold as follows:—Lælia anceps var., £10 10.; Oncidium superbiens var., £18 18s.; Lycaste Skinneri alba, £22 1s.; Odontoglossum crispum Dormanianum, £19 18s. 6.d.; Cypripedium Wallisi, £19 19s.; Odontoglossum Alexandre, £15 15s. At the usual weekly sale on the previous Friday two more large masses, each consisting of one hundred bulbs or more, came under the hammer, and realised respectively £105

and £126. At the same sale Cattleya Trianæ alba was knocked down for 12 gs.

— A GIGANTIC FLOWER. — The remarkable Aroid, Godwinia gigas, is now fast developing its immense flower in Mr. WILLIAM BULL's establishment, King's Road, Chelsea. This extremely rare plant was discovered by the late Dr. SEEMANN when collecting for Mr. BULL, on the Chontale Mountains, Nicaragua. This specimen is quite unique. It flowered once before in this country, in 1872—the bloom or flower spathe them measuring I foot II inches in length, and I foot S inches in width—truly gigantic dimensions for an individual bloom. The plant was illustrated in our volume for 1873, p. 72.

- IRIS STYLOSA. - As another instance of the mildness of the season, attested by numerous correspondents from many parts of the country, it may be mentioned that this winter-blooming Iris has been opening beautiful and fully developed flowers for some time in the ordinary collection at Kew. This occupies a narrow border alongside a wall with an eastern aspect, and no other protection has been There is a figure of this species in DESFON-TAINE'S Flora Atlantica, I., xl., 5. It is recorded in gardening books as having been introduced from the island of Corfu, although an eminent authority is of opinion that it is confined to Algeria alone. blue flowers, enlivened with feathered markings on the lower part of the segments, is very welcome outof-doors, although we frequently see it grown under the protection of a cool frame.

THE NEWCASTLE - UPON - TYNE FLOWER SHOWS are announced to be held on April 23 and 24, and July 23, 24, and 25.

- THE WEATHER, -- General remarks on the temperature, rainfall, and duration of bright sunshine, for agricultural and sanitary purposes, during the week ending Jan. 28, 1884, issued by the Meteorological Office, London :- The weather has been in an extremely unsettled, boisterous, and rainy condition in all parts of our islands. Snow has fallen in all the more northern districts, and in many places some sharp thunderstorms have been experienced. The temperature has been about equal to the mean in "Scotland, W.," and a little below it in "Scotland, E.," and " Ireland, N.," but in all other districts it has continued above its normal value, the excess over central, southern, and eastern England being 4°. maxima were recorded either on the 22d or 23d, when the thermometer rose to 48° in "Scotland, E.," and to between 52° and 55° in most other districts; but in "England, E.," and "Ireland, S.," as high a level as 56° was reached, while in " England, N.W., the maximum was 57°. The minima, which were registered on the 26th or 27th, varied in most districts between 27° and 32°; in "Scotland, E.," however, the temperature fell to 25°, and in "Ireland, N." to 19°. The rainfall has been considerably more than the mean in all districts, Bright sunshioe, though still very deficient, shows a slight increase in duration in most places, the percentages ranged from 12 in "England, S.W." to 25 in "Scotland, E." Depressions observed .- During this period barometric pressure has been subject to very great and remarkable changes, two very deep and important depressions having crossed our islands from the westward. The first of these travelled with great rapidity over the south of Scotland, the North Sea, and Denmark during the 23d, bringing violent gales on all our coasts-from S.W. as it approached, and from W. or N.W. as it moved away. The second disturbance, which travelled in a north-easterly direction across Scotland on the 26th, was very much deeper, and during its passage pressure decreased with excessive rapidity. The centre appears to have passed near Aberdeen, where the barometer at midnight regis-tered the abnormally low reading of 27.40 inches. The depression occasioned south-westerly to westerly gales of very great violence in all parts of our islands, and strong winds or gales over the whole of western

THE BRIGHTON AND HOVE CHRYSANTHE-MUM SOCIETY'S SHOW is fixed for November 11

— GARDENING APPOINTMENTS. — Mr. R. WOODFINE, Hally Foreman at Kilkenny Castle, the seat of the Marquis of Ormonder, as Gardener to C. P. Boyd, Esq., Emsworth House, Hants.

Home Correspondence.

An Iris Garden,—I lately had the pleasure of visiting a really scientific garden, the capital of Irischom; its situation is known to hardy plant growers, but as it is hardly a place for the merely curious visitors I need not name it. The owner is well known for his high scientific attainments: these have obviously reacted on his garden. The natural soil did not seem very favourable, nor the climate, except that the garden being on a hill in a very flat country, it is somewhat above the damp, I went as an ignoramus in Irises. Some species, especially Iris Ræmpfert, grow well in our Oakwood experimental garden, but this is "plan par bonkur gue par sagesse"—we had exactly the right soil and damp situations, and therefore they thrive; other species, mostly owed to the kindness of friends, are, after being watched, and under advice, moved about till they seem happy. But Iris growing at S—is very different from this. There the exact requirements of all species of soil, situation, moisture, and dryness have been studied till they are known, so that any new arrival has a congenial home at once ready for it. Some of the mechanical contrivances are very good; two especially struck me—one a dark frame for seeds in a greenhouse; another a frame made so as to give complete shelter or full open air, with shelter from wind, at will; this last, I think, might be useful in Lily growing. Very few species were in bloom—these beautiful ones; but there was plenty to learn from the growth. In going over a garden like this some thoughts force themselves upon you:—That always growing number of influential amateurs who make hobbies of their gardens will not long be content without a powerful, prosperous, independent Noyal Horticultural Society, with a paid secretary, like the Society of Arts. That gardening seems the natural and most satisfying rest for the highest order of minds: this struck me lately, when a note from my friend, Professor, now Sir Richard Owen, showed that long life had not the least blunde de a thousand pities if al

Nepenthes Rajah,—Mr. Moore was growing this distinct Pitcher-plant very well in the cool Orchid-house at Glasnevin, when I was there in September, It was close to the glass with some of the Masdevallias, Considering its cool habitat in its mountain home in Borneo, where it luxuriates in a humid atmosphere, it was but reasonable to expect that the cool-house would suit it best, "F. Donglas, Great Gearies, Illord.

At Daylesford House, Chipping Norton, the large plant of Rhododendron Nuttalii is again showing between forty and fifty trusses of its magnificent blooms. This is the finest variety I ever saw, the individual flowers being much larger than is usually seen. I understand the plant was imported direct from its native habitat. When in flower it is one of the finest plants for conservatory decoration that it is possible to have, and one that ought to be in every large conservatory, both flowers and foliage being very fine. In the stove I observed a plant of Stephanotis floribunda, in a 16-inch pot, with flourteen of its large egg-shaped fruits, and a quantity of Calanthe Veitchii, the spikes being 42 inches in length, and bearing from forty-five to fifty flowers. I never saw a finer lot, the flowers being so abundant on, comparatively speaking, short flower-spikes. The same remark will apply to the Euphorbia fulgens, in 5-inch pots; the plants averaged 30 inches in height, with wreaths of bloom 18 inches in length. The Poinsettia pulcherrima was equally well done, stiff, sturdy plants, with trusses 18 inches in depth. The Poinsettia pulcherrima was equally well done, stiff, sturdy plants, with trusses 18 inches in depth. The Poinsettia pulcherrima was equally well done, stiff, sturdy plants, with trusses 18 inches in depth. The Poinsettia pulcherrima was equally well done, stiff, sturdy plants, with trusses 18 inches in depth. The Poinsettia pulcherrima was equally well done, stiff, sturdy plants, with trusses 18 inches in depth of the cultural skill and ability displayed by Mr. Otley, the courteous and able gardener at Daylestord. F. K. Fetch.

Ourisia coccinea.—Many complain of the failure of this bright-flowered hardy plant, and I have been amongst the number, having tried it in many varieties of soil and situation with indifferent success. To those who wish to know under what conditions it may thrive, the following extract may be interesting —it is from a letter written to me by the owner of a gardeo near Glasgow, situated on such low ground that the soil is sometimes washed out of the flower-beds by floods:—"I learn with wonder your failure with Ourisia coccinea. Here it grows very freely; and at Kirn, 25 miles down the tea-coast, it flourish;

like a weed; but if an old bell-plass is placed over it there in winter, it doubles the bloom the following summer. The soil there is stiff clay, over which sand has been freely sprinkled yearly." C. Wolley Dod, Edge Hall, 7 gan. 29.

"Beauty of Appropriateness."—Reading the short article with the above heading in the Gardeners' Chronicle of January 19, p. 84, one is inclined to ask, What next? for surely it means far more than appears on the surface. It is a condemnation of the practice on the surface. It is a condemnation of the practice of very many, if not all the gardeners of the present day. It opens up a wide field of contention without giving any specific idea how to remedy the evil compained of. The subject is an important one, for there is no disputing the fact, that much ugliness is recluded thought but the find-man is matching the here is no disputing the fact, that much ugliness is produced through want of judgment in gardening, as well as in all other branches of decorative art. It may be asked, What is appropriate beauty in gardening? Is it to have everything in in its proper place? If so, how many beautiful things must be removed or changed! How often do we see remarks as to the beautiful and interesting rockwork in the Horticultural Gardens at Chiswick. There, then, we have beauty, but the rockwork is inappropriate; yet without the rockwork was to be beautiful flowers growing in the vegetable gardens, and even on the Vine borders: here, again, "beauty of appropriateness" is wanting. Will it be appropriate beauty to have each flower-bed planted of one colour? I had the privilege some years ago to look through I had the privilege some years ago to look through the fine gardens at Enville Hall, Staffordshire; here each flower-bed consisted of but one colour-scarlet, pink, yellow, &c.; I have no hesitation in stating that beauty so inappropriate was never seen—no, not even in the mosaic beds of the present day. We have the righton heart of the reserve the reserve that the second bave the ribbon-border, consisting of five or six rows of plants—red, white, blue, pink, yellow; can anything be more monstrous than to try to can anything be more monstrous than to try to blend the colours of the rainbow with flowers?—
even the sadly maligned mosaic or carpet-bedding is to be preferred before it. Then we have the so-called sub-tropical bedding—some beds wholly filled with ooe kind, say of Cannas, with possibly an edging of some variegated grass. Will it be said filled with one kind, say of Cannas, with possibly an edging of some variegated grass. Will it be said that "beauty of appropriateness" maintains a very honourable position surrounded by so much stiffness? There is still another style of bedding, viz., the mixed, and in which it will be difficult to find beauty of appropriateness" abundant, for here we have a pland or patch of this, that, and the othermany of them beautiful, but ineffective, because of the want of atrapement, and association with unsuitable want of arrangement, and association with unsuitable companions. The increase of taste has but little to do with the banishment of monstrosities in needlework; fashion has transferred it from wool to silk, and cruel imitations are made of flowers and fruit, to say nothing of birds and butterflies, as far removed from "beauty of appropriatenes" as was much of the work of our grandmothers. It is to be hoped that some more able pen than mine will take this subject in hand, and try, if possible, to show gardeners the right place in which to use the good materials. Most gardeners do the best thing they can with the materials at hand, and endeavour if possible to please the taste and satisfy the expectations of their employers and the public, believing that the gardens that afford the want of arrangement, and association with unsuitable companions. The increase of taste has but little to and satisfy the expectations of their employers and the public, believing that the gardens that afford the greatest variety are as a rule the most valuable and magnificent, even if "beauty of appropriateness" be absent from some of their efforts. George Thomson, Knap Hill.

Canker in Fruit Trees,—It is now some time since I first addressed you on this subject. When I last wrote some one replied, saying the canker was caused by frost. My previous letter proved that it was not, so I cared not to notice that letter or to write a rejoinder. For some years I have felt perfectly certain that the so-called canker in the Apple tree was caused by an insect, and did not proceed either from the action of frost or the planting of the trees on wet soil or gravel, which has been so repeatedly stated as the reason. I have said, and I still maintain, that canker has nothing whatever to do with root-action. Observe a piece of the wood that is cankered, where there is a small connecting strip of bark left that swells larger and larger until it is of size sufficient to well supply the branch beyond with all the sap required. If the canker came from disease of the root this would not be the case, for there would be a deficient supply of sap, and therefore no enlargement of the bark he speaks of, is a direct consequence of the supply of water from the root alone? Ed.] Secondly, it could not proceed from frost, because I have found canker on the wood of the year before any frost has taken place. Thirdly, where I have applied Gishurst Compound to a tree I have found that part was un-affected with canker; and, further, when I have found canker just making its appearance I have cout the part, rubbed in some Gishurst Compound, and the place has healed, and in many instances the

bark has grown over. I have taken cankered wood to entomological meetings, shown it, left it for observation, &c., but never yet have I got any information on the subject; and I have invariably found when speaking to gardeners, fruit growers, and others on the subject that not one has entertained my views, and generally I have been answered by a smile of incredulity. This has the more astonished me because, by close observation (to me) it is so apparent that the canker is caused by an insect. I am sorry to say that I have not a microscope (besides which my sight is not so strong as I could wish), so that I have made my observations with a Stanhope lens. With it I have seen clearly that the defects on the branch are the results of the working of an insect; but I have never yet discovered the insect itself. I had hoped that a gentleman of such scientific and microscopical attainments as Mr. Worthington Smith would have carried out, as he is perfectly able to do, such inspection of branches, cuttings, &c., as would not only have proved my assertion beyond a doubt, but that he, with his accurate pencil, would have figured ova, larve, and the perfect insect. I still look for this at his hands. While I have been making these observations for many years another has been doing the same, and in like direction, though quite unknown to myself. This gentleman is that close and accurate observer of Nature, that excellent and truthful naturalist, Mr. Hiam, of The Wren's Nest, Redditch, and to him is due the discovery of the canker insects. This last week I received a newspaper from him, giving an account of a discussion on the subject. I send the newspaper with this. If Mr. Worthington Smith would kindly give his valuable talents and time to the picturing of this scourge to the Apple tree I think he would confer a boon to us all, and finally set at rest that which has been miscalled canker, mis-stated as proceeding from the root, and as wrongly from frost, and all from the lack of tree and kernellu observation. Harrivom Weir

The Late Gale.—The winds of January, 1884, have made their mark in the gardens at Thorpe Perrow. The last hurricane, which took place on the night of the 27th, appears to have been the most disastrous among the good things. In the first Abies Nordmannian that was brought into Europe. This tree was brought from Prince Worozow's garden in the Crimea by one of the Lords Alvanley, and given to the late Lady Augusta Milbank. I think another went to Bicton, the only two plants out of six brought over alive. The tree we have lost was about 50 feet high. It was planted in a good situation, and much sheltered from winds. consequently, a sequall must have done the damage. Some time since in the Gardeners' Chronicle I advocated the practice of weighting the roots of all choice Coniferons plants, and as this tree is one so treated, it makes it the more interesting. The wind had no effect on the roots, but broke the top off about 12 feet above the ground. All the other trees so weighted stood this terrible hurricane without any damage. Abies nobilis, weighted with over five tons of soil, and above 50 feet high, stood well, although it is growing in a very exposed place. Handsome Spruce trees not so weighted were blown down in numbers all over the grounds, some in places where they will be much missed. In addition to this sorrowful tale, several fine old Hollies were blown and knocked down by other large trees falling on them. Twenty-two fine them, such as Box and Vews. One large Oak fell on a Yew with a spread of 18 feet, taking every branch from the stem, and leaving the latter a clean pole. In the woods the damage done is in proportion to what has been and one in the pleasure grounds; two breaks were made in one large plantation of Spruce, which must have been planted hard on 100 years. One is a passage right through the wood, about 20 yards wide; the other is a large space where over 100 trees lie one over the other in a perfect mass, and must have all gone with one gust of wind. One might has ke hat became of all the pi

— The unusually mild weather has been somewhat abruptly altered for the worse during the past eight days—cold showers of sleet and angry gusts of wind prevailing during this period. On Saturday last we experienced one of the most violent storms of wind, accompanied with sleet and rain, ever felt or remembered by the oldest inhabitant here. The morning broke calm and fair, although slight showers intervened towards mid-day, becoming more severe and frequent by mid-day. By four o'clock it had increased to a terrific hurricane, breaking and uprooting large trees in the park, unroofing houses, breaking glass, and carrying wreckage and destruction in its unabating fury, until about eight o'clock when it became calm. Thunder and lightning succeeded, and continued until midnight, when a slight fall of snow covered the hills, which was dispersed by the rays of the sun on Sunday.

The weather still continues stormy and unsettled. P. Davidson, Justine Minster, David

Pea Nelson's Vanguard.—As many of your readers will now be getting in the early crops of Peas I should like, with your permission, to bring to their notice a variety deserving of more extended cultivation by amateur and market gardeners. I have found Nelson's Vanguard a first-rate wrinkled Pea, 3 feet in beight, raised by the late Rev. John Nelson, of Winterton, Norfolk. It is very hardy, and may be sown in January in any soil. It comes into bearing only about a week later than William the First. It is also very prolific when liberally treated, and is of a most delicious flavour. With the late Rev. J. G. Nelson, of Aldborough, Norfolk, who was no mean judge, this Pea maintained its position to the last, as he did not consider it superseded by any later introduction. No one who saw it in his garden in the month of June will forget its magnificent appearance. H. C. Cooke, Aldborough Mill.

The Potato Disease : Sand Filtration,-In the Gardeners' Chronicle of January 12, I see an account of an experiment made by Mr. W. G. Smith regarding the power earth has of retaining the spores of fungi, upon which I beg to make a few remarks. I have proved that sand and different kinds of earth have spore-retaining power to a very high degree as far as the spores of the Potato fungus are concerned. At first Mr. Smith doubted very much, on account of certain theoretical reasons, that my experiments had any reality whatever. I am glad to see that he has now made a considerable advance in so far as he has himself repeated my experiments, not, however, with spores of the Detach purple with the reason of the Detach purple with the reason of seather the contraction. self repeated my experiments, not, however, with spores of the Potato fungus, but with spores of another fungus altogether. He has now convinced himself that there is nothing impossible in such experiments, and I hope that Mr. Murray and other unbelievers are satisfied also upon this point. It has now been proved in Great Britain by direct experiments that I was right in Great Britain by direct experiments that I was right in my assertions:—I. That high-moulding, done high enough and early enough, has the power of affording almost perfect protection to the tubers in the ground against the disease. 2. That when Potatos have been lifted while the Snores are still in active life in been lifted while the spores are still in active life in the leaves, the sound tubers will often be attacked to a very large extent in the very act of lifting them, and by spores falling from the leaves upon them; whereas such an "after-sickness" does not occur when the Potatos an "after-sickuess" does not occur when the Potatos have been left in the ground until two or three weeks after the complete withering of the leaves (as to the English confirmatory experiment, see the Gardeners' Chronicle, September 28, 1882). These are the great practical results of my researches. Other important results I trust will likewise be confirmed. After the publication of my treatise on the Potato disease some publication of my treatise on the Potato disease some old experiments were brought to light, which show that the effect of high-moulding was long ago noticed by a few practical farmers, one instance of this kind even as far back as the year 1846; these practical observations, however, have been almost entirely forgotten, which shows that want of belief in trustworthy facts is as great a cause of error as over-credulity. I hope, however, that the important fact that high-moulding is a powerful means of protecting Potato tubers from the disease has now been so impressed on the mind of the British public that it will never tubers from the disease has now been so impressed on the mind of the British public that it will never again be forgotten. The necessity for late lifting has, however, been much less spoken of than protective moulding, yet it has not only been proved, but also confirmed by communications in the Gardeners' Chronick, that a perfectly sound crop may be in great part destroyed by lifting it too early. I therefore beg to say, "Let this never be forgotten," for it is a fact of the greatest practical importance. 3. Next, it has been shown by Mr. Smith that the experiments on the retention of spores by earth, which at first he conbeen shown by Mr. Smith that the experiments on the retention of spores by earth, which at first he considered as impossible, really can be performed in the manner I have suggested. Such being the case, I think I may lay claim to a little more confidence in the value of my experiments than has hitherto been vouchsafed me by Mr. Smith and his adherents. I do not however by any means thun criticism on voucnsated me by Mr. Smith and his adherents. I do not, however, by any means shue criticism; on the contrary, I am desirous of it, on the basis of really controlling experiments. But on the other hand I am of opinion that unscientific remonstrances are prejudicial to the progress of truth, if not among scientists, at least as far as the general public are conscientists, at least as far as the general public are con-cerned. Let us now examine the experiments of Mr. Smith which tend to disprove what I have stated concerning the retention of Peronospora spores by sand and other soils. Curiously enough Mr. Smith has not experimented with the spores of the Potato fungus, but with those of Ustilago carbo. Why is this? Because spores of the Potato fungus, according this? Because spores of the Potato fungus, according to Mr. Smith, are not readily procurable in sufficient quantity for making satisfactory experiments at this season of the year. If Mr. Smith had known more of the subject he could not have said such a thing, for only starting with, say, ten healthy spores, a hundred millions of spores may be produced in the course of ten or fourteen days. It seems that Mr. Smith made use of a perfectly dry material, and that he has put all the spore-charged water on at once. If so,

this would diminish the spore-retaining power of the sand, but not, I think, do away with it altogether. If, therefore, Mr. Smith has committed no other serious error (and I do not see how this is possible) it must be admitted, I think, that his experiments show that sand and earth have no marked power of retaining spores of Ustilago carbo. This, indeed, is in itself very interesting, but it does not in any way contradict my experiments made with a totally different kind of spores—namely, those of the Potato fungus. After all said, I maintain that the retention of Potato disease spores by sand and earth cannot be reasonably disease spores by sand and earth cannot he reasonably disputed from any standpoint, because it is a well-established fact. The only way of controlling my experiments is to repeat them. If this be done I have no doubt they will receive complete confirmation. If, as Mr. Smith asserts, the spores of Ustilago carbo are not retained by sand and earth, I think the reason must be because, as suggested by Professor M. Forster, they contain fatty matter, which diminishes their adhesion to the material through which the filtration took place. But whether this be so or not, I cannot tell, because I have not myself experimented with these spress. which have nothing to do with the street. with these spores, which have nothing to do with the Potato disease—the sole object of my researches for several years. As I do not think it is generally known in England how to obtain in a short time a large number of spores of the Potato fungus for experimental purposes, I beg to make a few observations upon this subject. I am willing to send Potato slices dipped in spore-charged water to any English upon this subject. I am willing to send Potato slices dipped in spore-charged water to any English mycologist who wishes to repeat my experiments. These slices can be sent in a letter. By placing these slices under a bell-glass, or an inverted wine-glass, for the matter of that, in a room where the temperature is from 17°-18° C. (60°-65° F.), ripe conidia will be produced in about three days; with lower temperature this takes a longer time. To obtain a large quantity of spores, when the slices begin to produce conidia they should be plunged into and well shaken in a small quantity of water—say, in about a teappoonful. In the spore-charged water thus obtained fresh slices of Potato are dipped. The shove quantity of water would be enough for dipping a bundred fresh slices, but, generally speaking, ten to twelve slices will be amply sufficient for the experiments in question. Before putting these slices under wine-glasses they ought to the exposed to the free air for one or two hours, so as to dry a little, otherwise it often happens that the production of conidia is considerably interfered with by "wet rot" attacking the slices; but if these have been dried somewhat after being dipped a large crop of conidia can be generally obtained before the "tweet to "commences" being dipped a large crop of conidia can be generally obtained before the "wet rot" commences. The spores should always be made use of as generally obtained before the "wet rot" commences. The spores should always be made use of as soon as they are ripe, else they will mostly fall off, and "wet rot" will soon appear, by which the crop is spoiled. The details of the experiment itself have been given in the Gardeners' Chronick, December 22, 1883. For preserving the fungus for a long time whole tubers should be dipped in spore-targed water, and for some days placed in a moist position in a warm room. I generally put them in a jar, and cover them with a piece of wet linen. They must not be suffered to dry beforehand, and should be placed in the moist position immediately after being dipped. If the Potatos have not previously been dried, and if the spores are in an active state of vitality—which they always are when taken fresh from dried, and if the spores are in an active state of vitality—which they always are when taken fresh from the slices—the Potatos will nearly all become diseased, even when the skin is undamaged; but if the Potatos are rather dry, it is safer to prick them through the skin with a fork. When it has been ascertained that the Potatos thus treated have become diseased, they should be placed in a cool place. In a warm room the mycelium generally dies in the course of a lew weeks, but in a cold place (2°–5°C–35′—40° Fahr.) the fungus can be preserved all through the winter. When a piece of diseased Potato is placed under a bell-glass it generally produces but few condida if it has been long diseased. The number of these spores is insufficient for the experiment here spoken of, but is insufficient for the experiment here spoken of, but sufficient for producing a large crop of spores if they are put into a little water, in which fresh Potato slices can be dipped, and treated in the manner above described, J. L. Jensen, 141, Rue Perronel, Neuilly-sur-Seine, Jan. 24.

Mr. Smith's Fungus Experiment,—The great defect in the experiment detailed by Mr. W. G. Smith at p. 121 is seen in the fact that he so far departed from what is the normal state of the soil in the summer as to have saturated the sand in his flower-pot with water, so that for sand it was at the moment of carrying out his experiment as loaded with moisture as well could be. Now it should be known to Mr. Smith that sand can absorb only a certain quantity of water, and beyond that all the rest must percolate away if there be drainage; in fact, such is the porous nature of sand that once it is thoroughly saturated all other added moisture will pass through the silicate as fast as through a drain; consequently it needed but an additional drop or two of moisture to fall during the night to run through the sand in the

pot as fast as it liked. In the meantime the moisture arising from the saturated sand in the pot had liberated the spores of the Oat fungus, and with the drop of water or two that fell these would pass through the sand. Really the result was just what might have been expected, having regard to the fact that the sand had been specially prepared to produce it. The soil about Potato plants is of from 4 to 5 inches in thickness, and is never found in the summer in a saturated condition, as Mr. Smith's sand was. Still farther, no kind of soil is so porous, therefore the conditions of Mr. Smith's experiment, and those seen in high-moulding as practised by Mr., lensen, are in no way analogous. 'Tis true, many Potato tubers show disease in the flesh but not in the skin, but how it got there there is as yet no evidence to show. A. D.

Sand and Fungus Spores,—A simple drawing often gives a better idea of an object than pages of description. The accompanying little illustration (fig. 31) shows the relative sizes of grains of sand and spores of the Potato fungus, all enlarged from the actual objects 40 diameters. A represents the extremely fine sand found at Clapton, London; 12 the sand of Gray's Thurrock, Essex—both these sands are so fine and compact that they might be mistaken for brickearth; c is Reigate sand, unusually small; and D is the finest sand known to me, belonging to Croydon.

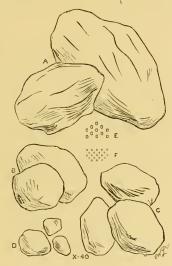


Fig. 31.—Grains of Sand, and the two orders of spores
Belonging to the Potato fungus, drawn to the
Same Scala. X 40.

Mr. Plowright has spoken of "compressed sand" and the interstices between the grains, but there is hardly such a thing as "compressed sand." When Egyptians fix the pegs of their tents in the desert they do not drive them in, as any attempt of that sort would split the pegs to pieces, the sand being non-compressible; the Egyptians, therefore, dig a hole for each peg. Even piles for bridges and other engineering works cannot be forced in sand, the non-compressible sand splits piles and turns the iron points. At E are the redinary Potato fungus spores, and at F the little moving zonspores, which burst out of the ordinary spores and swim about. Mr. Jensen has gravely told us that 3 inches of sand will sift these little spores and prevent them from reaching the tuber of the Potato, whereas fungus spores, when seen mixed with sand, flow about in the little currents of water like tadpoles in the whitpool rapids of Niagara. Wherever water goes the spores go too. Mr. Plowright tadpoles in the whitpool rapids of Niagara. Wherever water goes the spores go too. Mr. Plowright saks, on p. 46, "How many millions upon millions of layers would there be in 4 inches of compressed sand?" Would be be surprised to hear that in common sand, instead of "millions upon millions" there are not many more than a thousand layers? In Croydon sand there would be 1500 layers, and in the finest sand I have ever seen 6000 only. In respectfully sifting the calculations (and the sand) it must be understood that I do not question, and have not questioned, any possible benefits to be derived from high-moulding of Potatos—I hope practical gardeners, to whom we owe so much, will belp to settle this point. W. G. Smith.

American Summering Apple.—I cannot say whether the Apple I knew when a boy at Woodhouse, near Loughborough, as the American Summering is the same as the variety grown by Mr. Pearson, of Chilwell, under that name: but I am still inclined to call it a table Apple. I well remember, when a schoolboy, we used to consider it one of the best eating early Apples we could get. That was forty years ago, and there were large trees of it then, so it is a very old variety. I may add that some twelve or fourteen years ago, when on a visit to Woodhouse in the autumn, I ate one, and thought it as good as I did when a boy. Thes. Woodford, The Nurseries, Atherstone.

Crocus Imperati.—This pretty Crocus thrives and multiplies fast, even over the cold subsoil of my garden, in which delicate bulbs always fail. The difficulty is to ensure its flowering during the "heleyon days" which are due just after the winter solstice. This year it has had a splendid time, and I cannot recollect its flowers on fine or so durable ever before. Mr. Harpur-Crewe used to take up his bulbs of it when ripe, and keep them dry till late in autumn; and it then flowered in spring. Of course a raised hand-light is a very desirable protection to it when flowering out-of-doors at Christmas. I observe that a correspondent on p. 89 writes the name Imperatonius. I think the worthy Italian botanist, after whom it is called, would be the first to protest against such an adjective. Imperati is the modern form of the Latin Imperatus, a good loyal name, similar to Torquatus, Pilatus, Donatus, and a dozen others. The genitive of these must end in "ti." How the possessive adjective formed from them would end there is no certain rule; but either onius or orius would be impossible. Surely if plants are to be named after persons, it is better to use the possessive case than the possessive adjective, the attempt to form which often results in an uncouth barbarism. C. Wolley Dod, Llandualno, 74n. 26.

Helleborus niger.—So much has heen written on this subject that I should not again refer to it were it not to express the satisfaction with which, as an old cultivator of the genus, I have read Mr. Brockbank's recent papers in the Gardeners' Chronicle. He has shown both energy and judgment; and his earnest-ness, having been responded to by the confidence of collectors, he has had submitted to him, and heen enabled to compare specimens from all parts, at home and abroad, in unprecedented variety; and he has, I think, made good use of his opportunities—in fact, exhausted the subject. With regard to H. niger altifolius he may not have proved that it is a distinct species, but we all know now where it is to be found in a wild state. In his more recent essay he brings before us a great variety of forms, not with any suggestion that they are more than varieties of typical niger, but with proof that many of them have been established for a long period, and in widely distant localities, and that the Cheshire plant, with which his name is specially associated, is, in all probability, similar to that which in 1826 was distinguished by Sweet and Don as angustifolius. With reference to the illustration it is beautifully executed, and gives a vivid idea of a large, pure, well-formed flower. T. H. Archer-Hind, South Devon, Fan. 24.

Grapes at Longford Castle. — The Graperoom at this place presents just now an unusually attractive appearance, being filled to its utmost capacity with as fine a representative collection of late varieties as I have ever seen in midwinter, which in berry and clusters are all that one could desire, the latter varying in weight from 1½ lb. 0½ lb. each. The names of the varieties are as follows:—Alicante, Lady Downe's, Muscat of Alexandria, Mrs. Pince, Gros Colmar, and Gros Guillaume; the last-named, although not generally regarded as a favourite, is much esteemed at Longford. The Vines from which the crop was cut were struck from eyes in 1881, fruited the following year, and are now, after having borne a second crop—which in my opinion, was an exceedingly heavy one—full of vigour and promise for the future. From four Vines of Gros Guillaume twelve bunches were cut of an aggregate weight of 89 lb., being respectively three, 27 lb.; three, 24 lb.; three, 20 lb.; and three, 18 lb., the largest individual bunch, as previously mentioned, being 9½ lb. Gros Colmar produced bunches varying in weight from 2½ to 5 lb. The average diameter of fully developed leaves of Gros Guillaume was from 15 to 20 ioches, girth of rods 5 inches, and laterals bearing bunches 2½ inches. I give these particulars by way of recording what may be done (under favourable conditions) with Vines

Trichodesma physaloides, — This is a plant that nurserymen would do well to look after and introduce into cultivation, since, according to collectors' notes, it is a very beautiful plant ("a lovely object"), a statement that is fully borne out by an inspection of the dried specimens. This plant is

one of the Boragineæ, and has large fleshy tubers from which spring up annually a number of stems about a foot in height, sometimes forming patches about a foot in height, sometimes forming patches 2 feet in diameter from one root, well furnished with oblong, acute, glaucous green opposite leaves, and each stem ending in a rather large panicle of pure white flowers of good form an inch in diameter, and having the sepals purple. It is a native of the Transvaal in the neighbourhood of Pretoria and elsewhere; it also grows in other parts of Eastern Tropical Africa. If it were introduced it would no doubt be very easy to cultivate, and if treated in a similar manner to Dahlias would probably succeed well as a summer bedding plant, and would be a very desirable one, since white is not a colour of which there is too lavish a display in summer. The flowers appear to be lasting. N. E. Brown.

Notices of Books.

The English Flower Garden. By W. Robinson. (I vol., 8vo.) Murray: 1883.

The general object of this book, we are told, is to show by what arrangements and with what materials gardens, whether large or small, may be most effectually made to afford rational and lasting pleasure to those who frequent them. The "bedding out" system, which led to the expulsion of hardy herbaceous plants from many English gardens, reached its climax about thirty years ago. The setting-up of the Crystal Palace on Sydenham Hill was the apotheosis of conventional formalism in laying out pleasure grounds, the saoction of a kind of Baal-worship under which all natural beauty in gardens was sacrificed. But those who had a natural taste for flowers soon began to get weary of the tedious sameness of formal rows of scarlet and yellow in the long borders which they recollected full of handsome hardy flowers, and they sighed to have the plants of their childhood back again. These, however, had long ago been burnt on the rubbishheap, and a new generation of gardeners had grown up trained to know and believe in nothing for out-ofdoor gardening but bedding-out plants; so the recovery of gardens to a more healthy condition was slow at first; but in the last few years the reaction has progressed rapidly, and not only have all the oldfashioned hardy plants been restored to honour, but many new flowers of the best types for open-air gardening have been introduced and the demand as well

as the supply is increasing year by year.

In the celebration of Nature's triumph on her restoration to power in English gardens Mr. Robinson deserves to hold a conspicuous place; for no one has done more than he both to make and to meet the de-

mand for it.

The book of which we now speak is divided into two distinct parts; the former part, about 120 pages, deals with the laying-out of the grounds, the making of the beds and borders, and the arrangement of the plants in them. Examples, with illustrative plates, are given and discussed, from the ducal palaces of Treatham and Clumber to the villa of Professor Owen at Richmond, the rectory garden at Eversley, and the cottage of Gilbert White at Selborne. Mr. Robinson is not intolerant or dogmatic in his opinions about gardens; he gives us no ideal models, and his book is thoroughly practical throughout, and he draws tor us a series of pictures from real life, all of which please in different ways. Originality and variety of arrangement, so as turn to the best account the means at our disposal, are always to be commended; but conventional sameness and servile imitations are deservedly condemned. The gorgeous display of flowers made at Trentham and Chatsworth, and their clear fountains, delight us by their splendour; but to try to produce these effects by muddy ponds and illplastered terrace walls in a third class villa is ridiculous: we ask-

" An quodeunque facit Mæcenas, te quoque verum est Tantum dissimilem, et tanto certare minorem?

It is silly to try to make a Lucrine lake out of a duck-

In the arrangement of the flower beds also, and of the flowers in them, no fixed rules must be observed. We should try to follow "Nature in her best aspects." If we study any art in the matter it must be the art of artless arrangement—" Artem colandi artem." A visit to the best gardens in the kingdom, and the descriptions of others in Mr. Robinson's gardening journals, have made him familiar with great varietics of style, for all of which something may be said, and

select examples are given-the late Miss Hope's flower beds and borders as described by herself, Mr. Brockbank's in his villa garden near Manchester, Mr. Frank Miles' in the rectory garden at Bingham, and several others. Mr. Robinson strongly urges planting in groups, especially dwarf and choice plaots, to produce an effect, rather than having them dotted about, and in danger of losing themselves. Those who have seen the mass of Epigæa repens in the wood garden of Mr. Wilson, the colony of Pyrola rotundifolia at Munstead, and Pinguicula grandiflora in the bog garden at Floore, well know the value of this advice. Such subjects as Primula rosea and Gentiana verna not only look best, but may be most successfully treated when so grown.

We are not advised to destroy or lessen our grass lawns, but to make the most of the space devoted to flowers, and to look for tresh opportunities which may be turned to account for growing them. Rustic stone steps, the tops of old walls, waste corners, rough patches of grass which need not be mown till June, even the edges of walks, may all be made gay with flowers at some time of the year. From the Snowdrop of January to the Christmas Rose of December the beds and borders must never be flowerless. Advocates of the bedding-out system boast that the plants employed in it last so long in flower, but Mr. Robinson, with some reason, thinks that this very argument tells against it; we like variety in season as well as in kind, so that every part of each month may have its characteristic flowers-

" Floribus alternis, non tempore, computat annum"

-a true gardener's flowers are as good as an almanac

Tying up and labelling, of course, meet with attention in the preliminary chapters, but when all that is possible has been written and read about them, every one will continue to use his own plan, so we will leave these matters alone; but something like the "reserve garden" planned on pl. 69 we strongly recommend to all gardeners. It consists of a plot of level ground divided by narrow paths into rectangular beds, of such a width that any part of each bed may be reached without stepping on the soil. In these partitions, replenished from time to time with suitable soil, choice florists' flowers may be grown, new plants tested, duplicates for distribution raised; and it may form, as we have seen it at Munstead, a rich treasury of floral

The edging for beds and borders not bounded by grass is an important consideration, as in a large garden it has to be provided by the mile. Mr. Robinson advises the use of small stone slabs placed upright, or of thick pieces of sawn slate, over which dwarf plants may trail; where these materials cannot easily be obtained, Staffordshire blue tiles are good, and never break with any frost. They are rounded on the upper edge, the perpendicular edges being shaped to interlock, and their cost is £7 per 1000, or about £50 per mile. They are best laid with the outside 4 inches out of the walk, while on the inside the soil should come within an inch of the top, so that dwarf plants can easily trail over. Mr. Robinson advises that these plants shall be allowed to encroach a little on the walk so as to break the monotonous line; but, more than this, we find that such dwarfs as wild Thyme and Sandwort crawl over and down the tiles, and leaving the soil establish themselves in the gravel walk, where they feel more at home, and that Erigeron mucronatum, alpine Poppies, and similar free seeders, come up and flower well in the angle at the outer base of the tile, making a pretty row of alpines against the dark blue back.

We must now say something of the second and larger portion of the book, which consists of a descriptive catalogue of the materials with which the English outdoor garden may be made beautiful. These are arranged in alphabetical order, and extend over 300 pages, upwards of 1500 hotanical names heading as many descriptive paragraphs, which must not be judged from a botanical point of view, but which will be useful for reference, if not for comparison. In many instances a whole genus is included under its single generic name, several species being mentioned in the same paragraph. Thus, such genera as Aconitum, Helleborus, Hypericum, Salvia, Statice, &c., each of which may easily reckon a dozen ornamental species, have their members grouped together under one head. Many good half-hardy plants, easy to save through the winter, are included, as well as the best hardy bulbs and a few choice annuals, and

we probably have upwards of 4000 named varieties described. This is exclusive of florists' flowers, for each of which a code of cultural directions is given, with a list of favourites to be tried. The descripwith a list of lavourites to be tried. The descriptions are interleaved with 137 leaves filled on both sides with engravings of the plants mentioned on the opposite pages; under each figure the botanical name is printed in full, saving the tedious process of a numerical reference. Many of these figures are old acquaintances, somewhat the worse for wear, which we have already seen in the illustrated catalogues of nurserymeo, English or Continental. The absence of any scale of proportion is rather embarrassing at times, as when we find a flower of Ficaria bigger than a plant of Ferula; still they are useful to enable those who do not know the plants to judge of their babit, the size and colour being easily learnt from the letterpress on the adjacent leaf. We may mention that the popular English names are mixed up with the botanical names in the same leading type, each in its own alphabetical order, for convenience of reference. Large as the number of plants included may seem the author truly says that he gives only a selection of the best, and he fairly warns us if anything is of second-rate merit or difficult to manage. Some genera meet with especial favour both in the number of species described in separate paragraphs, and in the fulness of the cultural directions. Campanula is first in numerical force, with forty-four leading species; Saxifraga comes next with thirty-eight, while Primula and Iris have each twenty-six. Still perhaps all growers of large collections may find some favourites slighted; for instance, it may seem hard that such pretty and elegant flowers as Anemone parcissiflora and A. rivularis should be only enumerated and not commended; and that the characteristic Gentiana poeumonanthe, and one of the choicest of rockery ornaments, Hypericum reptans; should be entirely omitted. Still we have not many such omissions to notice, and the catalogue will be found a trustworthy guide to makers of collections, the cultural directions being founded upon the experience of the best gardeners,

We should have liked to have seen a good index of at least the former part of the work, as it is tiresome to have to look through a table of contents to find a passage to which we may wish to refer. The pages, too, might have been numbered with Arabic numerals throughout, instead of using those clumsy anachronisms, Roman numerals, up to 120, and then starting afresh; but these are small details, which detract but little from the general merit of the book.

The Meather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON,
FOR THE WEEK ENDING WEDNESDAY, JANUARY 30, 1884.

b Day.	BARON	teter.	TEMPERATURE OF THE AIR.				duc fi Gla Fab	rome- tions om isher's les 6th ition.	WIND.	-	
MONTH AND DAY.	Mean Reading Reduced to 32" Fahr.	Departure from Average of 18 years.	Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of	Dew Point.	Degree of Humidity. Sat. = 100.	Average Direction.	RAINFALL
· Jan.	In.	In.							0		In.
24	:9.79	+0.04	43-5	36.3	7.0	10.0	+ 2.	333 6	78	$\mathbf{W},\mathbf{N} \mathbf{W}$	0.00
25	29 40	- o 35	47.0	37 5	9 5	12 8	+ 5.0	38.0	83	S.W.	0.20
16	28.82	-0.94	48.5	37 0	11.5	12.0	+ 4.1	38.0	89	W. S.W	0 40
27	28 93	-0.77	41.5	34.5	7.0	37.2	- 0.9	31.8	81 {	S.W.:	0 00
28	29.57	- 0.20								N NIV .	0 00
20	20,64	-0.14							(WS, W.	
30		-0.01							93	s.w.	0 20
Mean	29.42	-0.34	47.6	37.0	10 6	42.6	+ 43	37 9	84	w.sw	0 95

Jan. 24 — Fine day and night,

25.— Fine bright morning; dull aftergoon; rain at

- 25.- Fine bight morning; dull afteronon; rain at night.

- 26.- A very severe storm. The minimum reading of the barometer took place at 7 30 F.M., when it was 28.35 inches. Lightning at night.

- 27.- Snow from 10. Ab. to 11 A.M., afterwards cleer and cloudy. Lightning at night.

- 28.- Fine day and night.

- 29.- Dense leg in morning; windy afternoon and 30.- Heavy rain at times; very dull day. Dark sky at night.

LONDON : Atmospheric Pressure .- During the week ending January 26, the reading of the barometer at the level of the sea decreased from 30.57 inches at the

beginning of the week to 30.39 inches by midnight on the 20th, increased to 30.54 inches by 3 P.M. on the 21st, decreased to 29.34 inches by 3 P.M. on the 23d, increased to 29.93 inches by 3 P.M. on the 24th, and was 28.71 inches by the end of the week.

The mean reading of the barometer for the week at the level of the sea was 29.88 inches, being o 68 inch lower than last week, and 0.08 inch lower than

the average of the week.

Temperature. — The highest temperature in the shade in the week was 52°, on the 23d; the highest reached on the 24th was 43°.5. The mean of the seven high day temperatures was 48°.8.

The lowest temperature was 36.°5, on the 24th; on the 22d the lowest temperature was 44°.5. mean of the seven low night temperatures was 39°.7.

The greatest range of temperature in one day was 11°.5, on the 26th; the smallest was 6°.5, on the 22d. The mean of the seven daily ranges was 9°.1.

The mean temperatures were-on January 20th, 10 mean temperatures were—on january 20m, 42°,7; on the 21st, 46°,4; on the 22d, 48°,8; on the 23d, 47°,9; on the 24th, 40°; on the 25th, 42°,8; and on the 26th, 42°; and these were all above their averages by 7°,5, 9°,1, 11°,4, 10°, 2°,3, 5°, and 4°.1 respectively.

The mean temperature was 44°.7, being 1°.9

higher than the average, and 7°.1 above the average

the week.

The highest reading of a thermometer with blackened bulb in vacuo placed in the full rays of the sun was 77°, on the 20th. The mean of the seven readings was 62°.2.

The lowest reading of a thermometer with its bulb placed on grass was 30°.5, on the 24th and 26th. The mean of the seven readings was 33°.1.

Rain.—Rain fell on five days to the amount of 0.81

inch, of which 0.40 inch fell on the 26th.

ENGLAND : Temperature, - During the week ending January 26 the highest temperatures were 56³.4 at Cambridge, 55³ at Leeds, 54³.4 at Bristol; the highest at Brighton was 50³, and at Blackheath and Preston 52³. The general mean was 53³.5.

The lowest temperatures in the week were 30°.3 at Wolverhampton, 31° at Hull, 31°.9 at Nottingham; the lowest at Truro was 41°, at Plymouth 38°.5, and at Bristol 38°. The general mean was 34°.4.

at Bristol 38°. The general mean was 34°.4

The greatest ranges were 23°.6 at Wolverhampton, 23° at Hull, 22° at Leeds; the smallest ranges were 13° at Truto, 14°.7 at Brighton, and 15°.5 at Plymouth and Blackheath. The general mean was 10°.

The mean of the seven high day temperatures was highest at Truto, 52°.1, at Plymouth 50°.9, at Cambridge 50°; and was lowest at Bolton, 46°.8, at Brighton 47°.5, and at Preston 48°.1. The general mean was 48°.9.

The mean of the seven low night temperatures was highest at Truto, 43°.7, at Plymouth 42°.4, at Bristol 41°.6; and was lowest at Wolverhampton, 37°, at Hull 37°4, and at Bolton 37°.6. The general mean was 39°.4.

The mean dally range of temperature was greatest

mean was 39°.4.

The mean duly range of temperature was greatest at Cambridge and Wolverhampton, 11°.4, at Nottingham 10°.7; and was least at Bristol 7°.8, at Preston 8°.2, and at Truro 8°.4. The general mean was 9°.5.

The mean temperature was highest at Truro, 47°.7, at Flymouth 46°.5, at Bristol 45°.3; and was lowest at Bolton 42°, at Hull 42°.3, and at Wolverhampton 42°.5. The general mean was 44°.

Kain.—The largest fall was 2.45 inches at Bradford, 2.39 inches at Shefield, and 2.13 inches at Bolton; the smallest fall was 0.67 inch at Cambridge, 0.81 inch at Blackheath, and 0.84 inch at Nottingham. The general mean fall was 1.44 inch. Rain fell on every day in the week at Bolton.

SCOTLAND: Temperature,-During the week ending January 26, the highest temperature was 53°, at Glasgow; at Greenock and Paisley the highest in the week was 50°. The general mean was 51°.5.

The lowest temperature in the week was 25°. at

Perth; at Leith the lowest temperature was 32°. The general mean was 28°.4.

The mean temperature was highest at Glasgow,

42°.1; and lowest at Dundee, 39°.1, The general

mean was 40°.6.

Kain.—The largest fall was 4.39 inches, at Greenock; and the smallest fall was 1.03 inch, at Aberdeen. The general mean fall was 2.07 inch. JAMES GLAISHER, F.R.S.

St. Louis, Mo.—Our climate here is one of extremes. On Jan. 5 the thermometer registered $-23^{\circ}.5$ Fahr., and on the $8th-3^{\circ}$. How our gardens will fare remains to be seen; the Peach crop is almost certainly annihilated, if not the Peach trees themselves, E.

Obituary.

MRS, R. B. DODGSON .- We regret to record the death, on January 19, of the widow of R. B. Dodgson, Esq., of Beardwood, Blackburn, who a few years ago was the possessor of one of the richest collections of Orchids in Laucashire, and whose demise, in June, 1852, was much regretted by a wide circle of Orchid growers. Mrs. Dodgson has, we hear, bequeathed \$\frac{1}{2}\triangle 0.00 to the Blackburn Grammar School; \$\frac{1}{2}\triangle 1.000 to the Blackburn and East Lancashire Infirmary; £10,000 to the Royal Albert Asylum for Idlots and Imbeciles at Lancaster; £5000 to the Manchester Infirmary; £5000 to the Royal National Lifeboat Institution; and \$500 to the Gardeners' Royal Benevolent Institution. She recently signed a deed of gift, transferring to the authorities of the borough of Blackburn a collection of oil paintings and watercolour drawings, valued roughly at £10,000 or £12,000, for the Public Museum.

— Mr. THOMAS BRITTAIN, the Laocashire botanist, died a few days ago, at his house at Urmston. He was a prominent member of the Manchester Field Naturalists' and Archæologists' Society, of the Manchester Mechanics' Institute, and of the Manchester Microscopical Society, of which he was President Society. dent in 1882. He was a great collector of botanical specimens.

Enquiries.

"He that questioneth much shall learn much."- BACON.

DRACENA GOLDIEANA. — Will some of your readers kindly tell me, from their experience, the best way of propagating this Dracena? I have a large plant, and wish to cut it down, but am not sure whether it is easy to root. L. Ye

TUFA STONE.—Will some of your readers kindly tell to where I can obtain Tufa stone for building grottos? 7. IVallace.

Answers to Correspondents.

CELERY, THE WHITE PLUME: H. J. P. B. We do not know if it has reached any of our seedsmen yet. Mr. Peter Henderson, of New York, U.S.A., holds the stock.

COAL-ASHES OAL-ASHES AND TAR FOR PATHS: H. Hawker. These, together with course gravel, make good serviceable paths for foot passengers only. It is essential to good work that the ashes and gravel be sifted, to take out the fine portions, and that the residue be dried thoroughly either over a fire, on iron plates, or in some other efficient manner, before adding the tar—a sufficient quantity to make a thick grout. AND TAR FOR PATHS:

CROCUS INTERATI: "A. Imperati is the proper form, How it came to be called Imperatonius we do not know, at any rate, that epithet should be discarded in favour of the word Imperati, which conforms to the canons of philology, etymology, and botany, and therefore must be right.

DIAMONDS: Uncut. We are unable to give you any advice beyond recommending you to consult one of the leading Glasgow jewellers.

FRENCH BEAN: J. S. Your best plan would be to send a few seeds for trial to Mr. Barron, Royal Horticultural Society's Garden, Chiswick, who will bring them under the notice of the Fruit Committee.

FUNGUS ON SILO: IV. D. C., Hampitead. The name of the fungus which has appeared on the clean cut surface of your silo is Schizophyllum commune. It is widely spread in tropical regions, but of extreme rarity even upon imported foreign timber, in Britain. We should be very much obliged if you would send us some more. IV. G. S.

Some more. W. C. S.

GLADIOLI: Y. F. C. To make a show in the autumn you should plant the Rhododendron beds with Liliums, especially L. auratum, and not with Gladioli, which seldom do better than yours have done in such a position. The Gladioli, of all things, enjoys deep cultivation, and to do them well the ground—a good loam—should be heavily manured and trenched about 2 feet deep in the autumn -say in September.

deep in the autumn—say in September.

GOSSEBERISE: T. d. We should select the following
to grow for exhibition purposes:—Red: Dan's Mistake, London, and Rover. Yellow: Leveller, Mount
Pleasant, and Ringer. Green: Stockwell, Rough
Green, and Village Green. White: Antagonist, Freedom, and Observer. For ordinary good cropping
qualities you should select such sorts as Crown Bob,
Monarch, Red Wartington, and white and yellow
Champagne. Messrs. Salsbury & Sons, Melbourne,
near Derby, grow Gooseberries as a speciality, but any
nurseryman could get them for you.

Grayes: A. In your Muscat-house plant Mrs. Pince's Black Muscat, Alicante, Muscat of Alexandria; at the cool end you could have Black Hamburgh and Lady Downe's. In the Hamburgh house plant this variety, Madresfield Court, Foster's Seedling, and, if you have room, a Grizzly Frontignee.

HELLEBORE POWDER: W. Divers. This is the powdered rhizone of Helleborus niger, and is obtained mainly from Germany and Austria. It is known to be adulterated with the powdered rhizones of H. viridis and H. fordiosa, and also of Actea spicata—the Baneberry.

H. Rettous, and also of Actea spicata—the Baneberry.

NAMES OF PLANTS: Cordillera. We have seen a
furcate Pteris aquilina very much like yours, but of
English origin. The Asplenium appears to be a very
small frond of A. ferulaceum, which was introduced
about ten years since, but has never become common,
notwithstanding its elegant character. E. Kruiff.
The Helleborus niger of English gardens. — 7. Y. Y.
T. Beckea virgata; 2, Juniperus sp.; 3, Ceropegia
Gardneri; 4, Tristania conferta.

Gardneri, I., Irisaina conierta.

PINEMICOPHORIUM SECHELLARUM: E. II', P. This noble Palm is a native of the Seychelles Islands, and, therefore, requires stove treatment. It should be potted in a mixture of two parts of rough peat and one of loam, with enough sand to make it porous, and should not be potted too firmly, as it likes frequent waterings, and, to keep the soil sweet, the water should be able to get away quickly. With root treatment of this character, a moist atmosphere, and high temperature it will make a good growth.

temperature it will make a good growth.

PINLLOXERA: A. M. Rododendrons are not at all likely
to be inlested with Phylloxera which do not feed on
the roots of these plants, though it is of course impossible to deny the possibility of their occurrence in the
soil. Some soil from an infected Vine border might
in some way have been imported, or some of the insects or their eggs transported on the heel of a boot.
We have no doubt whatever, from what you say, that
you may conscientiously certify; but whether the
authorities on the other side will heed your afirmation
is another matter. 2. There is risk in importing Phylloxera with seedling forest trees from France, especially if they come from a Vine-growing district; indeed, we strongly suspect that the insect has been
repeatedly introduced with Roses.

* All communications intended for publication should

repeatedly introduced with roses,

* All communications intended for publication should
be addressed to the "Editor," and not to the Publisher
or to any member of the staff personally. The Editor
would also be obliged by such communications being
written on one side only of the paper and sent as early
in the week as possible. Correspondents seading
newspapers should be careful to mark the paragraphs
they wish the Editing to see. wish the Editor to see.

INTELLIGENT READERS, PLEASE NOTE: — Letters re-lating to ADVERTISEMENTS, or to the supply of the Paper, should be addressed to the Publisher, and NOT to the Editor,

FOREIGN SUBSCRIBERS sending Post-Office Orders are requested to send them to the Publisher of this journal, 44, Wellington Street, Covent Garden, and to make them payable to William Richards, at the Post Office, Druy Lane, London, W.C.

CATALOGUES RECEIVED.

RICHARD SMITH & Co., Worcester-Vegetable and

Flower Seeds.
H. CANNELL & SONS, Swanley, Kent—Illustrated Floral

H. CANNELLE M. Guide for 1884. Guide for 1884. FISHER, SON & SIBRAY, 4, Market Street, Sheffield—Kitchen Garden and Flower Seeds.
EDMUND A. SAUNDERS, Abergavenny—Vegetable and

EDMUND A. SAUNDERS, Abergavenny—vegetable and Flower Seeds.

F. URQUIART & Co., 11, Union Street, Inverness—Vegetable and Flower Seeds.

RICHARD LOWE, 32, Queen Square, Wolverhampton—Garden and Farm Seeds.

W. P. LAIRD & SINCLAIR, Dundee—Vegetable and Flower Sends.

W. F. LAIRD & SINCLAIR, Dundee—Vegetable and Flower Seeds.
G. BRUCE, 35 Market Street, Ipswich—Flower Seeds.
G. BRUCE, 35 Market Street, Aberdeen—Flower, Vegetable, and Farm Seeds.
P. J. KANE, Kells, co. Meath — Vegetable and Flower

Seeds,
JAMES YATES, Little Underbank, Stockport—Vegetable
and Flower Seeds.

and Flower Seeds.

G. HENCHESON & SON, Maida Vale, London, W.—
Vegetable, Flower, and Agricultural Seeds.
JAMES COKER & SONS, Sunnypark, Aberdeen — Vegetable and Flower Seeds, &c.

HENDESSON & SONS, Brechin—Vegetable and Flower Seeds, &c.

Seeds, &c.

Levin Band, Bark, National Science, Verse, Seeds, &c.

Seeds, &c.

J. Don, 20, Chapel Bar, Nottingham—Flower, Vegetable, and Farm Seeds.

JOHN PERKINS & SON, Northampton—Vegetable and

JUIN PERKINS & SON, Northampton—Vegetable and Flower Seeds.

LUCONIE, PINCE & CO., Exeter—Vegetable and Flower Seeds, &c.

THOMAS A. COX & CO., 199, Sansome Street, San Francisco, California—Flower and Vegetable Seeds,

Trees, &c.

SCHMIDT, Erfurt, Germany—Vegetable and Flower

J. C. SCHMIDT, Erfurt, Germany—Vegetable and Flower Seeds.
CONNON & REID, 8, Haddon Street, Aberdeen—Garden and Flower Seeds, &c.
VILMORIN-ANDRIEUN & Co., Paris. — Vegetable and Flower Seeds, &c.
REMJ, HURST, Hinckley.—Vegetable and Flower Seeds, WILLIAM GRIEN, 44, Vicar Lane, Leeds.—Garden and Agricultural Seeds.

Communications Revenue...E. H.—De B. C.—Foremao...
T. G.—J. P. (Send us your mime and we will communicate use of the communicate use of t

Markets.

COVENT GARDEN, January 31.

Business stationary. Grapes, keeping badly, do not improve in value. St. Michael Pines are in good supply and condition. James Webber, Wholesale Apple Market.

FRUIT.-AVERAGE WHOLESALE PRICES.

5. 4. 5. 4.	
Apples, 1/2-sieve 1 0- 5 0	Lemons, per case15 c-25 o
Cobs, per 100 lb 125 0 135 0	Pears, French, doz. 1 6- 9 o
Figs, per dozen I o	Pine-apples, Eng ,lb. 1 6- 2 0
Grapes, per lb 1 0- 5 0	- St. Michael's, each 2 o · 8 o

V---- A--- Dunin Dunin

VEGETABLES AVERAGE RETAIL I RICES.							
s. d. s. d.	s. d. s. d.						
Artichokes, Globe,	Herbs, per bunch o 2- 0 4						
per doz 3 0- 5 0	Horse Radish, bund. 3 0- 4 0						
- Ierusalem bush. 4 o	Lettuces, Cabbage,						
Asparagus, English,	per dozen z 6						
per 10012 0	Mint, green, bunch r o						
— Bundle, small 5 0	Mushrooms, p. baskt. 1 0- 2 0						
Beans, French, lb r o	Onions, per bushel 4 o						
Beet, per doz 1 o	- Spring, per bun, o 6						
Cabbages, per doz 1 o- 2 o	Parsley, per bunch o 4						
Carrots, per bun 0 4- 0 6	Radishes, per doz 1 6						
Cauliflowers, Eng-	Rhubarb, per bund. o 4- o 6						
lish, dozen 2 0- 3 0	Salsafy, per bundle o 8						
Celeriac, per root 0 4- 0 6	Seakale, per puonet 2 o						
Celery, per bundle., 1 6- 2 6	Small salading, pun. o 4						
Cucumbers, each 1 o- 2 o	Spinach, per bushel 4 o						
Eadive, Eaglish, per	Sprue, French, buod. 1 6						
dozen 1 o	Tomatos, per lb 2 6						
Garlic, per lb o 6	Turnips, new, bun. o 4						
POTATOSKeot Magnums, 705	s. to 100s. per ton; do., Regents,						
80s, to 100s, ! Cha	mpions, 70s. to 80s.						

CUT FLOWERS .- AVERAGE WHOLESALE PRICES

s. d. s. d.	s. d. s. d.
Abutilon, 12 bunches 3 o- 6 o	Mignonette, 12 bun. 6 o- 9 o
Arum Lilies, 12 blms. 6 o- 9 o	Narcissus (Paper-
Azalea, white, 12 spr. 1 o- 2 o	white) o 6- 1 6
Bouvardias, per bun, 1 o- 1 6	Pelargoniums, 12 spr. 1 6- 3 0
Camellias, per doz 2 0- 4 0	- nonal, 12 sprays o 9- 1 o
Carnations, 12 blms, 1 0- 3 0	Poinsettia, 12 blooms 6 0-12 0
Cyclameo, 12 blooms o 3- o 6	Primula, double, bun, 1 o- 1 6
Epinhyllum, 12 blms, o 6- 1 o	- single, 12 bun 6 o- 9 o
Eucharis, per doz 4 0- 6 0	Roses (iodoor), doz. 2 o- 6 o
Gardenias, 12 blms. 18 0-36 0	- coloured, doz 3 o- 0 o
Heliotropes, 12 sp 0 6- 1 0	Tropæolum, 12 bun, 1 o- 2 o
Hyacinths (Roman),	Tuberoses, per doz., 4 o- 6 o
12 Sprays 1 0- 2 0	Tulips, 12 blooms 1 0- 2 0
Lapageria, white, 12	Violets, 12 buoches 1 0- 1 6
blooms 3 0- 6 0	- French, per bun, 1 o- 1 6
- red, 12 blooms., 1 o- 3 o	- Parme, per bun, 4 o- 6 o
Lilac, white Fr., buo. 8 o-10 0	Wallflower, 12 bun 4 0- 6 o
Lily-of-Valley, 12 spr. 0 9- 1 6	White Jasmine, per
Marguerites, 12 bun. 6 o- 9 o	bunch o 6- 1 o

D. ANTO IN POTO -AVERAGE WHOLESALE PRICES

s. d. s. d.	s. d. s. d.
Aralia Sieboldi, doz. 12 0-24 0	Ficus elastica, each r 6- 7 c
Arbor-vitæ (golden),	Foliage Plants, vari-
per dozen 6 o-18 o	ons, each 2 0-10 0
- (common), dozen 6 o-12 o	Hyacinths, per doz. 8 o-10 o
Azaleas each 26-50	- Roman, per doz. 18 0-24 0
Begonias, per doz 6 o-12 o	Lily of the Val., pot 2 o- 3
Bouvardias, doz12 0-18 0	Marguerite Daisy,
Cyclameo, per doz12 o-30 o	per doren12 0-18 0
- Extra size, each 5 o- 10 o	Myrtles, per doz 6 c-12 (
Dracæna term. doz30 0-60 0	Palms in variety,
- viridis, per doz12 0-24 0	each 2 6-21
Epiphyllum, per doz. 18 o- 30 o	Pelargoniums, scar-
Erica, various, doz. 9 0-24 0	let, per dozen 6 o 12 0
Euonymus, various,	Poinsettias, per doz. 12 0-24
per dozea 9 o-18 o	Primula, single, doz. 4 0- 6
Evergreens, in var.,	Solanums, per dozen 8 0-15
per dozen 6 0-24 0	Tulips, per dozen 6 0- 9
Ferns, in var., dozen 4 o-18 o	

SEEDS.

SEEDS.

London: Jan. 30.—The seed market to-day was thinly attended, and there was not much business doing. For red Clover seed the demand is quiet. As regards English Clover seed, the great majority of the samples offering show only medium quality. American and Continental quotations come firm, and are relatively above those ruling here. Alsike is dearer; fine white continues searce, and commands extreme rates. Trefoil sells slowly on unaltered terms. In Rye-grasses the tendency is downwards. The high prices asked for spring Tares stop business. Canary seed is 1s. per quarter higher. John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.

Tuesday's Whitechapel Market report states that supplies were rather large, and the trade very quiet. Quotations: —Frime Clover, 95s. to 108s.; inferior, 6os. to 75s.; prime second cut, 9os. to 105s.; best meadow hay, 8os. to 80s.; inferior, 4os. to 65s.; and straw, 28s. to 37s. per load.—On Thursday there was a large supply, and trade was very duit, at late rates.—Cumber-land Market quotations:—Superior meadow hay, 8os. to 90s.; inferior, 6os. to 72s.; superior Clover, 10os. to 110s.; inferior, 65s. to 84s.; and straw, 33s. to 38s. per load.

POTATOS.

The Borough and Spitalfields Markets reports state that good supplies have been on offer, and a fair trade as follows:—Magnum Bonums, 80s. to roos.; Reamplions, 70s. to 90s.; Champions, 50s. to 70s.; and Victorias, 80s. to roos. per ton.—The imports into London last week consisted of 5t bags from Boulogne.

COALS.

The following are the prices current at market during the week:—Bebside West Hartley, 141, 9d.; Walls End —Hetton, 165, 6d.; Hetton Lyons, 155.; Lambton, 165.; Wear, 154.; Caradoc, 165.6d.; Tyne (unscreened), 115.6d.; Wear, 155.; Hulm, 155.

Carters'

STERLING

NOVELTIES

IMPORTANT FACTS.—It is generally admitted that the Vegetable and Floral Novellies introduced of late years by Messrs CARTER nossess sterling qualities to a degree that finds few competitors. J C, & Co have only to refer to the splendid introductions, Stratagem, Telephone, and Pride of the Market Peas, Leviathan Beans, Heartwell Cabbage, Model Gucumber, Dedham Favourite Tomato, &c, to confirm the statement, and it is a notable fact that Messrs. Carters' Novelties, unlike many others, do not Tade from public favour, but are generally recognised as necessary in every garden, whether for Exhibition or for the Table.



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ACDOCETTO ATDA

AGROSTIS ALBA, va	ar, stolonite	ra	I	0
AVENA FLAVESCEN	IS		2	6
AIRA CÆSPITOSA		}	0	6
(Generally sold as Avena fla-	vescens).	- {	•	٠
ALOPECURUS PRAT	TENSIS		2	6
ANTHOXANTHUM (DORATU	M	2	6
CYNOSURUS CRIST	ATUS		2	3
DACTYLIS GLOMER	ATA		I	4
FESTUCA DURIUSO	ULA		I	0
" ELATIOR		• • •	I	6
" OVINA			1	9
" LOLIACEA			1	6
" PRATENSIS			I	6
" RUBRA			1	0
" TENUIFOLIA			I	0
PHLEUM PRATENS	E		0	8
POA PRATENSIS		• • • •	1	3
" TRIVIALIS			I	9
" MEMORALIS		•••	I	3

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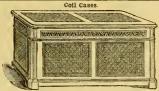
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CELERIES, also the best CUCUMBERS, CABBAGE, and ERGCOLL.—Wright's Grove Red CELERY, 30 or 15 packets, 45 per 100; and ERGCOLL.—Wright's Grove Red CELERY, 30 or 15 packets, 50 per 100; Wright's Grove Pink CELERY, 31 or 15 packets, 45 per 100; Wright's Grove Pink CELERY, 31 or 15 packets, 55 per 100; Wright's Grove Pink CELERY, 31 or 15 packets, 55 per 100; Wright's Grove Pink CELERY, 31 or 15 packets, 55 per 100; Wright's Grove Pink CELERY, 31 or 15 packets, 55 per 100; Wright's Perfection White BROCCOLL, 17 packets, 15, per 100; Wright's Perfection White BROCCOLL, 17 packets, 15, per 100; Wright's Perfection White BROCCOLL, 17 packets, 15, per 100; Wright's COLL, 17 per 100; Perfection White BROCCOLL, 17 packets, 15, per 100; Packets, 150; Pack correspondents, WILLIAM WRIGHT, Seedsman, Retford, Notts.

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100,000 Hardy HEATHS, nice plants, suitable for planting on banks ard mourds. Can be supplied in 20 or 30 varieties, at 44 perdozen, 251, per 1000.

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Doughasii, to 13/6 tool, 424, per 100; 13/16 to 3/6 feet, 307.

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L5 per 1000. Broadlands, Enfield Highway, Middlesex.

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A cl	hean	offer	-with	h straic	ht sto	ut sten	is and	2000	root	s:-
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"ROTUDIFOLIA, 1to 1½ foot, 1½ to a feet, a 10 a feet.

"ROTUDIFOLIA, 1to 1½ foot, 1½ to a feet.

"ROTUDIFOLIA, 1to 1½ foot, 1½ to a feet.

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CATALOGUES of Roses, Fruit Trees, Coniferæ, Shrubs, &c., free on application.

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CARDENER (HEAD WORKING); age 29.
Mr E. CLARKE, Gardener, Canoon Hall, Barnsley, can
confidently recommend his Forenan, J. Street, to any one
requiring the services of a man well up in Plant and Fruit
Growing. Over two years in pre-tent streatum—Apply as above.

ARDENER (HEAD WORKING); age 25

—Mr. W. Fox, Holker Hall Gardens, Cark in Cartme
Carnforth, Lancashure, can with every conditioner recommen
his Forenan, C. Martin, who has been with him three year
to any one requiring the services of a thorough good practice
man, as above. Good references to previous employers.

ARDENER. — Major PEMBERTON, Newton Hall, Cambridge, recommends his Girdener, A. Madgett, to any Lady or Gentleman requiring a thorough practical man. Five and a half years' character.

GARDENER, where one or more are kept. Married, one child. Eleven years' practical experience in all branches of gardening. Highest references—A., Mr. Fowle, Dogmersfield, Winchfield, Hants

GARDENER, in a good private establish-ment -Age so; six years' experience. A good general knowledge. Good reference. -A. B., Mr. Magner's, Crescent Road Nursery, Werthing.

GARDENER. — Could take the Management of Laying out a New Estate. Having a taste for Landscape Work, and having great experience, Plannie best Shrubs, Fruits, Tiees, &c., could Advise and Plan. God references.—J. R., Hutton Grove Nursery, North FinchLynn

GARDENER.—Young, married, industrious; understands Kitchen and Flower Gardening, V. Cucumbers, and Melans. No objection to look after a Stock, Meadow Land, or Pony- Good testimonials,—G Mr. Fowle, Dogmersfield, Winchfield, Hauts.

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GARDENER or LAND STEWARD.—D.
DAVIS' engagement with C. L. Christian, Esq., ceasing
on the 19th, he respectfully offers his services to any Nobleman
or Gentleman requiring an efficient Gardener or Land Steward. or Gentleman requiring an efficient Gar-The Gardens, Norfolk Lodge, Barnet.

GARDENER (KITCHEN, or SECOND).—Age 24: matried when suited. No objection to Cows or Pigs. Good character.—E. C, 8, King Charles Crescent, Surbicon Hill, Surrey.

GARDENER (SINGLE-HANDED OF UNDER). —Age 23, single; three years' good character from a clergyman. Wages 2:s. per week.—J. W., Hulton Grove Nursery, North Finchley.

To Head Gardeners.

GARDENER (SECOND), where four or five are kept. - Age 23; three years' good character from last place — J. HARDING, Almondsbury, Gloucester.

GARDENER (SECOND).—I shall be pleased recommend a young man (age 22), well up in his work.

Three years here as above.—GARDENER, Healey Hall,
Ludlow.

GARDENER (SECOND), in a private estab-lishment.—Age 25; nine years' experience. References from present and previous situations.—E. H., Post Office, Esher.

GARDENER (SECOND), in a Gentleman's garden.—Age 26; can have good reference from last place, as second in the Houses,—A. BROWN, 22, Portland Grove, Fallowfield, Manchester.

GARDENER (SECOND), in a Nobleman's or Gentleman's Garden.—Age 20; seven years' experience. First-class references. Bothy preferred.—G. M., 121, Bury Road, Whitefield, Manchester.

TARDENER (UNDER, or SINGLE-HANDED), in or near London.—Age 23. Please to state wage H. WITTER, Chapel Clewe, Washford,

GARDENER (UNDER), in private family.—
Age 19; excellent references. Two years' personal
character, Total abstainer,—E. P., 3, Dove Mews, Old
Brompton Road, S.W.

GARDENER (UNDER).—Age 20; strong and active. Good character.—F. JONES, 3, Abyssinia Cottages, Worpole Rond, Isleworth, W.

GARDENER (UNDER).—Age 20; has lived for the last eighteen months as Second Gardener in his present place, where letters can be directed.—F. BROWN, The Gardens, Boreham House, Chelmsford, Essen

GARDENER and BAILIFF.-Age 35, one Child (age 4 years); wife could undertake Dairy and Poultry Good references given — GARDENER and BAILIFF, Nutfield Court, Redhill, Surrey.

KITCHEN GARDENER; age 26, married.

-Mr G. CLINGING, Head Gardeuer, Marden Park,
Caterham Valley, Surrey, can wuth all confidence recommend a
first-class man as above. Fight years' experience.—State first-class man as above. Eight years' e wages and full particulars, and apply as above

FOREMAN, in a private establishment.—
Age 25; five years' reference. Bothy preferred.—A. B.,
The Gardens, Crowa East Court, Worcester.

FOREMAN, in a private establishment; age 25.—C CROOK is one to engage with a Head Gardener as above. Can be highly recommended from previous employers.—The Gardens, Hutton Hall, Gaisborough.

FOREMAN.—Mr. MITCHELL, Gardener to Sir G. Elliot, Bart, M.P., can with the suricest confidence recommend C. Taylor as a good practical man, who has been Foreman under him the last three years.—C. TAYLOR, or Mr. MITCHELL, Aberdaman Gardens, Aberdare, South

FOREMAN (GENERAL, or otherwise). —
Tested ability and experience. First-class references. —
GEORGE MILES, Spring Grove, Bewdley.

POREMAN (GENERAL), where a good staff of mea are employed.—First-Class references as to practical ability, energy, and promptuess, always having had a thorough hising for the pro-ession. Can give satisfaction and take the lean in all departments of Gardening.—F. J., Holly House, Goudhurst.

To Nurserymen, &c.

FOREMAN (WORKING), in small Nursery,
Ten yeart' experience as Plant, Flower, Cneumber,
and General Nursery Stock Grower; expert Budder, Rose
Grower, and Salesman, First-class testimonials from preva

POREMAN, or SECOND.—Age 24; ten years' experience, Two years in present place, Highly recommended, Suburbs preferred. No objection to bothy.—A. B. 9, Totterdown Place, Muswell Hill, N.

FOREMAN and PROPAGATOR (INDORS)—Well up in the Management of a General Collection of Stove and Greenhouse Plants, and in Producing Cut Flowers. Twelve years' experience. Good character.—HORTUS, 8, London Road, Nottingham

FOREMAN PROPAGATOR. — Age 37, married: over thirteen years' experience in one of the largest provincial nurseries.—S. LOMAS, Messas. Fisher, Son & Stbray, Handsworth Nurseries, Sheffield.

FOREMAN PROPAGATOR and SALES-HAMAN, in the glass department.—JAMES EASTON, having the latter than the glass department of the latter than t

PROPAGATOR and GROWER, Soft-wooded,—Age 24; London and Provinctal experience. Good references. State terms, &c.—A. B. C., 112, Longstone Raad, Eastbourne, Sussex.

PROPAGATOR and GROWER. — Thoroughly experienced in producing large quantities of Flowering Plants. Twenty-two years' experience in London and Provincial Nurseries. — F., 43, Winslade Road, Upper Clapton, London, E.

PROPAGATOR and GROWER.—Age 29; well up in Propagating and Grafting all kinds of Stove and Greenhouse Plants. Fourteen years' experience in the Trade. Excellent recommendations from present and previous employers. Please state wages, &c.—J. L., Helbourne Nursery, Arneley S. F.

ROSE GROWER.—Age 26; has had several years' experience. Well up in Fruit and Shrubs. Good Bouquetist. Good character.—ALPHA, 5, Sandringham Terrace, West Green, Tottenham, London.

JOURNEYMAN (FIRST), in the Houses of a good e-tablishment; age a6.—C. ORCHARD, The Gardens, Combe Leish, Kingaton-orl bames, wishes to recommend his aecond man (Wm. Rosser) as above. Good worker, very seealy, trustworthy, and thoroughly attentive to his duties.

JOURNEYMAN (FIRST), Indoors, in a large garden, Fruit-houses preferred.—Age 23; good knowledge of stove and Greenhouse Plants and Orchids. For reference apply to Mr. Green, Pendle Court, Bletchinger, Surrey, with whom the Advertiser has been the last siz years.—W. RUSSELL, Brewer Street, Bletchingley, Surrey.

TOURNEYMAN, in a large establishment. Age 24; good reference State wages given.-H. F., Wellington Nurseries, St. John's Wood, N.W.

JOURNEYMAN, in the Houses, in a good Nurseny.—Begon 1: good character.—H. DRAKE, Mr. Joho Packinson, Great Layton, Blackpool.

OURNEYMAN, where he can improve him-Oscif.—Age 17; four years' experience Inside and Out, Good character.—R, BANHAM, Mount Mascal, Herne Hill, London, S.E.

JOURNEYMAN, in a good establishment, Inside preferred.—Age 22; seven years' practical experi-ence. Good characters. Write with particulars.—T. FULLER, Fredville Park, Sandwich, Kent.

JOURNEYMAN, in the Houses or Out.— Age 24; can be highly recommended. Four years' experience—C. GITTINGS, The Gardens, Thornes House, Wakefield, Yorks.

JOURNEYMAN, in the Houses, in the establishment of a Lady or Gentleman.—Age 19; has been four and a half years at the business.—HY. KERR, Gorse Hall, Stalybridge, Manchester.

JOURNEYMAN, in a Nobleman's establishment.—Age 24; well versed in Early and Late Forcing. Can be well recommended by present and previous employers. State wages, &c.—G. BAKER, Barton Nursery, Torquay,

JOURNEYMAN (INSIDE and OUT, or in the Houses).—Age 22; seven years' experience. Has good reasons for leaving last situation. Bothy preferred.—State particulars to J. BOON, Winteraye, Ilminster, Somersetshire.

PLANTSMAN or SECOND ASSISTANT in a good establishment.—Age 22; energetic. Prexperience has been chiefly devoted to the Propagatic Culture of Plants. Character, &c., will bear strictest gatton—A B, 343, New Cross Road, New Cross, S.E.

TMPROVER, or THIRD, in a first-class private establishment, where Plant Growing, &c, is carried on with spirit.—Has had twy years' practical experience in a large nursery, where Roses, Dahins, and Pelargoniums are grown for exhibition. Can be well recommended for honesty, energy, solviety, &c.—For particulars apply to Mr. C. TOWERS, The Manor House, Seramby, Spalby, Lincoln.

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ments. Has had two years' experence under Glass,—Apply,
with terms, to FLORIST, 5, Finsbury Road, Ramsgare, Kent.

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TRAVELLER.—A GENTLEMAN of many a first-class firm. Has a good practical knowledge of the profits of the control of the control

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Seed and Nursery Trade.

Seed and Nursery Trade.

Seed Experience. Well up in Retail Seed Trade. Good references.—H. Waltville, Crown Nursery, Bishop's Stortford.

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"By a thorough knowledge of the natural laws which govern the operations of digestion and autrition, and by a careful application of the fine properties of well-selected Cocoa, Mr. Ryps has provided our breakfast-tables with a delicately flavoured beverage which may save us many heavy doctors' bills. It is by the judicious use of such articles of diet that a constitution may be gradually built up until strong en magh to resist every tenorency to disease. Hundreds of subtle maladies are floating may excape many a fatals last by keeping ourselves well fortified with pure blood and a properly nourished frame," Civil Service Gazette.

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"This was a control of the breath and Coughs."

DR. LOCOCK'S PULMONIC WAFERS for upwards of thirty-five years, and I have derived more benefit than from any other medicine—J. Kenn, Great Wakering, Essex." Be Bronchitis, Athma. Consumption. Coughs, Colds, Rheumatism, and all His verical and Nervous Complaints they are instant left, a rabid cure, and taste pleasantly. Sold by all Druggists at 15. 1/2d, 21. 91. 42. 6d, and 115. per Box.

HOLLOWAY'S PILLS.—Sudden changes, HOLLOWAY'S PILLS.—Sudden changes, frequent fogs, and pervading dampness sovely impede the vital functions, and conduce to ill health. The remedy for such disorders lies in some puritying medicine, like these chief at its source, and stamp it out, without fretting the nerves, or weakening the system. Holloway's Pills extract from the blood all navious matter, regulate the action of every disordered organ, stimulate the liver and kidneys, and relax the blood has been compaints these Pills are remarkably effective, especially when aided by a free local application of steady, and beneficent progress, and sound bealth will soon be re-established.

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"A FEW GOOD THINGS AT SWANLEY."

VISITOR.

"There are many 'good things' in the establishment of Messrs. | at the same time in such great demand at home. This then accounts for Cannell, as nearly all the world knows, for it is certain there are few the multitudinous nature of the stock, for the clients of the establishment civilised countries that have not had their floral collec-

tions enriched from this 'Home of Flowers' in the pretty Kentish valley that has undergone such a remarkable transformation during the past few years. So great, indeed, is the variety of plants, notwithstanding the periodical weedings with the object of making the collection still more choice, that they almost bewilder by their numbers; and that such an assemblage is necessary proves the extraordinary diversity of taste that exists in cultivators of flowers. There appear to be not only local, but national fancies. In one district a mania sets in for Pelargoniums, another for Fuchsias, another for Begonias, and so on; while in the Continental, American, and Australian markets there are 'runs' on plants that are not



Gold Medal awarded at the Great Show at Ghent.

are scattered all round the globe.

"After seeing all that was to be seen, and much more than I can remember, I left Swanley with a feeling of astonishment at the widespread love for plants that now exists, and which must be growing yearly, or how else could such establishments as this be maintained so well? It is truly wonderful, and the more so as all appears to be flourishing and extending. This is a healthy hopeful sign, as it is directly indicative of the public taste-a taste, no doubt, that has been, in a great measure, created by these enterprising florists, who have secured the best varieties that have been raised at home and abroad, and let the world know they possess them," &c.—Yournal of Horticulture, November 1, 1883.

"Royal Hotticultural Society.—Single, Pompon, Fancy, and Show Dahlias were staged in splendid style by Messrs. H. Cannell & Sons, who were awarded a Silver-gilt Medal. The Singles included several navelities of great interest of the Cactus Singles included several navelities of great interest of the Cactus double flower of a bright orange colour, very distinct and effective. Messrs. Cannell & Sons in addition showed a collection of Zinnias, which represented a fine strain of these splendid annuals."

"Speaking of Trowbridge remnds me of one of the competitions there of Trowbridge remnds me of one of the competitions there of the competitions there are not only the competition to the competition of the competit

"Messrs, Cannell & Sons made a pretty little picture in the great hall at the Ghent Exhibition with groups of double purple Cinerarias (Mr. Thomas Lloyd), and Zonal Pelargoniums attracted many admiring eyes, and to a certain number were recognisable on the lostant as productions of the Swanley Nurseties.

Numeries.

"Gardners' Magazine, June 26, 1883.

"Royal Horticultural Society.—Messrs. H. Camell & Soos exhibited a very large collection of cut flowers and a bank of Pelargenniums. The cut flowers included several splendid stands of Verbeaus, comprising about thirty of the finest varieties at present in ealth-utice of the present in ealth-utice and present in ealth-utice and present in ealth-utice.

The Gardeners' Magazine, May 19, 1893.

"Royal Botanic Society's First Summer Show,—Messre.
Cannell & Sons were awarded a large Bronze Medal for a fine collection of Calceolarias."

collection of Calceolaras."

The Gardener's Magazine, April 14, 1883.
"Messrs. Cannell also showed Chrysanthenum segetum fi-pl., a valuable double variety of a fine form and rich golden-yellow, habit dwart and compact, and by judicious management the plants can be flowered all the winter; a collection of Single Anemones, which presented a very attractive appearance, and fully demonstrated their value for garden decoration. The firm was awarded a Bronze Banksian Medal.

The Gardeners' Magazine, June 13, 1883.

"Royal Botanic Society's Second Summer Show.—The magnificent display of cut Pelargoniums and Verbenas from Messrs, Cannell & Sons was awarded a Silver Medal,"

Gardeners' Magazine, July 28, 1883.

"Royal Honticulural Society—Mesars. H. Canaell & Sons exhibited densely flowered, and admirably represented their superb strain of those useful annuals. The flowers are of large size, very double, and effectively coloured."

Gardeners' Magazine, June 26, 1883

"Pelargonium Society —Messrs. Cannell & Sons necupied the first place with a stand, in which the flowers were of the highest quality and admirably set up."

Gardeners' Magazine, July 14 1883.
"'Crystal Palace Rose Show.— Messrs H. Cannell & Sons' collection of Verbeaus, Regal and Zonal Pelaryoniums, and Delphiniums, in the finest condition, and were staged with much taste and judgment,"

"Royal Haticultural Society—Measts. Camad & Syns ex-hibited double Primuls and named Cincerais in selendid condition, and were awarded a Silver Medal. The double Pri-mulas were especially well grown, the plants being of a lorg-size, compact, and bearing a profusion of flowers of superb quality."

"Chinese Primulas from Messrs. Cannell & Soas.—They are surprisinely fine, the light colours being of extra size and stout as parchment, and some of the full-coloured dazzling in their brillancy."

as parament, and some of the indicoloured dazzing in their brilliancy.

"Horticultural Society's Commutees,—Messrs. H. Cannell and Sans staged a very attractive group of Frimulas, amongst which their beautiful variety the Princess of Wales was consciours; this type was awarded a Frast-class Certificate twelve special control of high-coloured strains, was admirably shown; and Swaoley White, which occupies a leading position amongst the white, was admirably shown; and Swaoley White, which occupies a leading position amongst the white, was admirably spread, and the white was admirably spreading the white which occupies a leading position amongst the white, was admirably spreading the white white, was admirably spreading the white was admirably spreading the white was admirably spreading the white was admirably spreading to the white was admirably spreading the white was a superior with the work of the work o

me condition—their new decorative Fuchsia."

The Journal of Horticulture.—Royal Horticultural Society, July 24, Fruit Committee.

"Messrs. Cannell & Sons contributed a collection of double Balsams, the flowers extremely large and full; and a beautiful collection of Ficotees and Carnations, including all the best varieties."

varieties."

The Journal of Horticulture.—Royal Horticultural Society

"Messrs. H. Cannell & Sons contributed largely to the
attractions of the display, several groups of Cinerarias, Primulas,
and other plants being staged. Cuerarias comprised two
magnificent varieties, viz., Victory, a surprisingly handsome
crimson form, which was certificated. March Past flowers are
of wonderful site and substance, rich velvely crimson in colour,
and white at the base, forming a narrow ring; halit strong,
and white at the base, forming a narrow ring; halit strong,
condition. Primulas were extremely good examples of culture,
Alba pleua being most profusely flowered in sinch pots, bearing
twenty large tusses of large double pure white flowers. A
Silver Medal was deservedly awarded the collection.

Pelargonium Show, June 26, 1823.

Pelargonium Show, June 26, 1883,
"Messrs. Cannell & Sons took First Prizz with twenty-four varieties uncommonly fine in size and colour, and also in the thirty-six varieties took the lead with a magnificent collec-

tion."

"Journal of Horticulture, December 6, 1883.

"Messys. Cannell & Sons send us flowers of ther. New Departure single Chrysanthemums, which comprise some pretty and delicately-coloured varieties. These were admired by Horticultural Society at Kensigton, and as single flowers are just now becoming such favourites it may be expected that they will have a large share of popularity. They are light and graceful in appearance, the colours ranging from crimson, to roce, pale pink and white, the central rubbar flyres being certain oppular acturs, actresses, and of view."

Pennal Hartfeelund Society. Secret.

Royal Horticultural Society, September 11, 1853— Solver-gilt Medal was awarded to Messrs. Cannell and Sons, who contibuted a very handsome collection of Dahlia blooms, representing all sections—the Show and Fancy varieties were every fine, blooms of picta formosissima, orange colour, with searlet streaks. Several stands of fine Zinnias were also staged.

also staged."

"Sour nal of Horticulture, December 13, 1883.

"Single Chrysanthemums.—We alluded to this New Departure last week. These single Chrysanthemums, which, we are informed, were first brought into notice by C. L. Tee-dale, Esq., Chichester, through Messrs. H. Cannell & Sons, are not only likely to become popular for vace decoration, for which purpose the ordinary double forms are fully too heavy, but they are naturally late in flowering, which renders them additionally acceptable, and the foliage is usually free from midew. Mr. acceptable, and the foliage is usually free from midew, Mr. in his nursery is now as white as millers, the lewes of the singles are as green as Leeks, and certainly all the examples that have been sent to us were free from the unsightly parasite."

Juny 12, 1883.

July 12, 1883.

have not been to Swanley let them call at once on Messer.

Cannell & Sons, the the flowers in their nursery and the
fruits all round it, they will see sufficient in a few hours to think
about for years.

Cannell & Sons, and with the flowers in their nursery and the funits all round it, they will see sufficient in a few hours to thisk about for years. **Cardener*** Nagazine.**

"At all times and suffering the work the work nurseries are rich in attractions, and afford pleaty to well-known nurseries are rich in attractions, and afford pleaty to well-known with the rangaged in floring that the control of the other the quarters and houses are bright with colour and full of interest, and it is not possible to proceed far without being struck with the rare judgment with which the various college struck with the rare judgment with which the various college struck with the rare judgment with which the various college struck with the rare judgment with the law to the complete collections of lyvleaved Pelargoniums, Tuberous Begonius, Tuberous Begonius, Tuberous Begonius, Which are in the finest condition, and afford a successful successful the successful successfu

The Gar Ien, September 11, 1883.

"Royal Horticultural Society.—Messis, Cannell, & Sons had a fine collection of Show, Single, Pompon, and Cacuss Dahlias, and also Double Zimias, the finest formed flowers we have seen, and very vaited in colour; a Silver-gilk Medal was awarded.

The Garden, July 24, 1883.

"Royal Horticultural Society.—Messrs, Cannell & Sons exhibited a collection of double Balsams; Rowers very large, perfectly double, and of bright and varied colours."

"Viola Countess of Kintore — This is a novel and truly charming kind, and was shown findly the other day by Mr. Cannell. The flowers are large, white in ground, with a big irregular blue blotch in the middle. It is robust, dwarf, and frea should, when abundant and better known, become a universal favourite."

avoutte. The Gorden, June 26, 1882.

"Royal Horticultural Society.—Mesars. Camell & Sons made a bright display of cut flowers and plants A socre of ital spakes of Delphiaiums were a beautiful feature, distinct from anything eise in the show."

The Garden, March 24, 1883.
Primula Princess of Wales, a charming blush-tinted variety, shown in lovely condition by Mr. Cannell."

The Garden, March 3, 1883.

"Where can be seen in the dead of winter such a grand show of Pelargonium blooms, or mure finely grown and bloomed single and double Primulas, than at Swanley?"

The Gorden, April 15, 1883.

"International Honizoltumia Exhibiting Ghent.—A group of the double-flowered Cineraria, Mr. Thomas Lloyd, and same cut trusses of Single 2 and Pelagonium, exhibited by Mesure Cannell & Sons, which won the admiration of every one. A Gold Medal was awarded."

H. CANNELL (F.R.H.S., H.M.C.A.B.) & SONS, Exporters and Importers of all New and Choice Flowers and Seeds to and from all parts of the World,

THE HOME OF FLOWERS, SWANLEY, KENT, ENGLAND.

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ROYAL HORTICULTURAL SOCIETY. NOTIFICAL TURAL SOCIETY,
South Kessigton, S.W.
NOTICE !— COMMITTEES MEETING, Fruit and
floral at 11.4M., in the Conservatory; SCIENTIFIC at 11.2M.
ANNUAL GENERAL MEETING at 3.7M., in the Conservatory, on TUESDAY NEXT, February 12.
N.B.—At this Meeting Candidates for Fellowship will be
elected,

CRAY S TAL PALACE.—

HORTICULTURAL EXHIBITION
ARRANGEMENTS for 1884:—
SPRING EXHIBITION of FLOWERS, &c., PRIDAY
FIRST SUMMER EXHIBITION, 97 FLOWERS, &c., PRIDAY
FIRST SUMMER EXHIBITION, 98 grad 94.
The GRAYURDAY, April 4 and 5.
The GRAYURDAY AND THE STAND NATIONAL
DAHLIA SHOW, September 5 and 6.
GRAT AUTUMN FRUIT, ROOTS, &c., and GRAND
HATERY ALL OF COMPANY OF THE STANDAY
OR AND CHRYSANTHEMUM EXHIBITION, with the held during the Festival)
GRAND CHRYSANTHEMUM EXHIBITION, WILLIAM
HARDY DECORATIVE SHRUES, &c., PRIDAY
HARDY DECORATIVE SHRUES, &c., PRIDAY
HARDY DECORATIVE SHRUES, &c., PRIDAY
HOUSAND, Kovember 14 and 15.
ONE OF THE STANDAY OF THE STANDAY
ONE OF THE STANDAY OF THE STANDAY OF THE STANDAY
ONE OF THE STANDAY OF

Mr. W. G. HEAD, Garden Superintendent. Crystal Palace, S.E.

ILIUM AURATUM .-Good, plump, sound Bibls, 47, 67, 98, 128, 138, and 245, per dozen; extra strong, 30c, and 425, per dozen. All other good LILLES at equally low prices.

Mr. WILLIAM BULL'S Establishment for New and Rare Plants, 356, King's Road, Chelsea, London, S.W.

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Trade on application.

Sleaford, Jannary, 1884.

FRUIT TREES and ROSES.—A large and select stock is now effect for sale. The Illustrated and Descriptive CATALOGUE of Fruits post-free for threepence, the Descriptive CATALOGUE of Roses post-free. THOMAS RIVERS AND SON, The Nurseries, Sawbridgeworth, Hetts.

REEPERS for Walls, Trellises, &c., in object may easily be made beautiful. Descriptive LIST and advise on application. With H AND CO., Nurserymen and Seed

PROFITABLE POTATO GROWING.

SUTTON'S NEW PAMPHLET.

" POTATOS AS A FIELD CROP."

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GRATIS AND POST-FREE ON APPLI-

S U T T O N AND S O N S,

READING, BERKS.

Daffodil, Daffodilly, Daffodowndillies.

A DESCRIPTIVE CATALOGUE of more than zoo sorts of DAFFODILS free on application.

BARR AND SON, 12, King Street, Covent Garden, W.C.

A NEMONE JAPONICA ALBA and ROSEA.—30,000 very strong Plants for planting or potting, 16, per 100, or 21, 6d, per dozen. Special quotations to the Trade. HY, GODFREY, Nurseryman, Stourbridge.

Seed Catalogue, 1884.

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GRAPE VINES.—A fine stock in leading varieties, Planting and Fruiting Canes. Apply to FRANCIS R. KINGHORN, Nurseryman, Richmood.

TWENTY THOUSAND RASPBERRY CANES for Sale, of Semper Fidelis, the best kind for preerving grown, and very heavy cropper. They are ready acked in hundles of 250 Canes, at 7s. 6d. per bundle, or 88s.

per 1000. HY. CHAPMAN, Twickenham Road, Isleworth, S.W.

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A. CATTANEO, COMMISSION SALESMAN,

4. HAITSiret, and New Flower Market, Covent Gardeo,

W.C. is open to RECEIVE CONSIGNMENTS of CHOICE

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WANTED, large straggling Plants of ALBA
PLENA 'CAMELLIAS' for training against wall,
must be healthy and cheap, Also CAMELLIA STOCKS fi
for immediate working. Also Two good Plants in pots or tubs of
MACNOLIA GRANDIFLORA, Exmounth variety, with
flower-buds. Quote particulars and lowest eash price to
CHARLES RERSHAW, Slend Sylve Nurseries, Brighouse.

WANTED, EUCHARIS, GARDENIAS, ROSES, ORCHOIDS, STEPHANOTIS, TUBE-ROSES, and other choice CUT FLOWERS.
W. DENMAN, Salesman and Horticultural Agent, Covent Gardeo, W.C.

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WANTED, either Stock Plants or rooted Cuttings of variegated lyyleaf GERANIUM. State price and quantity to
W. MILES, West Brighton Nurseries, Hove, Sussex.

WANTED, MAHALEB STOCKS.
Address, J. EDMED, Newington, Sittinghourne, Kent.

WANTED, large Plants of ASPIDISTRA LURIDA VARIEGATA, FICUS ELASTICA, PANDANUS VEITCHII, DRACENA TERMINALIS, for Stock, in EXCHANCE for other Plants or Cash. JOHN LEMAN, Olaciple Nursery, Chigwell Row, Essex.

WANTED OFFERS OF CONIFERÆ, SHRUBS, from 12 to 18 inches, for transplanting. Samples and lowest prices to RICHARD CRUST AND SON, Nurserymen, Spalding.

WANTED, strong HAWTHORN QUICK, from 3/4 to 4 feet, and upwards. HOLLIES, t to 3/4 foot. Also strong Standard APPLE TREES, Fot and Cider sorts. Apply to

THE EXECUTORS of the late BENJAMIN WALLER beg to announce, that the BUSINESS WILL BE CARRIED ON AS USUAL All Orders cotrusted to them will be punctually and carefully executed. Burnt Ash Lane Nurseries, Lee, S.E.

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H. AND F. SHARPE have posted their
SHARPE have posted their
Mulesale CATALOGUE of Home-grown Garden
and Agricultural Seeds, and will feel obliged to those in the
Trade who have our received it if they will make application,
and an additional one will be sent them at once.
Seed Growing Establishment, Wisbech,

TAPAGERIA ALBA,

LAPAGERIA RUBRA SUPERBA, 30r. per dozen.
The above are strong crowns, rooted similar to Asparagus, and now ready for potting. Carefully packed in moss.
R. H. YERTEGANS, Chad Valley Nurseries, Edgbaston,

PLANTS for GREENHOUSES, &c.—The best kinds of Camellia, Azalea, Bouvardia, Crotoa, Epiphyllum, Gardenia, Ixora, Primula, Rhododendroa, Erica, Epacris, Climbers, Ferns, &c., fully described in LIST, free to

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RICHARD SMITH AND CO., Worcester.

KELWAY AND SON'S CATALOGUE of GLADIOLI, describing all the varieties worth growing, and at prices as low as those of any other house, will be forwarded on application.

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First-class Certificate was awarded at Kensington. A heantiful rose-coloured Self, very highly-scented, of great size, very
full, and of perfect shape; does not hurst the calyx, a very free
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SEEDS.-Vegetable, Flower, and Farm, care-O fully selected, reliable, and moderate in price. Illustrated LIST, containing copious interesting and useful information, free.

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Standard Walnute,

LANE AND SON have a large stock to

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Choice Show and Fancy Pelargoniums.

CHAS. RYLANCE has on hand a large stock of the above, all raised from his exhibition varieties, which took the First Prizes last season at both Manchester, York, and Leeds, and other Local Shows. For price and particulars apply to Bold Lane Nursery, Aughton, ocar Ormskirk.

CHRYSANTHEMUMS.—Well rooted Cuttings for Sale, now till April. 12 distinct camed best and new varieties for 22, 6d, the 12.—Post-free for cash sent with order to J. ADDISON, Post-office, Penruddock.

CHRYSANTHEMUMS—400 varieties, best sorts, and true to anme. Cuttings, W. E., is selection, 1s. 4d. per dozen, sp. 6d. per 100; Plants, ditto, as. per dozen, no. per 100; Cuttings, Buyer's selection, 1s. 6d. per dozen, 101. per 100; Plants, &c., as 6d per dozen, 5c. per 100. For new varieties see CATALOGUE, 1 stamp.
WM. ETHERINGTON, Maor House, Swanscombe, Kent.

TO OFFER, Standard APPLES, PEARS, and PLUMS, Maideo APPLES, PEARS, and PLUMS, DAMSONS, PEACHES, and NECTARINES. Trained APRICOTS, PEACHES, NECTARINES, PEARS, and Morello CHERRIES. Dwarf and Half-standard ACER NEGUNDO VAR.
W. FLETCHER, Ottershaw Nursery, Chertsey, Surrey.

N E W R A S P B E R R Y, "BAUMFORTH'S SEEDLING."

Testimenial from Mr. Thomas Laxron, Bedford:—
"Baumforth's Seedling' Raspherry has again proved the best of all Red Raspherris tried at Ciritfod (14 varieties)."
Prices—Plasting, of the production, 42 per dosen; Fruiting Cares, 337; Pe Early orders respectfully solicited.
EDMUND PHILIP DIXON, The Yorkshire Seed Establishmeat, Hull.

SALES BY AUCTION.

This Day.—(Sale No. 6;87;)

CONSIGNMENTS of PLANTS from GHENT, &c.

M.R. J. C. STEVENS will SELL by
AUCTION, at his Great Rooms, 36, King Street,
Covent Garden, W.C., THIS DAY, February 9, at half-past
ze o'Clock precisely:— AUCTION, at his Observation of the Day's February 9, at hausposses of Clock precisely:—
15 o'Clock precisely:—
CAMELIAS, AZALEAS, RHODODENDRONS, PALMS, &c., from Ghent.
First-class ROSES from English Nurseries.
First-class ROSES from English Nurseries.
FIRST-CLASS ROSES STATE CONTROLLING PLANTS, GLADIOLI, FIRST-CLASS STATE CONTROLLING TO SALE, and CATALOGRAPH AND CONTROLLING OF SALE, and CATALOGRAPH AND CONTROLLING OF SALE AND CATALOGRAPH AND CONTROLLING OF SALE AND CATALOGRAPH AND CONTROLLING AND CONTROLLING OF SALE AND CATALOGRAPH AND

On view morning of Sale, and Catalogues had.

Monday Next.—(Sale No. 6588)

M.R. J. C. STEVENS will SELL by

AUCTION, at his Great Rooms, 38, King Street,

COVERT Garden, W.C., on MODDAY NEXT, February 11, at

half-past to o'Clock precisely:—
goot LILIUM AURATUM from Japan, in fine condition.

Home-grown LILIES,

COCOT TUBEROSES, Bulba from Mexico.

SOCOT TUBEROSES, Bulba from Mexico.

SOCOT TUBEROSES, BUBBLEORA

BULBS, & CLONINIAS, GLADIOLI, and other

BULBS, & CONTROL OF SALE, AND SALE

Wednesday. Next.—(Sale No. 650).

On view morning of Sale, and Catalogues had.

Wednesday Next_Cisle No. 6590-)

HARDY PLANTS and BULUS.

M.R. J. C. STEVENS will SELL by
Covent Garden, W.C., on WEDNESDAY NEXT, February 13,
at half-past is o'Llock precisely.
FRUIT TREES, HARDY CONTERS, HOLLIES,
FLOWERING TREES and SHRUBS, CAMELLIAS,
AZALEAS, PALMS, and other GREEN HOUSE PLANTS,
GLADIOLI, LIUMS, &c.
On view morning of Sale, and Catalogues had.

Thursday Next — (Sale, No. 6591.)

Thy Corted Dorch To Sale, No. 6591.)

M.R. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, February 14, at half-past 23 of Cleck precisely.

A fine many-bulled specimen in flower of LæLIA ANCEPS ALBA.

Also a fine lot of CATTLEYA CHOCOENSIS, dark lipped

variety; CATTLEYA MOSSIÆ, an Odontoglossum from Peru, And other importations, by order of Mr. F. Sander, St. Albans. Also 3000 fine Bulbs of LILIUM AURATUM from Japan.
On view morning of Sale, and Catalogues bad.

Thursday Next.—(Sale No. 6591.)

N. J. C. STEVENS will include in his Street, Covent Garden, W.C., no THURSDAY NEXT, February 14—1500 plants of ARAUCARIA EXCELSA, in cases as received, ne condition.

On view morning of Sale, and Catalogues had.

On view morning of Sale, and Catalogues hard.

Collection of Established Orchids

M.R., J. C. STEVENS will SELL by AUCGarden, W.C., no WEDNESDAY February 20, at half past
2 o'Clock precisely, the COLLECTION of ORCHIDS

formed by E. H. Moss, Esq., of Ravenscroft, including—
CATILEYA MENDELII, C. TRIANS., MAGNIFICA
and ATALANTA, LællA ELEGANS PRASIATA, DENARDINIMA JAMESIANDM. SC.

AND INDEXISED AND SECTION OF CONTROL

AUGUST AND

The Valuable Collection of Orchids and other Plants formed by the late Robert Haabury, Esq.

M.R., J. C. STEVENS has received instructions from the Executors to offer for SALE by AUCTION East from the Executors to offer for SALE by AUCTION EAST, THE REAL TO SALE BY AUCTION EAST, WHICH IN THE PLANTS of the East of the

Wednesday Next.

Wednesday Next.

HIGH-CLASS POULTRY and PICEONS.

YESSRS. PROTHEROE AND MORRIS

will SELL by AUCTION, at their Central Sale Rooms,
67 and 68, Cheapaide, E.C., on WEDNESDAY NEXT,
half-past 12 o'Clock precisely, about
500 jotent High-class POULTRY and PICEONS, including
birds from some of the principal exhibitors and breeders in the
Kingrinn

birds from some or the philosper annual form some time philosper and at the Sale Rooms, and at the Anctioneers Offices, 8, New Broad Street, E.C. N.B.—These Sales take place every WEDNESDAY, and entries should be made? Javay previously.

Important Sale of Handsome English-grown CAMEL-Important Sale of Handsome Engusia-grown Cameli-LIAS, 1 to 3½ feet, beantifully set with bloom-buds; AZALEA INDICA and GREENHOUSE PLANTS in variety; selected FRUIT TREES; goo fine Standard and Dwarf ROSES, hardy A BERCH STORY ROOTS, &c. FERSES, SPROTHEROE AND MORRIS WILLIAM SELL the above by AUCTION, at the City Auction Rooms, 38 and 39, 120 Clock precisely. Good of the Company of the University of the Company of the Comp

Friday Next.—Valuable Orchids.

MESSRS. PROTHEROE AND MORRIS
are instructed by Mr. F. Sander to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C.,
or FRIDAY NEXT, February 15, at balepast 1s o'Clock

on FRIDAY NEXT, February 15, at balfpast 1a o'Clobe precisely—
A fine variety of the white-flowered type of LeELA A fine variety of the White-flowered type of LeELA A fine variety of the Precision Section (CTF) and the Company of the Precision Section (CTF) and the Company of the Very of the V

Friday Next - Odontglossum Edward!

(very rare), a grand 'rlant in flower, with over eighty blooms.

MESSRS, PROTHEROE AND MORRIS

will include the above in their ORCHID SALK on
FRIDAY NEXT, together with other ORCHID in flower.

On view moraing of Sale.

On view morning of Sale.

Walham Green, S.W.

Expiration of Lease. CLEARANCE SALE.

MESSRS. PROTHEROE AND MORRIS

are instructed by Mr. Whittle to Sell. by AUGTION, on the Fremies. The Eschol Nursery, Walham Green,
S.W., on TULEDAY, February NURSERY STOCK, including
a large assortment of CONIERS and EYERGREENS,
ORNAMENTAL TREES in variety, large quantities of
LAURELS, AUCUBAS, and HOLLIES, EUDWINUS,
THOSE AUGUBAS, and HOLLIES, EUDWINUS,
MARCHANGE MOULD, FOTS, EDGING TILES, &c.

TAOP, LOANGE MOULD, FOTS, EDGING TILES, &c.

By the viewed. Catalogues had on the Fremises, and of
the Auctioneers and Valuers, 67 and 68, Cheapside, and 8, New
Broad Street, E.C.

Eaton Nurseries, near Norwich, GREAT CLEARANCE SALE. Fourth portion of the beautidally grown NURSERY STOCK, by order of Messrs, Ewing & Co., who are giving up their Business.

business.

MESSRS. PROTHEROE AND MORRIS

are instructed to SELL by AUCTION, on the Premises, the old-eath-lished Nurseries at Eaton, near Norwich, on WED
crop of the Control of the Control of the valuable of the Control of the valuable NURSERV STOCK, comprising Several Thousand thriving young FRUIT TREES, well grown and trained for Pyramids, Bushes, Walls, &c.; 10,000 currants and Gooseberries; ao,000 Kitchen Garden Roots, such as Seabele, Rhubarb, Asparagus, Raspherry Canes, &c.; 5000 roots extra fine and large STANDARD ORNAMENTAL TREES, many times transplanted, and exceedingly well rooted, suitable for immediate effect.

2000 Standard and Dwarf ROSES of choicest sorts of H. P.'s, Teas, &c.

acco Standard and Dwart NOSSO. Standard and Dwart NOSSO. Standard and Dwart NOSSO. Standard and Variegated Foliaged SHKUBS. FOREST TREES of various sorts and sizes, including a large quantity of WILLOWS, POPLARS, ELMS, LIMES, and Sweet CHESTNUTS, &c. A quantity of choice EVERGREENS, CONTERS, &c. The Lots will be so arranged as to suit both large and small

buyers.
May be viewed. Catalogues on the Premises, and of the
Anctioneers and Valuers, 67 and 68, Cheapside, and 8, New
Broad Street, E.C.

Grand New Aerides.

MESSRS, PROTHEROE AND MORRIS

have received instructions from Mr. F. Sander to SELL
by AUCTION, at their Central Sale Rooms, 67 and 68,
Cheapside, E.C., no FRIDAY, February 22, a wonderful potential of an extraordinary and most beautiful new
AERIDES.

Full particulars will appear in next week's advertisement.
67 and 68, Cheapside, E.C.

To and cs, theapsaic, E.C.

Sunbury, Middlesex.
Only 16 miles from Lundon.
Ey Order of the Executors of the late Mr. R. N. Osborn.
IMFORTANT to FLORISTS, NURSERYSIEN,
EVILLDERS, and OTHERS.
MESSRS. PROTHEROE AND MORRIS
Rooms, 67 and 68, Cheapsade, E.C., on THURSDAY, March & at a O'Clack precisely (unless an anceptable offer be made in the

Rooms, 67 and 68, Chespade, E.C., an THURSDAY, March 64, at a 'Olcak precisely (unless an acceptable offer be made in the meantime)—

Lot 1: The important FREEHOLD ESTATE known as Osborn's Old Nursery, Sunbury, about ten, minutes' walk from the Railway Station, constaining an area of 11% Acres, or thereabouts, of extremely productive Land's also after the most modern and innovaed principles; ranges of the characteristic for the most require transported to the most modern and innovaed principles; ranges of 11st, and other requisite Trade Bialdings. The Auctioneers would beg to call the attention of Nurserymen to this important property. The firm of Messrs. Osborn enjoyed a wide reputation for the growth of Pruit Trees and Roses, and at its needless to mention that the base of the state of

Woolston, near Southampton.

M.R. F. W. ABRAHAM will SELL by AUCTION, on WEDNESDAY, February 13, at 2 o'Clock precisely, on land adjoining the "Woolston lun," Woolston, a choice very NURSERY STOCK, in all sires and varieties, including choice ROSES, FRUIT TREES, CONIFERS, and EVENGREENS.
Catalogues can be had of Mr. PENNY, at the Hotel, or of the Auctioneer, 17, Tanfield Road, South Croydon, and Woking, Sorrey.

Church Road, Kingston, near Portsmouth.

M.R. F. W. ABRAHAM will SELL by
AUCTION, on SATURDAY, Febburay 16, at halfpast ap Clock precisely, at the "Red House" Hotel Grounds, a
large and chole assortment of NURSERY STOCK,
removed from a large Nursery for convenience of Sale, consisting of FRUIT and FOREST TREES, CONIFERS,
R. Catalogues of Mr. H. BRANSBURY, at the Hotel; or of
the Auctioneer, South Croydon, and Woking, Surrey.

Fareham, Rants.

MR. F. W. ABRAHAM will SELL by
AUCTION, on MONDAY, February 18, at a o'Clock
precisely, at the Bugle Rooms, High Street, Fareham,
NURSERY STOCK,
in choice variety; ROSES, FRUIT TREES, CONIFERS,
PARK and other TREES and SHRUBS.
Catalogues of Mr. 11T1, at the "Bugle" Hotel; or of the
Auctioneer, South Croydon, and Woking, Surrey.

Croydon, Surrey.—Great Sale on Wednesday Next, at a o'Clock precisely, without reserve.

To Nurserymen, Gardeners, and Others.
15,000 ORNAMENTAL TREES, SHRUES, and ROSES, also PLUM, GOOSEBERRY, CURRANT, and other FRUIT BUSHES.

MESSRS. BLAKE, HADDOCK, AND CARPENTER have received instructions from a large to the contraction of the contract of the co

Nursery and Seed Business to be Disposed of.

O BE DISPOSED OF, in consequence of
failing health of the Proprietor, the old-established
NURSERY and SEED BUSINESS carried on under the
style of Joseph Tremble & Son, Pennth, Cumberland.
For particulars, apply to Mr. HUGH G. PATTINSON,
Orcenfield House, Pennth.

TO BE LET, and may be entered upon on Stable, &c., now in the occupation of Mrs. Mitcheson, and situated in Pelaw Leazes, on the south side of Gulesgate, in the City of Durhan-formation apply to Mr. WILLIAM FORSTER, Surveyor, Loadouderry Offices, Sasham Harbour.

TO BE LET on LEASE, with possession, capital NURSERY GROUND, with 5 large Class Houses or Froing Pris, and Heating Apparatus to same, with large Dwelling-House and suitable Optimization of the Medical Control of the Medical Contr

Surveyres, 6, John Street, Bedford Row, W.C.

To Nurserymed, Florials, and Greengroopers,

OLET, with Immediate Possession, an
Oldestablished and Productive Walled GARDEN, of
about Gestablished and Productive Walled GARDEN, of
about Florial Florial Florial Florial Florial
Houses, First and Frames, Gardener's House, and ample Sione
Houses, and about 1 acre of unwalled Garden adjoining,
Stituated at Bollam, 1½ mile from Tivetton, Devon, on the
Great Western Railway.

Also, if desired, there would be LET with the above a good
SHOP in West Exeter Street, Tiverton, admirably suited for a
Greengroof actionaries of H. J. W. COULSON, Estate Office,
Leat Street, Tiverton, Devon.

T MILLINGTON AND CO., ENGLISH and FOREIGN SHERT and PLATE GLASS, WHITE LEAD, MILLED LEAD, OHIS, and COLOUR MERCHANTS, 43, COMMINITED STREET, E.

Landscape Gardening.

THE FORMATION of NEW, RENOVATION or ADDITION to existing GARDENS,
PLEASURE GROUNDS, and ESTATE IMPROVEMENTS generally, carefully executed, by Contract or other-

wise, WILLIAM DINNES, 30, Richford Street, Hammersmith, London, W.

solihull, 1st January, 1884. Gentlemen,

I beg leave to inform you that I have this day Sold the Business of a Nurseryman and Seedsman hitherto carried on by me at Solihull and Birmingham to

Mesers. C. W. FALCON & J. F. L. EVANS, by whom the Business will in future be carried on, under the Firm of

"THOMAS HEWITT & CO."

The new Firm have authority to receive on my behalf all Debts due to me to date. Yours obediently,

THOMAS HEWITT.

EUCHARIS AMAZONICA.—Strong
Flowering Bolbs, a few hundreds at low prices.
W. DENMAR, Salesman and Horticultural Agent, Covent
Garden, W.C.

ARCH, 3½ to 5 feet, twice transplanted, and lifted in the Root, Spring, 188a. To be sold very RICHARD GREGORY, Froggatt Nurseries, Calver, via

CLEMATIS COCCINEA.—Perfectly hardy Climber, free blooming. Flowers rich Coral-red. For prices of this and many other Roots for present Planting see our General Seed CATALOGUE free no application. WATKINS AND SIMPSON, Seed Merchants, Exeter Street, Strand, W.C.

CTRAWBERRY PLANTS of V. H. de Thury, President, Rivers' Eliza, and others, at 101, per 1020. Sample box of plants by parcels post, 3d. Pamphlet on Strawberry Growing, 6d.
W. LOYEL AND SON, Strawberry Growers, Driffield.

ARCH, 1,500,000 well-grown, to offer, as below:--100 feet, 101, 125, 00 % feet, 101, 1 at 0 feet, 101, 1 feet, 1 feet,

ARCH.—POTATOS. — Superior LARCH
Plants for sale very cheap—2 to 3 feet, 172. 6d. per 1000.
The celebrated new POTATO, Readung Hero, price on rail,
72, per cwt., bag included. Also the famous White Elephant,
at 62. 64 per cwt. Cash with order.
A NOTE: HARNETT, Worplesdon, Guildford.

Duglasii, 1 to 1½ foot, 24x per 100; 1½ to 3½ feet, 20x per 100; 1½ to 1½ feet, 20x per 100; 1½ to 1½ feet, 20x per 100; 1½ to 1½ feet, 20x per dozen. Cedus Beodara, 4 to 5 feet, 1å: per dozen (5 det) feet, 20x per dozen. Cedus Beodara, 4 to 5 feet, 1å: per dozen; 6 to 7 feet, 36x; 18 to 9 feet, 60x, per dozen. Cryptomeria elegans, 1½ foot, 20x per 100; 1 feet, 60x per dozen. Cupressus soniaan stituta, the finest of all, 2 to 1½ feet, 75x per 100; 13 to 4 feet, 15x per dozen. Cupressus amarcacarpa, 1½ to 2 feet, 6x per dozen. Cupressus, 8 to 9 inches, 16x per 100; 12 to 18 inches, 20x per 100; 20x per 100; 10x feet, 20x per 10x per 10x feet, 20x per 10x pe orealis, 2 feet, 50s. per 100. GARLIES MITCHELL, Nurseryman, Stranraer.

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ACACIA ARMATA, splendidly budded, extra fine, 75s. and

ADIANTUM CUNEATUM, 75. per 100.
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AZALEA AMENA CALDWELLI, busby plants, splendidly
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AZALEA AMENA (SALDWELLI).

AZALEA AMIENA CALDWELD, Sudded, S. £6, and AZALEA INDICA, in variety, ficely budded, £5, £6, and [per dozen. AZALEAS, forward, just opening, and in flower, 18s. to 30s. AZALEA NARCISSIFLORA, Double White, showing colour,

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SURPLUS STOCK.—Handsome and Choice Evergreen and Deciduous TREES for Avenues, Parks, Gardens, Streets, &c. Very good and cheap. LIST free by post. RICHARD SMITH AND CO., Nurserymen and Seed Merchaots, Worcester.

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TOUGH MY ANY SEARLY ASHLEAF.

10 tous BANA HOYS.

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20 tous PATERSON'S VICTORIA.

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50,000 of excellent stout transplanted LARCII FIR, 24 to 30 inches, 202, per 1002, 18 to 20 inches, 145, per 1000, 20,000 SCOTCH (fine), 12 to 18 inches, 145, per 1000, 5 000 294. transplanted SPRUCE, 162, per 1000.

If the whole be taken, carriage paid to London, Sample, 32, per 100.

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SUTTON'S VELLOW INTERMEDIATE MANGEL, 355,

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LOW PRICES and CARRIAGE FREE.— SEE HOOPER'S CATALOGUE for the choicest FLOWER SEEDS (Illustrated).

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APPLES, 3 and 4 yr., branched, 5 to 7 feet, 9z. per dozen, 50z.
Standard, 4 yr., 5 to 6 feet stems, 50z. to 80z. per 100.
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PEARS, 3 and 4 yr., bracched, strong, of sorts, 92. per dozen, 6xx, per 100.

"Standards, 4 yr., 5 to 6 feet stems, 70x. to 8xx per 100.
Principally Williams" Bon Chrétien, Beurré Diel, Duchesse d'Angoul'eme, &c.
CHERIE, Duchesse d'Angoul'eme, &c.
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Trade Price Current.—Seeds, 1884
THE LAWSON SEED AND NURSERY
COMPANY (Limited), will be glad to Post their Angual
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TLOWERING SHRUBS,—Lilac, Mock Cytisus, Hydragae, Hypericum, Mezereum, Ribes, Spirran, Rhus, Viburunm, &c., &t. per dozen. Descriptive LIST free. RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

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100,000 transplanted LARCH, stout and clean, 2 to 3 feet, 10s, per 1000.
300,000 2-yr. Seedling SCOTCH FIR, Native, 1s. 6d. per 1000.

300,000 a-yr. Seedling SCOTCH FIR, Native, 1s. 6d. per 100 op 2 yr. Seedling, 1-yr. transplanted, SCOTCH FIR, Native, 4s. per 1500,000 a-yr. Seedling, 1-yr. transplanted, NORWAY 5FRUCE, 6s. per 1000.

100,000 2-yr. Seedling, 2-yr. transplanted, White ANERICAN SPRUCE, 15s. per 1000.

12s. per 1000.

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WINDSOR and LONGPOD BEANS.

AND F. SHARPE have fine samples of
Taylor's Windsor, Green Windsor, Monarch, and Green Longpod, and other varieties, all at very low prices, which may be
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CHEAP COVERT for GAME,—
LAURELS, common, very bushy, 1ft, to 2k, £5 per 100.
MAHONIA AQUIFOLIA, very bushy, 1ft to 2k, £5 per 100.
PRIVET, Evergreen, 3 feet to 4 feet, 40c, 1; 5 feet to 3 feet, 50c, per 100.
SPRUCE FIR, 2 feet to 3 feet, bushy, £5 per 100.
A large steek of FOREST and AVENUE TREEST and AVENUE TREEST and AVENUE TREEST in stock. CATALOGUES free.
K. TUCKER, Nurseries, Faringdon, Berks.

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PECIAL OFFER.—ASH, 2 to 3 feet, 200, per 1000; Spanish CHESTNUIS, 2 to 3 feet, 200, per 1000; Spanish CHESTNUIS, 2 to 3 feet, 200, per 1000; 12 to 3 feet, 142, per 1000; 2 to 3 feet, 142, per 1000; 3 to 4 feet, 122, per 1000; 2 to 3 feet, 142, per 1000; 12 to 4 feet, 102, per 1000; 12 to 10 to 15 inches, 200, per 100; 12 to 10 to 15 inches, 200, per 100; 12 feet, 122, per 1000; 12 to 10 to 15 inches, 200, per 100; 12 to 10 to 15 inches, 200, per 100; 12 to 12 feet, 142, per 1000; 12 to 3 feet, 144, per 1000; 12 to 3 feet, 144, per 1000. GARLIES MITCHELL, Nurseries, Strapaer.

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PINUS AUSTRIACA, transplanted, 9 to 12 inches, 7s. 6d. PINUS ADSTRIAGE, views, 15, 6d. per 1000.

LARCH, Native, ditto, 1-yr., 1-yr., 5f. 6d. per 1000.

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RASPS, White Antwerp, 10f. per 100.

RASPS, White Antwerp, 10f. per 100.

IRISH HEATH, Purple, ditto, 10f. per 100.

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White, ditto, 10f. 6d. per 100.

Cash with order.

A V E N U E T R E E S cheap offer—with straight stout stems and good roots TREES-Per dozen. Per 100 BEECH, 8 to 10 feet
CHESTNUT, Horse, 10 to 12 feet

ELM, Carlot 14 feet

1, 10 to 12 feet

1, 11 to 14 feet

1, 12 to 14 feet

1, 12 to 14 feet

1, 15 to 15 feet

1, 16 to 8 feet

1, 16 to 8 feet

1, 17 to 10 feet

1, 18 to 10 feet 60 905.

Mitchell's Gosseberry.

WM. MITCHELL having obtained a Stock of this extraordioary variety of GOOSEBERRY, is now prepared to offer, for the first time, Trees and prepared cuttugs for present plasting. To all Growers, Salesmee, and Buyers of Fruit atteoding Covent Carden Market, this fine arrively is to well known to need description, but to others it for picking them green. 1-77. Frees, 251, per 100; Cuttings, & per 100; Cutt for picking when green.
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To Market Gardeners, Gentlemene Gardeners, and OTHERS ABOUT to COMMENCE BUSINESS.
JAMES FARRAR AND CO. have to announce the Publication of their TRADE SEED CATALOGUE, which will be forwarded, post-free, on application.
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Single, mixed colours, 1s. 6d. 2nd 2s. 6d. per packet.

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Full particulars as to soil, manure, position, preparation of ground. &c., with each packet.

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AUREL, Common, I-yr., 18s.; 2-yr., 22s.; Colchic, 1-yr., ags. per 1000; 3 feet, fibe, 16s. per 100; 4 to 5 feet, extra bushy, 6s. per 100; 4 to 5 feet, extra bushy, 6s. per 100.

EVERGREEN OAKS, 4 to 6 inches, 8os. per 1000.

SWEET BAV, 4 to 6 inches, 70s. per 1000.

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COTONEASTER MACKOPHYLLA, 2 feet, 12s. per 100;

TV, 17th, 18th MACKOPHYLLA, 2 feet, 12s. per 100;

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MANETTI STOCKS, strong, 36s. per 1000.

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100-Dwarf Roses-100

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VARIETIES, Carriage Paid to Edioburgh, Newcastle,
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It is a well-known fact that Roses taken from a cold climate
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RHODDIES, Standard, enmed, with good heads
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full of bloods, and far too, per too.
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PENDETTYA MUCRONATA, 2sr. per too.
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SOO,COO LARCH

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SOO,COO CHESTNUT, Spanish

1½ to 4 feet.

300,COO CHESTNUT, Spanish

1½ to 4 feet.

100,COO ASH

1 to 4 feet.

100,COO ASH

1 to 4 feet.

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Also OEE CH, HAZEL, WILLOW, THORN, CUICK,

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THE ROYAL NURSERIES, SLOUGH.

WHITE CLOVE CARNATION. "THE GOVERNOR,"

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APPLE LORD SUFFIELD, on Crab, Dwarf Maiden, £2 10.5, per 100.

APRICOTS, dwarf trained, 30s. and 36s. per dozen.

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COLCHICA, to 1½ foot, 1½ to a feet, a to 3 feet.

PORTUGAL, to 1½ foot, 1½ to a feet.

ROTUNDIFOLIA, z to 1½ foot, 1½ to a feet.

LAURUSTINUS, ½ to 1 foot, z to 1½ foot, ½ to a feet.

CATALOGUES of Roses, Fruit Trees, Conifera, Shrubs, &c., free on application.

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Orchids in Flower.

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A USTRIAN PINE, extra transplanted, 1½

n. well furnished, 2 to 2½ feet, 16: per 100; 2½ to 3½

CORSICAN PINE, three times transplanted, 1½ to 2 feet, 212. 6d, per 100;

n. mour times transplanted, 1½ to 2 feet, 16: per 100;

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LAUREL Colchic, were bookly, 1 to 1½ foot, 222. per 100;

1½ to 2 feet, 16: per 100; 2 to 3 feet, 25: per 100;

1½ to 2 feet, 16: per 100; 2 to 3 feet, 25: per 100;

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JAMES SMITH AND SONS, Darley Dale
Nurseries, ear Matlock, beg to offer the following in
oice plants:—
AZALEA FONTICA, to 1½ foot, soz. per 100, or 1902, per
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BERBERIA AAR

100-Flowering Shrubs-100
INONE HUNDRED NAMED VARIETIES, Carriage Paat to Edioburgh, Newcaste, Hull, or
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Understand to the Carrier of the Carrier of

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LANEOUS FLOWER SEEDS—This most useful and interesting Caulogue—which should be possessed by real to the most showly Hardy Perennials and such as come freely from seed, choice Hardy and Half-hardy Florists Flowers, the leading and most useful Hardy Annuals, and an extraordinarily fice Collection of Novelties, including many things which have not hefore been offered, and which in the ordinary course canont be provided to the control of the con

JAS. HOLDER AND SON have to offer the above in strong healthy plants, established in small 60-pots, consisting of Show, French, and Spotted varieties to name, 300. per 100; also Extra Strong Plants in a-8-pots gred dozen, 60x, per 100. Also Double-flowering Try-leaved PELARGON/UNS, in six varieties, in 60 and 45 pots, at same prices. Packing icony Nursery, Reading.

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STANDARDS, 2½ to 4 feet, 15s. per dozen, £5 per 1co.
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Fine healthy plaots, and embracing the best varieties in cultivation of Hybrid Perpetuals, &c.
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APPLES, PEARS and CHERRIES. Dwarf-trained, for walls, &co., good trees, 15s, 18s and 24s, per dozen.

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CURRANIS, Red and Black, of sorts to name, 8s., 10s. and 12s. per 10o.

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RASPBERRIES, our selection, 40s. per 1co.

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10 single lines, 15s. per does.

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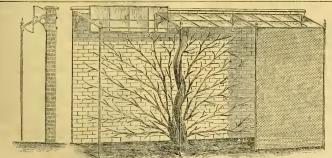
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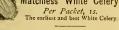
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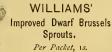
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Gardeners' Chronicle.

SATURDAY, FEBRUARY 9, 1884.

WATER PRESSURE FOR GARDENS.

THERE are few matters connected with gardens of more importance than a plentiful, well-arranged supply of water; and although this is so generally accepted, yet it oftener than not happens that there is either a deficiency of this indispensable element, or that the arrangements for applying it are such as to prevent the full advantages connected with its use being obtainable. Doubtless there are some localities that offer no inconsiderable amount of difficulties in the matter of water, such as in the chalk or limestone districts, where the water is hard and so far affected by the stratum through which it passes as to be unsuited for at least some of the requirements connected with a garden. In such localities there is often no resource available except that of making provision for catching and storing as much of the water obtainable from the roofs of the houses as will suffice for applying to the roots of the various plants that refuse to thrive with lime-impregnated water. But when all that is possible in this direction has been done the supply falls vastly short of what is required in any place of considerable extent, more especially in those parts of the kingdom where the rainfall is light.

No inconsiderable proportion of the failures or partial successes that take place with wall fruit, particularly Peaches and Nectarines, is traceable to a supply of water to the roots, as well as applied overhead, insufficient to keep the foliage in the healthy condition, free from insects, without which it is useless to look for anything above medicirity in either the quantity or quality of the fruit. And the same holds good in respect to Vine culture, about which the necessity for thorough drainage has been so persistently and correctly urged, but along with which the need for an unstinted use of water to the soil should have been simultaneously insisted on as equally indispensable. The frequent soakings required by the roots of Peaches grown under glass, as also by those grown on open walls, in dry summer weather, and by Vine borders, inside and out, through the growing season, necessitate an amount of water such as no storage accommodation we have yet seen would go far enough to meet. Moreover, the constant needs of the thousand and one things in a large garden are such, that when there is a feeling that the supply is limited, everything goes short, with the inevitable result that all suffer. Needless to say wells and pumps furnish the usual supplies in aid of rain-water tanks, where the latter are in existence; but quite as often the former are the only means whence a supply can be obtained, and a good many large gardens have little else to depend on. Tanks and wells and pumps and water-barrows are no doubt very useful in their way, and much may be done with them where there happens to be no stint of labour to do all that is required; but this is just the one important element in many places where the greatest pinch is felt. At the present time the water requirements of gardens collectively throughout the kingdom may safely be set down as double what they were before, owing to the increase in

the numbers of plants grown under glass, although little addition has been made in the matters of water provision or labour.

What is wanted in all gardens of any extent is a sufficiency of water with pressure. Where there is the provision of a plentiful head of water to give the requisite force, so that it can be used without the never ending labour of pumping, carrying, and wheeling, the first essential to successful cultivation, and saving in labour, is present, and without this there is no true economy. With a hose-pipe, and an unstinted supply of water, a man will do as much in the way of washing the trees on a wall in an hour as he will in half a day by the pumping and wheeling process, besides doing the work more effectually than it usually gets done under the slow method. But it is in the root supply that the great saving in labour is effected, as it is needless to say, where the hose can be turned on to Vine and other fruit borders, Strawberry beds, Celery, Peas, &c., little labour is needed; with the still further advantage that the work gets done in a way such as is rarely equalled by direct hand labour.

In many places the first outlay required to make such provision as here suggested is fractional as compared with the after saving. Comparatively few gardens are situated where, within a reasonable distance, a pond, stream, or spring cannot be made to afford a supply that would give the requisite head for pressure; and the price of iron is now so low that the piping needed for conveying the water can be had for little, whilst the laying requires only to be low enough to be out of the reach of frost.

In every department of the garden the advantages of an unlimited quantity of water are felt; in the flower garden, in place of the shortlived blaze of bloom that often occurs in a burning summer, when there is no corresponding growth going on in the plants to yield a sufficient succession of flowers, the autumn effect is frequently poorer than it should be; whereas if the hose-pipe is available all this can be rectified. In such seasons as above alluded to, even in the most suitable and well manured soil, Roses often are white with mildew during August and September instead of giving a succession of bloom during a time when their presence is most accepiable-when, if the beds were now and then properly drenched by moistening the soil down as low as the roots go, a very different state of matters would exist to what occurs where the water-pot has to be depended on. In place of the brown sun-burnt terrace-slopes by no means unusually met with the grass can easily be kept fresh and green by leaving the hose going for a time, with an occasional removal; with like advantage it can be used to the many other thirsty things that have to go short where inadequate provision exists. water supply, such as here briefly sketched is more conducive to successful gardening, combined with economy, than anything else we can think of. T. B.

BORONIA MEOASTIGMA.—To a casual observer this lowly plant bears little outward or superficial resemblance to the Orange tree or other members of the Rutaceous order which furnishes many more or less familiar garden plants. The construction of the floral organs, however, declare its true relationship, and in several minor particulars, as in the compound leaves, evidence of this connection is fully borne out. These leaves are opposite and trifoliate, and together with the slender twiggy stems and nodding flowers remind one of Tremandra verticillata in habit, only the flowers are in this case brown externally, and yellow internally. This species is of comparatively recent introduction, and deserves to be universally grown as a winter flowering greenhouse or conservatory plant for the grateful odour it gives rise to in a house.



MASDEVALLIA PACHYANTIIA, n. sp.*

Titts species stands near Masdevallia affinis of Dr. Lindley, but its flower is far larger, coming nearest that of the Veitchian monopoly, Masdevallia gargantua, yellowish - ochre - coloured, or a green lilacbrownish, with dark nerves on the upper sepal, and less expressed ones on the lateral sepals. The upper sepal is triangular, prolonged into a long thick tail. The lateral sepals are deeply connate, with shorter triangles, and shorter thick tails. Petals ligulate acute. Lip thickish, with two very obscure keels in the middle (perhaps scarcely to be seen in the living state), ligulate, blunt, very dark. It may prove an interesting addition to the collection of Masdevallias, which are, I believe, numerous. I had this a long while ago from Mr. Harry Veitch, for whom it was collected by Mr. Cross. I have now several flowers sent by Mr. Carder along with good living plants, forwarded by Mr. E. Shuttleworth, 191, Park Road, Clapham. Mr. F. C. Lehmaon wrote to me about it long ago. H. G. Rchb. f.

SACCOLABIUM BELLINUM, n. sp. †

A discovery of Mr. Boxall's in Birmah, kindly sent by my invaluable eldest English correspondent, Mr. S. Low, in the form both of wild and garden specimens. To be short, it is an increased and embellished Saccolabium calceolare, Lindl. It is said to grow upright, while my wild calceolare specimens are asceading. The leaves are like those of the last named species. The flowers are two to three times larger than those of the old species. Sepals and petals straw coloured, with very large dark brown blotches. Lip's blade transverse, much serrate, fleshy, rough, with two great cushions of filiform processes at the base. Basilar hollow not so deep as in S. calceolare. Lip and column white, with mauve-purple blotches. It is no grand thing, but one of those elegant little beauties one may delight to look at after being tired of monotonous grandeur. II. G. Rehb. J.

Cyprifedium Bullenianum anophthalmum, n. var.

Mr. W. Bull kindly sends me this variety. It is distinct from the type and from C. oculatum in having no eye-spots on the petals and no deep brown area under the green mouth of the lip. We have had the same variety in the Hamburg Botanic Garden, when we had four plants from Mr. S. Low. They all perished, a "visitor" having tried to take one or two in his pocket. He was stopped, but all the roots having been broken the plants were condemned to death. The moral is, watch well the "visitors." II. G. Reth. J.

LÆLIA BELLA, n. hyb., hort.

This is a Chelsea gain once more, as writes Mr. Harry Veitch, who obtained it from Baron von Schröder, who has flowered it. "It is a cross between Lælia purpurata crossed with the true old autumnal Cattleya labiata. Longest leaf 12 inches by 2½ wide; Iongest bulb 8 inches. In habit intermediate, but partakes more ol Cattleya labiata. Leaf purple underneath." So far Mr. Harry Veitch. The sepals and broad petals are light lilac. Lip with blunt angles, and a broad anterior wavy lobe of a glorious warm purple, as well as the side angles, when the superior margins are very light. There are two oblong ascending zones of light ochre-white at the base, and two smilar spots before the middle, in the way of Cattleya Warscewiczii. The disc is light purple, interrupted by light lines. Column white, with lightest purple on the side. A lovely beauty! H. G. Rehb, f.

GREENFLY.

APHIDES are to be found almost everywhere throughout Britain. Some are hardy enough to thrive on stony heaths of Scotland and Northumberland, whilst others will live almost in the reach of the spray on the sea-shore; terrestrial and aquatic plants are alike subject to their attacks. Some feed on succulent herbs, others on hard timber trees; others again on the roots of flowering plants. Sometimes the white Water Lily (Nymphæa alba) is almost destroyed by the myriads of Rhopalosiphum nymphææ which crowd on its leaves and flowers. certain trees and shrubs appear to be attacked exclusively by their own peculiar aphis other trees give nourishment indiscriminately to numerous species. Thus the Oak is attacked by at least six, the Willow and Birch by eight, and the Conifers by the same number. Some families of plants are free, or almost from them, such as the Gentian and Irid lamilies. But one species of the large group of the Ferns is as yet known to be attacked by them; indeed the Cryptogams are, as a general rule, very free from aphides, but we have known a species of Marsilia to swarm with them.

The migration of the aphides is still involved in some mystery, and we seem to have as yet no certain knowledge of the winter habitats of numerous species which seem to occur only during a few weeks of midsummer, such as Siphonopora millefolii, which may be found from July to September, and then entirely eludes our ootice for the rest of the year.

The peculiar habits of the species opens an immensely interesting subject; some are almost sedentary, others are fairly active; some form receptacles which strangely mimic fruits; some, if disturbed, drop to the ground, others run to the opposite side of a leaf or twig; some throw up their hind legs when alarmed, which action gives a signal to the rest of the colony, which responds by going through the same performance; some assimilate their colours to their food plants, so as to be difficult to perceive. An interesting phenomenon in connection with these insects is their dimorphism. early spring form of Chermes laricis is different from that of all her progeny till the last, and the same is the case with Aphis mali. These variations often relate to size and colour, but often, also, to considerable change in form and modification of parts. The most extraordinary instance occurs in Chaitophorus aceris, the early spring forms of which occasionally are so diverse that they have been described as belonging to not only different genera, but even to distinct families. Thus, Mr. Thornton, the original discoverer of this strange insect, gives it the name of Phyllophorus testudinatus; afterwards Mr. L. Clark called it Chelymorpha testudo, placing it between the Aphididæ and the Coccidæ. But a nearly equally striking example occurs in the dreaded Phylloxera vitis, which has two entirely different habits of life and form. In one it is active and winged, in the other it is anterous and subterranean. . . .

Full details are given in Mr. Buckton's recent work of that troublesome insect, Rhopalosiphum dianthe, the Aphis vastator of Some, which feeds on almost every cultivated plant, often swarming on the Petato, Turnips, Finks, not to mention Hyacinths, Tulips, and Oleanders, but which the author agrees has nothing to do with the production of either the Potato disease or clubbing in Crucifers. Forty-five species of the genus aphis are enumerated, and a very useful analytical table of these is appended in the work cited. No less than seven synonyms are quoted to A. rumicis, Lin., which commits such destruction often on the Bean and Turnip crop, and which is not very particular as to its food plants.

Among the more familiar species we have here the aphis (Pterocallis tiliae) which abounds on the Lime tree, and so bedews it with its sweet secretion; the Beech aphis (Phyllaphis fagi), so well known as often covering the leaves of the Beech tree with its white cottony or rather waxy fuff; the Sallow aphis (Lachnus viminalis), which sometimes swarms on our Willows. The "American blight" (Schizoneura Ianigera) on our Apple trees, is an introduced species, apparently from America. It appears that they descend into the soil in winter and attack the roots of the Apple trees. S. Januginosa is the aphis which produces the wonderful Fig-like galls on the Elm tree. These galls are about the size of small green Figs, with a small opening at their summits, they contain thousands of the plant lice. In 1866 Mr. McLachlan,

Masdevallis pachyantha, m. sp. — Aff. M. affini, Lind.; flore majori latiori; sepalo impari triangulo lato truervi in caudam sublongionem crassam extenso; sepalo pari lantum summo bifido cruribus triangulis, caudis crassis brevibus; tepalis ligulatis acults, centum versus antice augulatis, uninervite, latello longiori ligulato obtuso, basi supra unquem cordato; columos androclimo apice acumiatio. — Periz mium ochreaceum ungue ochracesviolaceo, labello valde obscuro. Nova Granata. Cross ! Carder!

nata. Cross ! Carder:
† Saccolabium bellinum, n. sp.—Aff. Saccolabio calceolari,
Lindl.: ommbus partibus majus; labelli sacco semicupulari
minus pordund omelius ac longus extenso; laciniis lateralibat
semoslougis transversis bene erectis; lacinia antica transversa triangula lateribus ecerçetice serrata papulis filtiormibus
utrinque in basi. Ex Birma imp. cel. Low. II G Rehb. ft.

travelling in the south of France, gathered a number of these galls, which were in extreme profusion-Elm trees 20 feet high being one mass of galls-with the intention of bringing them home; but they made such an awful mess from the viscid liquid in the galls that he was compelled at last to throw them away. Pem-phigus lactucarius is the species found living in little earth cavities in the vicinity of the roots of various plants. If a stump of Lettuce be pulled up in sprinthese "downy flocks" will be very often detected. . If a stump of Lettuce be pulled up in spring,

The Fir aphis (Chermes abietis) is the maker of the curious cone-like galls of the Spruce, and a closely related species is often very destructive to Larch planta-Of the genus Phylloxera two native species are described, and a full account of the Vine aphis (P. vitis) now introduced into our hothouses is also given. In this account we have a very interesting and important communication from that eminent entomologist Jules Lichtenstein, in which he gives a summary of his views on the metamorphoses of the plant lice. From a review of Mr. Buckton's "Monograph of British Aphides" in "Nature."

HEPATICAS.

SOME fine clumps of the double red and the single blue Hepaticas, in pots, and now in full bloom, are so charming as to be of a character to rouse the floral enthusiasm of any one who looks upon them. Potted up in 6-inch pots a year ago, and stood out-of-doors all the summer on a bed of cocoa-fibre with the aspect due north, they filled the pots with roots, and during the summer and autumn they were treated to occasional doses of that friend to the amateur gardener-Clay's Fertiliser. Owing to the mildness of the season the plants began to throw up their flower-buds early, and now they occupy a cold house, the flowers are expanding in large numbers, and sweetly pretty they look, with the promise of spring shown in their bright coloured petals. The two varieties named are probably the commonest of the Hepaticas; when planted in the open ground they do well in a deep moist sandy loam, into which they can root deeply, and, if let alone, as they should be, form quite huge tufts in course of time.

In my harsh soil near London I cannot grow Hepaticas in the open ground, but only in pots. It is death to them to plant them out; they get roasted in summer, or if they escape this they die from rot in winter. Happy is he who has a kindly garden soil in which he can plant-out Hepaticas, and see them flourish. They are among the most acceptable of early spring flowering plants, but unfortunately, because they flower so early, their charms are often sadly disfigured by the cold storms, frosts, and cutting winds which so often accompany retarded springs. I have a few others in pots, such as angulosa, with its large soft pale mauve blossoms; Barlowii, purple-blue, a very pleasing shade, the purple, in which the blue has deepened to purple, and so gives a very distinct hue of colour; the common single red, rosea, with charming pinkish-rose blossoms; and the white-all of which are single-flowered; and last, but not least, the fine rich and somewhat scarce double blue. This is by no means a complete collection, but it is a fairly representative one, and full of interest.

There are no doubt many persons who while they are unable to cultivate the Hepatica in the open ground, could do so in pots. For this purpose they should use "long Toms," or the deepest pots they can procure, for the Hepatica, as before observed roots deeply into the soil. The best compost I can use is one made up of good yellow loam, grit from a gravelled road, or failing this coarse silver sand, some leaf-mould, and a little well-decomposed manure. I use a crock at the bottom of the pot, but dispense with drainage, using instead a layer of cocoa-fibre refuse, which keeps cool and moist, and to my mind answers to the character of the subsoil best fitted for the Hepatica. The crowns at the time of potting are put fairly deep into the soil, but by no means buried, and the soil pressed firmly about them. I find they root quickly nto such a compost, and form stout blooming crowns. The double blue in particular succeeds well when The double one in particular sources for the streated in this way, and developes into strong plants. As a matter of course they must not be neglected during the summer, and while they are kept well watered the close to the stream of the str during the summer, and white they are kept weit watered in drying, hot weather, the plants are twice or thrice during the summer months looked over, the sour surface-soil removed, and replaced by a fresh compost, taking care not to disturb the roots more than is necessary. When stood on a bed of cocoa fibre the roots enter it readily, a decided advantage in hot, drying weather. A slight surface dressing of Clay's Fertiliser is given while the plants are forming new leaves, and ag in when they have matured them.

Can anything be done in the way of producing new varieties of the Hepatica by cross-fertilisation? The single blue and the single white appear to mature seeds, and these might be used as seed-parents. A single tote and the single white appear to mature seeds, and these might be used as seed-parents. A few days since I found several self-sown seedlings round a plant of the single blue, which I carefully removed, and shall hope to see them flower by-and-bye. I presume that some, if not all, of the varieties of the single blue type have been obtained by selection. Do they who, like Mr. G. F. Wilson, grow Hepaticas successfully in the open air, ever find self-sown seedlings among their plants? And if so, have they, when they flowered, betrayed the possession of any distinguishing characteristics? This is a matter of interest, and perhaps some may be able to throw light upon the matter. [The mode of germination would also probably be interesting to observe. Ed.] When clumps of Hepaticas become well established in the open ground it will be observed that they, in course of time, thrust themselves up out of the soil, I will also be found that the roots, as well as being deep down in the soil, are also close to the surface,

deep down in the soil, are also close to the surface, and thickly matted. Some top dressing will be found and thickly matted. Some top-dressing will be tound of great service, but to prevent this being washed away by heavy raios it is necessary to raise the level of the surrounding soil; or, if this cannot be done, to lift the clump and replant it at a greater depth. R. D.

The Arboreium.

CORNELIAN CHERRY (CORNUS MAS). - As an ornamental tree or shrub the Cornelian Cherry is decidedly valuable, not only on account of its early flowering, and the fine display now and then made by the ripe fruit, but because it is particularly suitable for small or suburban gardens, bearing cutting in well, and besides not growing fast, nor occupying too much space. Old trees in thoroughly favoured conditions sometimes attain a height of 20 feet; as a rule, however, the species is generally met with as a more or less compact bush from 6 to 10 feet high. The small yellow flowers are borne in nmbels on the naked brownish-green twigs from February to April, and the beautiful scarlet oblong fruits ripen in October and November. A figure will be found at p. 399 of our volume ix. for 1878. According to Evelyn, "the preserved and pickled Cherries are most refreshing, an excellent condiment, and also do well in tarts. The same author also relates what he justly calls an odd notion. "Though Matthiolus affirms it, upon his own knowledge and experience, that one who has been bitten by a mad dog, if in a year after he handle the wood of this tree till it grow warm relapses again into his former distemper." The name "mas" has been applied to the species since the days of Theophrastus, in all probability because young plants are barren for many years after they show flowers, these flowers being furnished with stamens only. The Cornelian Cherry is widely distributed throughout Europe, and has been cultivated for centuries in Britain, 1596 Gerard wrote, " It groweth not wild in England. but yet there be sundry trees of them growing in the gardens of such as love rare and dainty plants; whereof I have a tree or two in my garden." The form with leaves margined with white (var. variegatus) is one of the best of compact-growing smallleaved deciduous shrubs, and one (var. elegantissima), which originated some years ago in the nursery of Messrs. Charles Lee & Son, is more showy on account of the red and yellow variegation; in fact, this latter variety exhibits foliage as richly coloured as some of the tricolor Pelargoniums which were so highly valued by the gardening world about half a score years ago.

SEQUOIA SEMPERVIRENS (RED WOOD). — This Conifer I have for years highly recommended, and have planted it both on chalk and on other soils. All nave planted it both on chalk and on other soils. All it requires is a north aspect, if possible, and shelter. There are some fine specimens at Weston, near Steyning, also many at Fentillo Castle, Cornwall. I have myself a fine specimen with a girth at 4 feet from the ground of 8 feet 4 inches, which exceeds that of the one at Hyères, mentioned in a recent issue. J. T. B.

SOUTH AFRICA.-The year 1883 was an exceedingly dry one in this part, only 18.26 inches of rain having fallen. In 1882 the rainfall was 23.87 inches, the average about King William's Town being 27 inches. The Leighton, King William's Town.

HAREFIELD GROVE.

TAKING Rickmansworth as a centre, any one desirous of studying practical gardening as carried out in private gardens might devote a week at least in a profitable manner in visiting the many places of interest grouped within a few miles. From Radlett to Uxbridge, and from Harrow to King's Langley, there are districts replete with places of an extremely interesting character. One of these is Harefield Grove, and it is separated from Moor Park by a comparatively narrow strip of land. It can be reached either from Rickmansworth or Uxbridge, but is nearest to the former, being close to the village of Harefield, and there are lodge entrances at Rickmansworth, at Harefield, and towards Uxbridge. Harefield Grove is an estate of some 400 acres; of this at least 30 acres are devoted to pleasure grounds, hardy fruit gardens, and glass—of the latter there is an enormous quantity. T. W. Boord, Esq., M.P., for-merly resided here, and about four years ago the estate passed into the hands of the present owner, George Webster, Esq., who has considerably ex tended the glass structures, and likewise constructed an extensive orchard for hardy fruits.

The superficial area of glass is, indeed, something enormous; there are in all about seventy houses, and though grouped here and there in extensive blocks, the whole extends for a considerable distance, and jooked at from the height from whence it is approached from Harefield, it has the appearance of an extensive nursery. It is a task of considerable extent to go through these houses, and were their structural arrangements and contents noted in detail it would require a considerable space to set them

There is one block of span-roofed houses for forcing purposes, in which are large quantities of Osborn's forcing French Beans, planted out and coming into flower; also Tomatos, which are very largely grown, Melons and Cucumbers. Six houses, from 100 feet to 110 feet in length, are devoted to Cucumbers only. There are vineries of various sizes, some of them very large; one is 100 by 19 and has 14 feet rafters; this is planted with young Vines that are full of promise. Another is 100 by 16, in two divisions; another is 70 by 16, and another 80 by 18, both in two divisions; another 90 by 14, in three divisions. A new one in course of construction is 100 by 18, and is also in three divisions. All the best varieties of Grapes are grown here. The Peach-houses are remarkable structures. One is in two divisions, and is 120 by 23 feet. There is a row of fine standard trees down the middle, and at the sides are excellent trees trained against curvilinear wire trellises. The leading varieties are Bellegarde, Lord Palmerston, Grosse Mignonne, and Sea Eagle. Great crops of fruit are gathered in the season. Another Peach-house is 70 by 24 feet and is similarly planted. There is a Peach-wall covered with glass 105 by 6 feet, and this can also be used as a Strawberry-house. Three of the Cucumberbouses are 100 by 12 feet, the plants on either side trained up to the roof. Two of the houses used for Melons are of the same dimensions. Telegraph is the principal variety of Cucumber grown. The two leading Tomatos are a selection from the Large Red and Vick's Criterion.

Here may be seen a good collection of Orchids, and there are several spacious plant-houses for specimen foliaged and flowering plants, Ferns, &c. Gardenias are seen here in very fine condition, planted out, growing freely and flowering abundantly in the middle of January, in addition to Eucharis and Orchids, among which Calanthe Veitchii was quite striking. There were also Hoteia japonica, double white Primulas, Roman Hyacinths, Gardenias, Cyclamens, Pelargoniums, Bouvardias, Roses, Lilies of the Valley, Cinerarias, &c. Roses are a remarkable feature here; there are it is computed more than 3000 Tea Roses in pots of all the best kinds, coming into flower. An excellent Rose-house has been constructed on the top of a potting shed, and the top of this house is at the back of a vinery; and in addition to being lighted from the roof and front, light is also had from a glass partition which divides the Rose-house from the vinery. The Rosehouse is of considerable length and wide enough to admit of a level stage on either hand, on which are placed the plants in pots. A number of Maréchal Niel Roses are planted against the back wall, in order to flower on the roof, and these are

planted in old bulb cases, which are conveniently arranged and hidden from view by the stage; and the flooring of the house is so constructed that no water can pass down to the potting-shed beneath. There are other houses in which Roses are growing, but this is the principal one. There is one excellent feature about the plant-houses and vineries; closets are formed at the backs of the houses, one, at least, in each division, and here steps, watering-cans, &c., can be stowed away when not in use, instead of being left about under stages to become eyesores.

It is impossible to do more than give a cursory glance at the glass structures. The heating arrangements are on a very extensive scale. There are about 24,000 feet of hot-water piping, and to do the necessary work of heating eight powerful boilers, each capable of heating 5000 feet of piping, are in use. Three of them are Jones' Terminal Saddle boilers, two are the Cornish or tubular boilers, three others are Terminal Saddles by Anderson, and one horizontal tubular 18 feet in length. Rather more than 400 of Messenger's patent valves are in use for the purpose of regulating the heat in the various houses. Some of the houses are 300 feet from the boiler, and double flow and double return pipes are employed. There is a great command of heat, and it is under perfect control in every department.

Strawberry forcing is a great feature at Harefield, and something like 14,000 pots are got into fruiting. New houses are in course of construction, to excend the growth of this fruit. The leading sorts grown are Sir C. Napier, Sir J. Paxton, and Vicomtesse Héri-

cart de Thury.

There is an excellent Mushroom-house, 60 by 18 feet, in which enormous quantities of this esculent are produced. It is constructed with three tiers of heds on either side, and the roof being stuffed with 1 foot of shavings under the slates, and at the bottom, forming the ceiling, a layer of cement, an equable temperature is maintained.

Chrysanthemums are largely grown for autumn and winter blooming, Princess Teck being one of the best varieties. In one of the propagating-houses could be seen thousands of cuttings that had been in about three weeks, and had already rooted.

The new bothies are commodious, lofty, and well constructed, with all conveniences fully provided, and they may be taken as a model after which such places

may be constructed.

Two years ago an extent of rich pasturage, about 15½ acres, was broken up and converted into a hardy fruit orchard. The soil varies a little, but is generally a generous loam on clay, the subsoil being well draiued. In this space about 5,000 trees of various kinds are planted, 6000 being pyramid fruit trees, 3000 of these Plums, and the rest Applies and Pears; the remainder is made up of Gooseberries, and black, white, and red Currants. This orchard is in four huge divisions, and the outer line throughout its extent is planted with Filherts. On the west and south sides is a tall hedge of Thuiopsis borealls, 10 to 12 feet in height, and this lice of shelter is also continued in the pleasure-grounds. In a few years, and with favourable seasons, the produce of this orchard, will be something extraordinary.

and with avoirable seasons, the produce of his orchard will be something extraordinary.

On the south-west side of the mansion a large portion of ground lying beyond the pleasure grounds, but which will now form a continuation of it, has been laid out as a spacious lawn-tennis ground, 250 leet in length by 50 feet in width, exclusive of a handsome terrace and broad gravel walk which surrounds it. Between the teonis-ground and the mansion a Rose garden has been formed, and the boundary line with a hedge of oval-leaved Privet, and at every 7 feet of hedge there has been planted a standard Acer Negundo variegatum. Close by a huge raised circular bed has just been made, and planted with the choicer sorts of Clematis, that will make a fine object in summer; and near it a huge rootery is in course of formation. From this point, and away to the west and north sides of the mansion, the pleasure grounds are much undulated, and the landscape gardener has availed himself of certain natural advantages to work out admitable features and effects. On the west side is a very handsome ornamental

conservatory, Under the management of Mr. John Gough, formerly manager of the Crystal Palace at Sutton Coldfield, who has the entire charge of the gardeos here, various improvements are being carried out, which, when completed, will finish—for the present at least—what will be a truly wonderful garden. The estate is finely timbered—Oak, Beech, Scotch Fit, Horse Chestnut, Limes, &c., being particularly fine.

ON BARYA AURANTIACA

WHILE ergot has been collected on many species of grass in all parts of Britain, the mature Claviceps or "ascophore," of which ergot is the "stroma," has been more rarely met with. Opportunities have therefore



Fig. 32. - Barya Aurantiaca on Ergot, Showing perithecia; also conidiferous hyphae: magn.

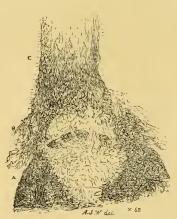


Fig. 33 -- A, Transverse section of Ergot; B, Diffuse base of Ascophore; c, Lower part of Ascophore.

been wanting for observation of C. purpurea growing naturally, and as affected by environing circumstances. But the writers of this paper have found it in several localities in great abundance every year since 1874. The discovery of Tulasne, based upon the results of artificial cultivation, that ergot is the selerotium of a fungus, is thus fully sustained by

observation of the natural growth from this sclerotium of the Claviceps purpurea, Tul.

It has been generally supposed that ergot will germinate only in the season following that on which it is produced. While this supposition is practically true, we have produced a few specimens of the Claviceps from ergots of two years old, but none from those of three years old. It is thus evident that, as in other seeds, a process of devitalisation is going on in the substances of the ergot, suggesting some important considerations. If old ergot is less vital than ergot during the first year, or altogether dead, in which condition are the medical qualities of ergot at their best? And we may ask, have the ergots of the common wild grasses been fully compared in their effects with the ergot of cereal Rye?

It has been chiefly on the ergot of Glyceria fluitans, R. Br., that the Claviceps purpurea has been found growing naturally, as above stated. At the bottom and on the sides of a half dry ditch, where this grass is allowed to grow undisturbed, the ergots fall down in autumn and are covered by the decaying grass. The ditch runs east and west, and the purple Claviceps has been found mostly on the south, or shady side.

The early part of 1882 was very wet, and in July, when the fungus was looked for, very few specimens could be found; but in their place, and upon the same ergot, everywhere appeared white and yellow stipes, about the same height as those of the purple Claviceps. Last year (1883) they appeared agaio, but apparently intermixed with a larger proportion of the purple form. Whether they appeared first in this locality in consequence of climatic peculiarities, or whether they had been previously overlooked, it would not now be safe to say. Their conspicuous appearance is against the alternative that they were overlooked till 1882.

That this yellow ascophore grows upon the same ergot as the purple Claviceps grows upon is beyond doubt—namely, that of Glyceria fluitans. In many cases the pales of the floret, agglutinated to the ergot, remain attached at the time the ascophore is growing; but while it is rare to find both the purple and the yellow forms growing on one individual spur three cases have turned up in which the purple form with its globular hymenium and immersed perithecia occupied one end of the ergot, while the other end was occupied by the yellow form with its club-shaped hymenium and free perithecia. (See fig. 34, I, A. B. C.)

That an ergot should develope two forms of fruit-bearing stems so different in outward appearance is, however, not to be accepted without full evidence. Now the purple Claviceps makes its exit first from a clean dark surface by disrupting the outer substance, the ergot having no epidermis. But this new ascophore arises on a kind of secondary white stroma, which forms patches here and there on the outside or in the cracks of the ergot. The exterior of the ergot consists of a mass of agglutinated stylospores and the short styles on which they grow from the spongy mycelloid axis. And the question is, Does the white stroma arise from a diffuse germination of the stylospores, or does it arise parasitically from the elements of another fungus altogether?

Perhaps nothing can so fully determine this question as the production, or non-production, of ergot from the sporidia of the new perithecia. Experiments with these sporidia have as yet produced only negative results. These sporidia are precisely of the same fillorm character as those of C. purpurea, only they are larger. If a ripe club be taken from a cold to a warm room, and placed under a low power, the perithecian batteries will speedily open in all directions, and the shower of sporidia will be seen flashing across the field. It is evidently the elastic pressure within the perithecian consequent on the continuous growth of younger saci which constitutes the projectile force; for when this pressure is relieved by discharge, the sporidia are expelled more slowly, and may be seen swaying about here and there in the air, and at length falling over on the outside, the force being insufficient to expel them.

Barya aurantiaca, Plowright and Wilson, n. sp. (fig. 32). — Stroma vertical, clavate or subapitate, 10-20 nill. high by T-3 mill. in diameter; when young floccose, white with condidiferous hyphe, and bearing yellow perithecia with orange ostiolia on its upper two-thirds. Conidia elliptico-lanceolate, borne in chains on the ends of branching condidiferous hyphe, $10-12\times 2-3$ mk. Perithecia pyriform, yellow, almost

free, with elongated necks which with the minute ostiola are orange, $250-300 \times 150$ mk. Asci cylindrical, $200-250 \times 30$ mk. Sporidia filiform, flexuous, continuous, as long as the asci,

The base of the stroma springs from a floccose mass of yellowish white mycelium. On Claviceps purpurea on the ergot of Glyicera fluitans. Near Aberdeen. July.

This fungus was at first regarded as a species of Claviceps allied to C. pusilla, Ces.,* and C. setulosa, Quel.,† which species it resembles in colour, but hardly in any other character except its association with ergot. In some points—notably in the form of the stroma and

Wheat, Rye, and Poa trivialis with its mature sporidia to produce a sclerotium, and although we have succeeded in doing so with the spores of C. purpurea we have invariably failed with B. aurantiaca. It is interesting to note that it, like B. parasitica, Fck.* occurs parasitically upon a sphæriaceous host, and that it is accompanied with conidia. It affects the Claviceps at a very early period of its existence, just as Hypocrea alutacea does Clavaria ligula, and Spathularia flavida and Hypomyces viridis (A. and S.) does the Agaries upon which it occurs: in all these instances the host fungus is so altered in appearance

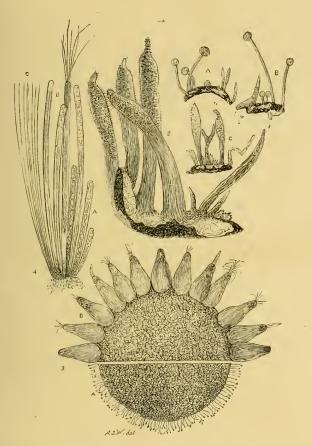


FIG. 34.

REFERENCES:—(1). A, E, C, Claviceps purpurea and Barya aurantiaca on spurs of Ergot: nat. sire. (2). Barya aurantiaca: enlarged. (3). Transverse section of stroma—A, below perithecia = 2, through perithecia: magn. (4). Asci and sporidia in various stages! highly magn.

in having prominent perithecia-it resembles some species of Cordiceps (C. militaris, Linn., for instance), but its sporidia are always continuous and never break up into joints as those of Cordiceps do. Resembling in habit a Hypomyces it differs in its fruit, for the Hypomyces have short, oblong or fusiform normally uniseptate sporidia. Its parasitic nature is shown by its always occurring upon Sclerotium clavus, in company with Claviceps purpurea; sometimes upon the same ergot in company with its host fungus. We have individually attempted by infecting the stigmata of

as to be in the majority of instances quite unrecognisable specifically. C. B. Plowright, A. S. Wilson.

BESSERA ELEGANS. - This is a Mexican (Liliaceous) bulb, succeeding best, according to Mr. Hors-MAN, in the open border. Leaves linear lanceolate, scape slender supporting an umbel of Fuchsia-shaped red flowers, each pendulous from the end of a slender pedicel, the tube elongate, funnel-shaped, the limb equally long and divided, with six oblong acute lobes. Stamens six, connivent, and projecting beyond the perianth, anthers blue. It is figured in the Garden, January 19, 1884.

COLONIAL NOTES.

QUEENSLAND .- Mr. L. A. Bernays, already favourably known for his researches into the botany of Queensland, has added to the obligations under which he has placed the colonist by publishing a work on the cultural industries of Queensland. The object of the author is to place in the hands of the cultivator information relating to economic plants suitable for culture in the colony which he could not readily procure in any other way. The mere introduction and diffusion of useful plants is not sufficient to secure their successful industrial establishment. As Mr. Bernays says, "they are often neglected for want of knowledge of their value, or were subjected to wrong treatment through ignorance of their habits, and of the proper methods of their cultivation and utilisa-This has been generally felt by colonial botanists, as witnessed by the publications of Müeller, Schomburgk, Morris and others. In the present volume we have an alphabetical list of plants adapted for culture in tropical and semi-tropical regions, together with a brief account of the plant, its products, the mode of culture, and the method of manufacture. It is, in fact, a Cyclopædia of economic hotany, compiled from the best and most trustworthy The alphabetical arrangement has, of sources. course, many advantages, but it may be carried out too strictly. For instance, "Coffee" and "Liberian Coffee" are separated by fifty or sixty pages, merely because the name of the West African Coffee begins with an L. We should not have thought of looking for an account of Cinchona under "Quinine tree, But this is a matter of little consequence, as the writer has also supplied an alphabetical index. miss any account of the Kola-nut; a still more striking omission is that of Cotton, for the exclusion of which there must probably he some good reason.

CEYLON,-Dr. Trimen has recently published a little hand-guide to the Royal Botanic Gardens, Peradeniya, Ceylon, which cannot fail to be very useful. "A botanic garden in the tropics is somewhat bewildering to those accustomed to the neatness, order, and regularity of such establishments in temperate countries. The plants to be grown are mainly trees and shrubs suitable to the climate, and planted in the open; we cannot, as at home, produce artificially the conditions necessary for species of other climes by specially regulated houses where the different sorts can be classified, neatly ticketed and arranged for easy examination. Here Nature asserts herself, almost uncontrolled; she gives us grandeur of form, wealth of foliage, exuberance of growth, and splendour of colour -unfading beauties, but of a quite different kind from those of the sweet summer flower-gardens or the well-kept stoves and greenhouses of England," The area of the garden is 150 acres, heautifully undulated, itselevation on the average being 1450 feet. The climate is hot, moist, and equable, the mean annual temperature being 77° Fahr., April and May the hottest, and December the coldest months. Rain falls on about 200 days in the year, the annual rainfall being about 85 inches, pretty evenly distributed throughout the year, but heaviest in October and November, and in The history of the existing garden, of its Tune. predecessors, and of its several superintendents, from the time of Alexander Moon to the retirement of Dr. Thwaites, is given at some legth. We have at various times given illustrations of some of the more remarkable trees in this garden, such as of the Talipot, Corypha umbraculifera, the noblest of all Palms, though in some sense an "annual," for like an annual it produces flowers but once, and then, having accom-plished its mission, dies. The gigantic buttresses of the indiarubber trees (Ficus elastica) have also been figured by Captain Oliver. Dr. Trimen's narrative, strictly didactic though it be, makes "one's mouth water," if the expression may be allowed. Three other gardens in different climatic districts of the island are also under Dr. Trimen's charge,

THE BOTANIC GARDENS, MAURITIUS .- Ninetyfour thousand persons are reported as having visited the gardens in 1882. The rainfall was 75 inches-March, with a fall of 24.88 inches, being the wettest month. The highest temperature recorded was 85°.6 Fahr., on January 21, and the lowest 53°, of June 1—the mean maximum for the year team 77°, the mean minimum 70°. The propagation of the Ceara rubber tree, Manihot Glaziovii, has been proceeded with satisfactorily. Trials are being made of other rubber trees, the great demand for

^{*} Cesati, Linnea, xxi., 1848, p. at, and Comm. Crittog. Ital.
i., p. 64, t. iv., f. iii.
† Quellet, Cordyceps setulosa, Champ. Jura, 487, t. iv., f.
f. 4.

^{*} Symbol. Mycol. Europ., p. 93, t. iv., f. 18.

caontchouc stimulating cultivators in all tropical Liberian Coffee is reported not to be a Mauritius. The propagation and distribucolonies. success in Mauritius. tion of new kinds of Sugar-cane were carried out satisfactorily, 131,700 canes having been distributed during the year.

COCUS WOOD.

WHAT Box-wood is to wond engravers Cocus-wood is to musical instrument makers, at least to the makers of wind irstruments, such as flutes, clarionets, &c. No true substitute has yet been found either for Boxwood or Cocus-wood, the fine close grain of the former, and the metallic ring of the latter being as yet undis covered in any other woods. Like many woods of great commercial importance, the botanical source of Cocus-wood was for some time quite unknown. In Holtzapfel's Descriptive Catalogue of Woods it is referred to under Cocoa or Cocus-wood, and is there said to be "imported from the West Indies in logs from 2 to 8 inches in diameter, sawn in lengths of from 3 to 6 feet, tolerably free from knots, with a thick yellow sap; the heart, which is rarely sound, tines, venow sap; the heart, which is rarely sound, is of a light yellow-brown, streaked when first cut with hazel and darker brown, but it changes to deep brown, sometimes to almost black. Cocca-wood is much used for turnery of all kinds and for flutes; it is excellent for eccentric turning, and in that respect is next to the African Black-wood. An apparent variety of Cocca-wood, from 2 to 6 or 7 inches indiameter, with a leave recording the state of the African Black-wood. in diameter, with a large proportion of hard sap, of the colour of Beech-wood, and heartwood of a chestnut-brown colour, is used for tree-nails and pins for ship work, and purposes similar to Lignum-Vite, to which it bears some resemblance, although it is much smaller, has a rough bark, the sap is more red, and the heart darker and more handsomely coloured when first opened than Lignum-Vitæ; it is intermediate between it and Cocoa-wood. Another, but ioferior wood, exactly agrees with the ordinary Cocoa-wood, but that the heart is in wavy rings, alternately hard and soft."

The above is all that was known of Cocus or Cocoawood when Holtzapfel's little book was published in 13c, and since then we have by no means satisfactorily cleared up this point. The writer of the article quoted above says —"It is really singular that the exact localities and the botanical name of the Cocoanical name of th exact localities and the botanical name of the Cocoawood that is so much used should be uncertain; it
appears to come from a country producing sugar,
being often imported as dunnage, or the stowage upon
which the sugar hogsheads are packed. It is also
known as Brown Ebony, but the Amerimnum Ebenus
of Jamaica seems dissimilar."

The Amerimnum Ebenus of Swartz is now referred
to Brue Ebenus of DC, and the wood of this plant.

The Amerimnum Ebenus of Swartz is now referred to Brya Ebenus of DC., and the wood of this plant, which is known in Jamaica as Green Ebony, is now credited with furnishing the Cocus-wood of commerce. The woods, indeed, upon comparison are almost identical except in colour, the Cocus-wood being somewhat darker, but this may be due to the wood being older, and perhaps selected on account of its deeper colour, for the darker the colour is for flutes the more highly it seems to be valued, its principal competitor in the market for this purpose being a still darker coloured wood known as African Elackwood, the botanical source of which has not yet exemped. wood, the botanical source of which has not yet even been guessed at.

been guessed at.

Another wood, so similar to Cocus-wood that it is difficult, if not impossible, to distinguish it, is furnished by a Euphorbiaceous tree of Northern and Eastern Bengal and Birma, known as Kokra-wood, and furnished by Aporosa dioica, Mull. Arg. (Lepidostachys Roxburphii, Wall.) The similarity of the Bengalese name, Kokra, with the commercial name, Cocus, or Cocoa as it was formerly spelt, is so remarkable that it would seem to point to them as being one and the same thing, and the question then arises whether, instead of Cocus-wood coming from the West Indies it does not in reality come from the arises whether, instead of Cocus-wood coming from the West Indies it does not in reality come from the East, Gamble, indeed, in his Manual of Indian Timbers, says (p. 355):—"This last (Aporosa dioica) has been identified with the tree producing the 'Coco-wood' of commerce, generally supposed to come from the West Indies," Gamble further says:
—"The wood of Aporosa dioica should be carefully examined to prove that the Indian tree gives a timber similar to Coco-wood." A comparison of the two woods contained in the Kew Museum proves their similarity. John R. Jackson, Museum, Kew.

STENANTHIUM OCCIDENTALE is a hardy bulb from the Rocky Mountains of Oregon, with long linear glabrous leaves, from amid which uprises a slender one-sided raceme of long narrow beli-shaped nodding flowers, each about half an inch long, the tubular portion pink, the six recurved linear lobes of the limb green. Gartenflora t, 1132.

Prchid Notes and Hleanings.

CATTLEYA PERCIVALIANA,-First introduced as a new plant by Messrs. F. Sander & Co., of St. Alban's, in 1882, the glowing description which the collector sent with it caused it to be eagerly sought after by most Orchid growers, the more particularly as they had long since despaired of ever again getting a really new and fine large flowered Cattleya. The first bloom, however, which the plants produced under cultivation did not seem to some to bear out the warranty given with it, and consequently a discussion arose as to its merits. On the general question at issue the evidence pro and con seemed about equal, and in the end it was wisely lett to the plant to settle the question itself. This it has done this season in its own favour in a remarkable degree. At its first meeting this year the Floral Committee of the Royal Horticultural Society awarded it a First-class Certificate, and on every side we both see and hear of the wondrous beauty of the good varieties of this Cattleya; while in many instances we have heard of the varieties previously condemned as bad at their last flowering having come good this year, on account of their being better established. If further evidence were wanted for the plant, it can be obtained from the commercial side of the question. Since the commencement of its present flowering season it has rapidly gone up in price, to such an extent that three of the largest masses sold at Protheroe & Morris' Rooms recently realised together 320 guineas—prices hitherto unknown in the history of freshly imported Cattleyas. C. Per-civaliana is said to come from Northern Brazil, where it grows on upright rocks, overhanging streams, at an altitude of from 5000-5500 feet, always exposed to full sunlight, and frequently to very strong currents of air; it will, therefore, be readily understood that it must be liberally treated with regard to both of these elements, in order to make it thrive. In its native habitat its wet season is October and November; but while bearing this fact in mind it will be better to learn from the plants themselves the season in which they want most water, as in this particular their altered condition under cultivation may make a difference, as it does in their time of flowering, which in Brazil is in November, but with us it does not take place until from Christmas, through January and onward. at which season its flowers are more acceptable than at any other time of year. The plant has so often been attempted to be described of late that we herewith furnish an illustration (fig. 35, p. 181), but even with it the beautiful fringe to the labellum and other delicate points cannot be conveyed. The sepals and petals are clear light rose, and the gorgeous labellum, which no words can describe, varies from bright velvety crimson to violet-tinted maroon, generally margined with white or pale lavender, and blotched in the upper half with orange lived and shaded with crimsonbrown, the intensity and richness of the colours in the labellum being so great that they are hardly to be approached by any known Orchid in that respect. Mr. R. P. Percival, who wisely held his peace while the merits of his protege were being discussed, may congratulate himself on having his name attached to such a neat, useful, and lovely plant. The illustration at p. 181 is of a specimen sent us by Messrs. Ireland

CATTLEYA (LABIATA TRIANÆI) MASSANGEANA, Rchb. f. (Gard. Chron., xix., n.s., 18, p. 242, Feb. 24, 1883).-M. Dieudonné Massange de Louvrex has been so kind as to send me a fresh flower of his wonder, which proves identical with what I stated last year, though some details of the stripes stated last year, though some details of the stripes require to be altered. I have altready stated that our friend Mr. Edward Klaboch, when he saw my sketch in water colours began to laugh, saying it was a funny invention; and Mr. Klaboch has seen as many flowers of the labiata type as few other mortals can have done. H. G. Rehb. f.

THE ORCHIDS AT KEW, which improve in vigour every year, at present include in their number many interesting and rare species in Dendrobium tetragonum, with its long, bloom. slender, square pseudobulbs furnished with curious flowers like those of some of the smaller Maxillarias; D. rhodocentrum, with pretty white and lilac blooms; Brassia ocanensis, with small brown and yellow flowers; Oncidium aureum, Lindl., having flowers with vivid yellow labellums; and many rare botanical curiosities being there in flower now. Dodanical Cutosaless being there in lower how.

Among better known things Gomezia planifolia,
Odontoglossum Sanderianum, O. triumphans, O. tripudians, O. Rossii majus, O. constrictum, Ipsea
speciosa, and many lovely Cattleyas, Dendrobes,
Angræcums, and Masdevallias will be found represented by fine well-bloomed plants, while the now rather rare Lælia superbiens may be seen producing an immense spike, which later on will cause wonder and admiration to many of the Gardens' numerous

ORCHIDS AT MESSRS. SHUTTLEWORTH, CARDER & Co.'s .- As the establishment at 191, Park Road. Clapham, is a brisk trading one, continually receiving large importations and sending out great quantities of good things, one does not look to it for the show of flowers which is arranged for in many establishments; but somehow the visitor seldom goes to it without seeing something he could not see elsewhere. This may in a great measure be accounted for by the many marked plants which the collectors send (chiefly those collected by Mr. John Carder himself) and which are proved at home. In such plants—and especially in the very fine hybrid Odonto-glossums of the Wilckeanum, mulus, hebraicum, and Andersonianum sections - Shuttleworth, Carder & Co. have been very lucky, as even their present show of them will prove. Masdevallias are a great feature here, the lovely M. Shuttleworthii being now, as always, in bloom, and good plants of M. Estradæ, M. ignea Massangeana, M. chimæra, well furnished with their bright flowers, while several new species are in bud, and large healthy batches of M. macrura, M. trochilus, and most of the other good Masdevallias appear in the best condition. The great triumph of this firm this season has been the introduction of the lovely orange-scarlet M. racemosa Crossii, which bears long sprays of richly-tinted blooms. This plant, owing to the difficulty every one found in importing it, has got the name of being a very bad grower. Many will be glad to learn that such is not the case, for at Messrs. Shuttleworth's it is growing like a weed, in a very cold moist house. The difficulty is in getting the plant, not in growing it. M. pachyantha is also an introduction of equal importance to the last, the form and size of its flowers are the same as M. Veitchii, the ground colour yellowish, surfaced with various tints, from dark lilac to maroon. It is a sturdy grower, and there appears to be great variety in the blooms. The span Cattleya-house contains large batches of C Mendelii, C. Trianæ, the new Popayan Cattleya, C. Dowiana, &c. Many grand Trianæs are in bloom, one with immense flowers, having the flowers wholly white, faintly shaded with lavender; another having an indescribably vivid magenta-crimson labellum, and a third being snow-white. A good collection of Paphinias—P. rugosa, P. cristata, P. grandis—are in this house, and a large lot of Miltonia Warscewiczii sending up their bloom. The Odontoglossums, Masdevallias, Oncidiums, &c., are accommodated in three roomy span-houses, each over 100 feet in length, the middle one being slightly warmer than the other two, and containing the O. vexillarium, O. Roezlii, Lycastes, &c. Of these last there are many scores of handsome forms in bloom, including one plant of the snow-white variety. The Odontoglossum - house proper contains over 10,000 O. Alexandræ, O. Pescatorei, &c., many in bloom or bud; and the further cool-house contains almost as many more, as well as cool-mouse Contains amoust as many more, as went as some interesting things on trial; the full collection of Bomareas, for which this firm is noted, and a fine lot of O, Rossii majus and O. Cervantesii in bloom. A large span-house at the end contains heat-loving plants, that worthy companion to the Ortchids, the chaste Eucharis candida, supplying plenty of flowers even at this dull season to assist the Dendrobium Wardianum, D. splendidum, D. Ainsworthii, D. Wallichianum, and some Angræcums and Phalenopsis, in giving a show which could not fail to be grateful even to one who did not know a single Orchid by name.

MR, WILSON'S ORCHIDS.—In your article on our gardens at p. 110 there is one slight error, for which I alone am to blame. When saying that I took little charge of our Orchids except buying them, I did not mention that my gardener, who grew Orchids at a former place, did not give them much care and attention. George F. Wilson, Heatherbank,

Notices of Books.

Guide to Methods of Insect Life. By Eleanor A. Ormerod, F.R. Met. Soc. London: Simpkin, Marshall & Co., 1884.

There are few, if any, ladies who can claim such activity and energy in any branch of science as Miss Ormerod in that which she has made entirely her own, namely, the means of preventing insect ravages to farm and garden crops. Her annual reports on injurious insects, which have now become well known, have been increasing, not only in value, but also in bulk year by year till they are now a great deal more than pamphlets; besides these, Miss Ormerod has issued a Manual of Injurious Insects, and Methods of Prevention, and has delivered lectures at Cirencester and South Kensiogton. It is this last course, delivered in December last for the Institute of Agriculture, that Miss Ormerod has published under the title given above. Her aim in these lectures was to place her subject before the minds of her hearers and readers in as plain language as possible, "The book is formed," the authoress says in her preface, "in the hope that it may be taken to the field, or taken up at an odd minute, and give a little information without burdening the reader with a need of looking elsewhere for explanations. I have, therefore, as far as possible throughout used only the words of our own language, and for the explanation of such scientific terms as are used, or for the scientific names of the insects figured, the reader is referred to the Glossary and to the list of insects." Again, in the first lecture, which treats of eggs and caterpillars, Miss Ormerod says, "I would advise with regard to insect know-ledge for farm use, that whenever an English word has a well known meaning and may correctly and properly be used, you should use it rather than the scientific one. If the larvæ of flies are called 'maggots,' or the larvæ of butterflies 'caterpillars, few people in the country will fail to know what is meant; but if we wish to speak of the first stage of flies and butterflies and other insects together, then we must use the scientific word, and speak of them as larvæ, giving careful explanation." The meaning of the terms larva, pupa, and imago is next defined and illustrations given. Subsequent chapters treat of chrysalis, perfect insects, orders, flies, fleas, beetles, sawflies, wasps, and other insects that field and garden crops are too often exposed to. Methods are also given for their prevention and extermination. The book is profusely illustrated with woodcuts of the insects in their various stages, and will, we are sure, be very useful to those for whom it has been written.

— Compendio della Flora Italiana.—This useful publication has now reached the thirty-second number and the ninety-second plate.

— Journal d'Agriculture et d'Horticulture de l'Ouest.—Under this title a jouroal has just been started, dealing with agricultural and horticultural matters in the West of France. It is to appear fortnightly. M. J. Le Corvec is the publisher, Rue Nanteuil, Nantes,

— The Illustration Horticole,—The Directors of the Compagnic Continentale d'Ilorticulture have issued a complete index to the plants described and figured in the first thirty volumes of the Illustration Horticole.

Natural History.

THE KINGFISHER.—I have never noticed the kingfisher so plentiful on the rivers here as during the past season; but I fear that this rare and beautiful bird is doomed to extermination, even though there are but few responses to the following advertisement, which appeared lately in a Yorkshire newspaper:—"Wanted, kingfishers, clean and fresh killed, any quantity." This certainly looks like a wholesale attempt to exterminate, especially as the price offered for each bird is, I am given to understand, very high. No doubt the present searcity of the kingfisher is greatly due to the way in which it is hunted down by idle seoundrels, and the sooner such a foul game is stopped the better. River watchers, or, in fact, any person interested at all in our feathered tribes, on seeing such a heartless

game in practice should for once take the law into their own hands and give the perpetrators a good sound dressing, as a foretaste of what they might expect in the future. A. D. Webster,

The Flower Handen.

THE spring plants are unusually early this season, and had we not been visited with the destructive storms of wind and hail which occurred a fortnight ago the spring gardens would now have been unusually gay. The effect of these storms was not only to destroy the flowers but the foliage of the plants in exposed beds was also torn to shreds. In order to rectify this mischief the beds should now be carefully gone over, so as to remove the dead leaves and flowers, and where the soil is hardened by the heavy rains the surface should be loosened either with fork Where the bulbs are breaking through the ground they should, in the event of frost, be slightly covered either with leaf-mould or cocoa-fibre, otherwise they will suffer severely after the mild weather we have had. Cleanliness and good keeping should now be strictly maintained, as nothing is more essential in order to produce a good and pleasing effect. A few of the early blooming Roses may now be pruned, and as they are now commencing to grow it will be advisable to do this by degrees rather than by pruning close at once, so as to keep the back buds dormant as long as possible, as in the event of severe frosts destroying the forward growths these dormant buds will form a safe reserve to prune to later on in the season. Clematis will this scason require careful management, as they have already made considerable growth. Where trained against walls these can be easily protected either with mats or other safe and convenient covering nailed up in front of them during severe frosts, but where grown in masses in beds this is not so easily accomplished without breaking off the young shoots. The plan I have found best is to hoop over the beds with Hazel-sticks, and then place mats over the hoops; they should, however, be removed immediately the danger is past.

THE PROPAGATION OF THE SUMMER PLANTS should now receive every attention. All the deficiencies should now be worked up as quickly as possible, so as to enable the plants to become well possibly, so as to change the plants to become well established by planting time. All the quick rooting kinds, such as Verbeoas, Lobelias, Heliotropes, Salvias, Tropæolums, and Dahlias can easily be produced in any quantities if the store plants have been prepared according to previous instructions, and if plunged in a strong bottom-heat for a few days. Immediately they are struck they should be removed into cooler quarters to harden off, when they can either be potted singly or in pairs, or planted in frames where frost can be excluded, or else rather thickly into shallow boxes till required for planting. Pelargoniums and all the autumn-struck cuttings will now require to be potted, or planted in pits or frames. as before described. All this kind of work should be completed as soon as possible, so as to obtain good, sturdy, well-hardened plants at the planting

THE BULE STORE should now be examined, and where Gladiolus are showing signs of growth they should be planted, choosing a mild day for the operation. The soil should also be in a comparatively dry Ranunculus, Anemones, Tigridias, Lilies, Tritonias, and all similar bulbs preserved in the store through the winter, should now be planted when the weather is mild and dry. All these bulbs require a deep rich sandy loam, which should be made thoroughly firm at the time of planting; they should also receive protection should severe frosts occur. All of them, except the Lilies, require an open sunny situation; these, however, succeed best where they are partially shaded from the mid-day san. The late storms have unfortunately given plenty of work on the lawn and shrubberies in the removal of timber and branches which should be executed as quickly and with as little injury to the turf or walks as possible, and where planting either of trees or shrubs is required to fill the vacancies made it should be done without delay. T, S, C,

The Handy Hnuit Garden.

THE pruning of Cherries will now require attention in simply thinning out the small branches, and leaving them at their full length, as shortening them would only increase the quantity of wood for next year, and cause much overcrowding. On no account cut off large boughs, as that is almost sure to injure the trees, and produce gumming, which is always a bad sign. Standard trees do best on grass, where it is pastured and fed off with stock. Great care is required in nailing trees that are against a wall, so as not to bruise or in any way injure the branches, and see that nails which touch the bark of stem and branches are removed. Grape Vines may now be pruned, cutting them back to one bud, of course eaving the leading shoots 2 or 3 feet long; Black Cluster and Sweetwater are the only really to be trusted out-of-doors, and that only in favourable localities. On no account touch the Fig trees yet. We may have frost, which would be much more likely to injure them if pruned.

Where there are vacancies in the orchard of any kind they may still be made good by planting. Be careful when transplanting that the roots are as short a time as possible exposed to the air, and see that the trees are firmly and securely staked.

Bush fruits may still be pruned, but we deprecate the too free use of the knife, for if the shoots are left tolerably thick they shelter each other in the case of frost, and the crop will be far heavier, which will induce greater fruitfulness next year, and less wood; and should the crop prove heavier than can be matured it can easily be reduced by gathering the berries while green for the daily supply of the family, and the great secret is not only to get a good crop but to prolong the season of each kind as long as possible by planting early kinds in a sunny place, and late kinds on a north aspect, also where they can be protected from birds. north wall here of considerable length we grow Morello and late dessert Cherries, while the border is planted with Raspberry Carter's Prolific; Currant (black) Prince of Wales, and the new Black Champion; Gooseberry Warrington, and other late kinds; red Currant Victoria, white Currant Transparent, and Straw-berries Victoria, Loxford Itall, and Helen Gloëde, Stout posts are let into the edge of the border and wire netting a yard broad is attached, and from the top of these posts to the top of the wall is Eddy's square mesh netting. It takes but little more netting than if the wall only was covered, and in this way both fruit on the wall and in the border is protected from depredators, and the gathering scason prolonged. If lichens attach themselves to bush fruits a dusting of quicklime over them will clear the noxious growths away, and also in some measure protect the from birds. Dress the bushes with manure and afterwards dig the ground amongst them very shallow with forks. Prune and tie up espalier trees, and if stakes are used tar the pointed ends before driving them into the ground. The best support for espalier trees is strained iron wire with iron standards, but if galvanised wire is used the shoot should not be brought immediately in contact with the iron; make a tie on the wire first, then tie the shoot. The choicer kinds of Apples and Pears do well on the espalier, the large fruit of which would be blown off a standard before they were tipe. J. Rust, Eridge Castle, Sussex.

The Orangery.

The imported Oranges that have come into this neighbourhood are very sour this season, and those who have a few dishes of home-grown fruits will find them very nusful. The Tangterines, which usually ripen in September and October, are over, of course, and if the trees are now in blossom they must be kept in a rather dry temperature of, say, 60° at night. I fancy the fruit sets better in a temperature of 60° or even lower, than at a higher figure. Those trees that have fruit ripening on them should have a night temperature of 65°, and the trees at this season should be quite close to the glass. This is the time to wash the trees, and also to clean the house in which they are growing. Repotting may also be done: it is a good chance to do so when the ripe fruit has been gathered. Use good turfy loam, with a liberal sprinkling of crushed bones and charcoal, 3. Donglas, Great Gearies, 1flord.

APPOINTMENTS FOR THE ENSUING WEEK.

APPOINTMENTS FOR THE ENSUING WEEK.

Monday, Feb. 15 Sale of Lilies and other Roots, at Stevens' Rooms.

Royal Horicultural Society: Meeting of Fruit and Floral Committees, at 17 A.M.; Section of Fruit and Floral Committees, at 17 A.M.; Stevens' Rooms.

Wednesday, Feb. 15 Sale of Roots, Carlotte Societies meet in the Consortation of Province of Montal Auricula and National Carnation and Florete Societies meet in the Consortation of Province of Morris Sale of Imported Orchids, at Stevens' Rooms, Gracechurch Street, by Produce & Morris Sale of Imported Orchids, at Stevens' Rooms, Gracechurch Street, by Produce & Morris Sale of Imported Orchids, at Stevens' Sale of Imported Orchids, at Stevens' Rooms, Gracechurch Street, by Produce & Morris Of Horizon & Morris Of Horizon & Morris Of Horizon & Morris Of Horizon & Sale of Imported Orchids, at Produce & Sale of Imported Orchids, at Produce & Sale of Office of Hardy Plants, Bulbs, &c., at Stevens' Rooms.

A T the instigation of the Nursery and Seed Trade Protection Association a MEETING OF REPRESENTATIVE HORTICULTURISTS interested in the exportation of plants was held in the office of this Journal on the 6th inst. to consider what, if any, steps should be taken with a view to remove or modify the restrictions now put upon British horticultural commerce by reason of the Phylloxera laws as enacted by the revised Convention of Berne, and as carried out by the countries which have given in their adhesion to that Convention. The meeting was attended by Messrs. Backhouse (York), Bull, Cannell, Fisher (Sheffield), Laing, Sander (St. Al-Fisher (Sheffield), Laing, Sander (St. Albans), Turner, Veitch, and Williams, Dr. Masters being in the chair. Mr. Dyer, Assistant Director, Royal Gardens, Kew, was present unofficially, and explained the pro-visions of the treaty of Berne and the means to be adopted to comply with its enactments, including the procuring of the necessary certificates. Mr. McLachlan, one of our most eminent entomologists, also attended the meeting to give the results of his experience in the matter. Letters were read from Messrs. Van Geert (Ghent), Booth (Hamburgh), Krelage (Haarlem), Geo. Paul, F. & A. Dickson & Sons, Jas. Dickson & Sons, Hugh Low & Co., W. Paul, A. Waterer, J. Marriott, Keynes, Williams & Co., H. Bennett, and E. Sawyer.

An exhaustive discussion ensued (1) as to the

advisability or otherwise of requesting our Government to join the Convention of Berne;
(2) of approaching the Government by means of a deputation to the President of the Board of Trade; or (3) of securing a modification and uniformity of procedure in the mode of obtaining the necessary certificates.

It was, however, ultimately agreed, without a dissentient voice, that under existing circumstances, and in view of the facts brought before the meeting, it was not expedient to take any further action, but to let matters take their course, it being generally considered that the balance of advantage lay in enduring the present inconveniences rather than in taking any step which would in all probability be attended with even greater expenditure and annoyance than those to which the trade was now subject.

THE WEEK. - The Sibthorpian Chair of Rural Economy in the University of Oxford is to be held under the new regulations by Dr. GILBERT, so well known in association with Sir John Lawes for wen known in association with 31 John LAWES 107 libs life-long devotion to the science of agriculture. Formerly this chair was held with the then poorly endowed Sherardian Professorship of Botany, first by the late Dr. DAUBENY, and afterwards by Professor LAWSON, but it can hardly be said that the results were satisfactory. By the new regulations the Sibthorpian Professorship is wholly detached from the Botany Chair, and the Professor is to hold his professorship for three years, or for six, at his discretion. His duties will be to give instruction in the principles of agriculture and forestry. We earnestly trust the new arrangements may prove beneficial by securing to the future race of landed proprietors and tenants a knowledge of the principles on which the successful cultivation of plants depends. Certainly no fitter appointment than that of Dr. GIL-BERT could have been made, and as the duties involve

only the delivery of some twelve lectures during the academic year, it is to be hoped that the Doctor's work at the Harpenden experimental farm will not be seriously interfered with by his new duties, but that his sphere of usefulness will only be extended .-We are delighted to find that the opposition to the establishment of a proper laboratory for Dr. BURDON SANDERSON on the part of some anti-vivisectionist members of Convocation has been unavailing. It is quite sad to see such unreasoning and unreasonable hostility, not only on the part of the ignorant and unreflecting, but on the part of educated men, to the progress of physiological research by men no more wanting in their duties to dumb animals than themselves, but infinitely more capable of bettering their condition.—The appointment of Professor FLOWER, of the Royal College of Surgeons, to the Superintendentship of the Natural History Department of the British Museum, in the room of Sir RICHARD OWEN, will give general satisfaction among those who know the competence of the new Superintendent and the requirements of his office. - In the last number of Nature is a further contribution to the history of the flora of ancient Egypt, by Dr. SCHWEINFURTH, many of the illustrative specimens having been forwarded to the Museum of the Royal Gardens, Kew. In addition to the plants already mentioned in this journal Dr. SCHWEINFURTH now mentions leaves of Salix satsaf, and of the Date Palm, flowers of Papaver Rhoeas, Centaurea depressa, and Picris coronopifolia. Barley, Wheat, Beans, Flax, Lentils, tubers of Cyperus esculentus, as well as fruits of the Pomegranate, Doum Palm, Fig, &c., have been found. Cones of Pinus pinea and Juniper berries are stated to indicate commercial relations in those early times between Egypt, Greece, Asia Minor, and Syria. The whole article is one of exceeding value to those interested in the history of cultivated, or the geographical distribution and modifications of wild plants. -Among the publications we have received during the week, and to some of which we may have to refer more at length hereafter, are the Bushberg Catalogue of Vines, which is something more than a trade list, seeing that it contains an article on the classification of the American species of Vine, by Dr. ENGELMANN; abstracts of Professor RILEY's articles on the Phylloxera and other Grape insects; diseases of the Grape, by Dr. Engelmann, together with numerous cultural details, and a full descriptive list of sorts, with illustrations. Mr. Morrest Report on the Agricultural Resources of St. Helena, and the same author's little volume on the Resources and Prospects of British Honduras, can only now be mentioned, their importance de-mands fuller notice hereafter. A like remark applies to M. LAVALLEE's fine Monograph of the Large flowered Species of Clematis, with twenty-two quarto plates. It will create some surprise to learn that Clematis Jackmanni x is here considered not a hybrid, but simply a form of a species found wild in Japan and called C hakonensis. We scarcely think this statement will be allowed to pass without protest, in the face of the circumstantial account given in our columns in 1864, p. 173, by the raiser, and repeated in MOORE and JACK-MANN'S book on the Clematis; but we shall take an early opportunity of giving M. LAVALLÉE'S views on the subject, which in any case deserve respectful consideration.—Evidences of the passage not only of fluids from cell to cell of plants, but of the essential constituent of all plants, the viscid substance known as protoplasm, are multiplying. They will cause us to modify our notions as to the independent life of individual cells, and by showing more clearly than before their joint action by means of the communications in question, throw light on the causes of the movements of various plants or parts of plants vaguely referred to variations in degree of turgescence and consequent tension. In conjunction with the known contractile property of protoplasm these new facts point, not only to a foreshadowing of the muscular tissue of animals, but of the nervous system also. In addition to previous instances brought forward by GARDINER and others Mr. HICKS now figures in the Journal of Botany, and describes cases of a protoplasmic continuity in the Red Sea weeds.

- PARLIAMENTARY NOTES .- At the opening of the session on Tuesday, Sir JOHN LUBBOCK gave notice of his intention to call attention to the state of forestry in this country, and to move a resolution. Mr. INDERWICK gave notice, on the same day, to introduce a bill relating to the extraordinary tithe; and

Mr. HARRINGTON one relating to the planting of trees in Ireland. On Wednesday Dr. Lyons gave notice of a Bill for the re-afforestiog of waste lands in

-- St. Petersburg International Hor-TICULTURAL EXHIBITION .- It will be remembered that the exhibition and botanical congress, postponed from May last on account of the coronation of the Emperor, are to be held from May 17 to 28 next ensuing. Additional prizes are offered. Plants can be sent by sea from England, through the agency of Messrs. WATSON & SCULL, 40, Lower Thames Street. There will be three meetings of the Congress, the preliminary direction of which is entrusted to M. DE MAXIMOWICZ, of the Imperial Botanic Garden. The subject of the geographical distribution of certain plants of different families, wild or cultivated, will be considered in reference to their northern and southern limits respectively. Schedules and further particulars may be had on application to the Editor of this Journal, or direct from M. DE REGEL, Imperial Botanic Garden, St. Petersburg.

- EXCHANGE LISTS .- We have received the Index seminum of the Palermo Botanic Garden, and of the Jardin des Plantes, Paris, respectively. In the latter case all applications for seeds should be made before the end of the current month.

- "THE ENGLISH FLOWER GARDEN."-We are informed that in future issues of this book, noticed by us last week, the ordinary numerals will be followed from end to end, that there will be a full index, notwithstanding that the arrangement is mainly alphabetical; and that every illustration objectionable in any way will be drawn and engraved

- PHÆDRANASSA LEHMANNI.-This is a new species, discovered by LEHMANN on the western side of the Andes of the United States of Columbia, at an elevation of 7000 feet, and described by Dr. REGEL in the Gartenflora, t. 1138. The bulbs are about the size of a goose's egg, the leaves stalked, broadly lanceolate, the scape terete, bearing a few-flowered umbel of nodding, narrow, tubular scarlet flowers, each about 11 inch long, with projecting stamens.

- IMPORTED PRODUCE,-During the week ending, February 2, 23,264 bushels of Onions, and 7855 cwt. of Potatos, were imported into this country.

- ROYAL INSTITUTION .- On Monday last Sir J. D. HOOKER, K.C.S.I., was elected a Manager of this Institution in the place of the late Sir W. SIEMENS.

- HARDY PLANTS IN BLOOM, - Further evidence to the extreme mildness of the season comes to us from Mr. JOHN CLARK, in the form of a list of about four dozen hardy plants in bloom in Mrs. JOAD's garden at Patching House, Worthing, Sussex, among garden at ratening flouse, instanting the more remarkable of which are Tritonia Burchellii, Tritoma uvaria, Schizostylis coccinea, Polemonium coeruleum, Kniphona sarmentosa, Lithospermum cœruleum, Kniphofia sarmentosa, Lithospermum prostratum, Agathea cœlestis, Amphicome Emodi, Lagurus ovatus, and Abelia rupestris.

- JASMINUM NUDIFLORUM.-In a previous issue (p. 117) we referred to the pleasing effects of Jasminum nudiflorum in combination with Ivy: a correspondent now describes a similarly pleasing effect of this well-known Jasmine mixed with Yew. In this case the Yew formed a well clipped hedge from the pavement to the house in a neat and well kept fore-garden in the King's Road, Richmond. The bright yellow flowers of the Jasmine were equally dispersed all over the hedge, the dark green of which made them appear more brilliant than usual. These examples would point to the advisability of using Jasminum nudiflorum more in conjunction with evergreens, the foliage of which supplies what the Jasmine lacks. In our own case we find it very effective, not only against Ivy but also in front of a Pyracantha shrub.

- PANSIES IN POTS .- It is very unlikely that the Pansy will ever be so much grown in pots as it was thirty years ago, but could some idea of the beauty of the flowers in early spring, when grown in this way, be realised, we think not a fee lovers of the Pansy would grow a few plants in pots.

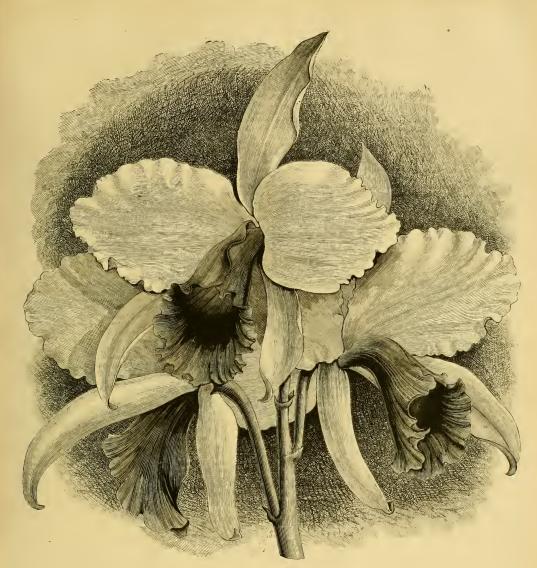


FIG. 35.—CATTLEYA PERCIYALIANA: FLOWER-SEGMENTS ROSY-LILAC: LIP MAGENTA-CRIMSON. (SEE P. 178.)

Plants potted up into small 60-sized pots in September are now full of roots, and require shifting into 48 or 32-sized pots, according to their size and dimensions; and they need rich soil; and if returned to the cold frame they will soon make a display of flower. Some plants in 48-sized pots, kept over from last year because potted late in the summer, and top-dressed a short time ago, are now blooming freely in a cold frame, where the blossoms, being protected, are as perfect and clean as any one can well desire them.

—— STRANGLED HYACINTHS,—This term may be applied to those Hyacinths which, whether grown in glasses or in pots, fail to develope their flowerspike, because the opening through which it ascends is too small to admit of its swelling, and it parts asunder while in the neck of the bud. It is happily not a common occurrence except in the case of

Hyacinths that are being forced into flower early under the pressure of great heat. It is by no means easy to have Hyacinths in bloom at Christmas, and to accomplish this they have to be sent along at a great rate, and we were recently informed that it is not uncommon to lose a large percentage by strangulation. Hyacinths in glasses are more liable to this than in the case of bulbs grown in pots. It would appear that it is traceable to a development of the flower-spike before the orifice at the top of the bulbs formed between the tips of the scaly leaves, is capable of affording it a passage; disappointments, therefore, are incurred in this way, and they have to be horne, for it is seldom that a second flower-spike is thrown up to take the place of the first. Probably the death of the topmost flowers which so often occurs is due to the same cause; the Hyacinth, it will be remembered, frequently expanding its flowers from above downwards, though its

inflorescence is called a "raceme," one characteristic of which is that the flowers expand in order, from below upwards,

— Mr. John Greenshields.—We deem it worthy of record that Mr. John Greenshields, gardener to the Earl of Ducte, completed last week fifty years' service as Head Gardener at Sarsden, Oxon, Mr. Greenshields, a native of Lanarkshire, and came to Eogland when a very young man, his first situation being at Dropmore, Bucks. Though in his eighty-first year he enjoys excellent health, and takes the full management of everything in his department. His well directed activity would put many active young men to the blush. Like most gardeners who have reached advanced years he acts upon the belief that his fruit trees will only yield their abundance after the application of his own knife. A second noteworthy fact is that Mr. Puch, who was Mr.

GREENSHIELDS' immediate predecessor, held the appointment over forty years. Mr. GREENSHIELDS was installed some time before Mr. PUGH'S death, and can still recount the latter's description of the great improvements made at Sarsden in the last decade of last century, soon after the estate had been purchased by Mr. JOHN LANGSTON, M.P., who was succeeded by his son, Mr. JAMES HAUGHTON LANGSTON, M.P., who died in 1863, leaving an only child, the present Countess of DUCIE. We are sure Mr. GREENSHIELDS will have the good wishes of his professional brethreo, that his long and honourable life will yet see many bright days.

- THE FRUIT BUDS .- There is ample evidence that the buds on fruit trees are finding the exciting influences of the mild weather operating to their Whenever a ray of sunshine peeps disturbance. out from behind the heavy clouds the whitened points of the buds, both on Pear and Apple trees, may be seen in abundance, whilst on walls the buds are of a deeper hue, yet showing ample evidence of activity. That the buds should show signs of expansion so early is, however, not a desirable feature. are yet a long way from the margin of the winter wood, and would prefer to he somewhat nearer the desired haven of spring ere we see our fruit trees teeming with their lovely blossoms. A few weeks of cold would prove most serviceable in keeping the trees in check, but should we, on the contrary, have a further spell of soft open weather, the March winds may become exceedingly unwelcome.

—— PRIVA LÆVIS is a hardy, tuberous-rooted perennial, native of Chili, and a member of the Verbena family, having, indeed, much of the habit of our common Vervain (Verbena officinalis), but the flowers are larger and of a rosy-lilac colour. Figured in Gartenflora, t. 1131.

—— GHENT NURSERIES,—In 1816, according to the Illustration Horticole, there were but thirteen nurseries in Ghent, and those on a small scale. The names of DE COCK, SFAE, and VERSCHAFFELT, were among the thirteen.

- COMPTONIA ASPLENIFOLIA is a pretty deciduous shrub, attaining a height of about 3 feet, and with sweet-scented Fern-like leaves. It is a member of the Sweet Gale family, and perfectly bardy in Britain. LOUDON'S name, "the Asplenium-leaved Comp-LOUDON'S name, "the Asplenium-leaved Comptonia," is not one which recommends itself to most people, as it is more cumbrous and somewhat less euphonious than its scientific appellation; "Sweet Fern," the name given in Dr. Asa GRAY's Manual, would be a preferable one, only the plant is by no means a Fern. In a wild state it is found sterile hills from New England, Virginia, to Wisconsin and northwards, The following memorandum occurs in Hortus Collinsonianus:-" Received from JOHN BARTRAM, January 22, 1756, three roots of Gale, with Spleenwort leaves. It makes a fine tea, and gives a good flavour to beer used as Hops," would appear from LOUDON, however, that Comptonia was introduced to this country in 1714. The generic name was given by SOLANDER in honour of IIENRY COMPTON, Bishop of London, the introducer and cultivator of many curious exotic plants, and one of the greatest patrons of botany and gardening of his

- BALANTIUM ANTARCTICUM .- There is now in the Zoological Gardens at Rotterdam a specimen of Balantium antarcticum, the trunk of which measures upwards of 21 feet in height, its girth at 1 foot above the tub heing rather more than 6 feet, whilst the total height from the top of the now but slightly ascending fronds to the bottom of the tub is above 28 feet. Altogether it is one of the largest specimens -if not the largest one-ever imported, and is certainly the largest in Holland. It was hought in 1879, not long after being imported, and ever since has enjoyed good health-in fact, last spring it threw up thirty-nine new fronds, and it is stlll adorned with a good number of a former year's growth. In the same gardens an Alsophila australis attracts much notice. as it has formed six branches, which seem to start from the same point, and are now, with one exception, about I foot long.

--- THE POLLUTION OF THE THAMES.-A deputation representing the inhabitants of Kew and

Richmond recently had an interview with the First Commissioner of Works to complain of the proposed erection of sewage precipitation works at Kew. The speakers contended that the works would do a great deal of injury to Kew Gardens, and would materially affect the welfare of Kew and Richmond. The scheme provides for the pumping into the Thames of 5,000,000 gallons of sewage daily. Ham would undoubtedly be a most fitting place for the erection of such works, because there was not such a large residential population. Mr. SHAW-LEFEVER, in reply, said the only question was whether all the sewage should be pumped in at one place or at three or four different places; but anything likely to injure Kew Gardens would receive his careful consideration.

A MEMORABLE TREE,—During the recent gale one of the most noted trees in Sherwood Forest fell a prey to the wind's violence. It was known as the "Major Oak," and was situated near Edwinstowe. The tree, a grand old Oak, had a girth of 28 feet, and "the circumlerence of the outspread tree at the utmost extent of its branches was 240 feet, It was at one time, says the Daily News, called the Cockspen Tree, because its interior was used formerly as a hen-roost. Latterly many pic-nic parties have gathered in the hollowed-out trunk, and in a history of Worksop the following reference is made to the tree:—"Seven persons at once have been known to partake of a meal in it; while no doubt with a little contrivance it might have accommodated more." Notwitstanding its internal decay, the old Oak (which had existed for more than seven centuries) was one of the noblest trees in the kingdom."

- Undressed Flowers at Exhibitions .-One result of the establishment of a National Chrysanthemum Society has been the reception from not a few lovers of the Chrysanthemum of requests that undressed flowers should be encouraged as far as possible at the Society's exhibition in November. appears a very easy matter to provide classes for these, but how is such a regulation to be applied? How can it be expected that judges should know how much or how little dressing has been applied to a Chrysanthemum bloom? Old Chrysanthemum cultivators say that the request for undressed flowers cropped up years ago, and classes were made for them, but it was lound that the judges always gave the prizes to the best flowers, and trusted to the honour of exhibitors. But no one could undertake to say that a flower placed on the exhibition table had been dressed, or not been dressed. Dressing may be said to consist in so arranging the petals of a flower as to make it appear as symmetrical as possible, and it is obvious that a clever dresser has an advantage over one that is not so expert at this work. Nothing should be added to a flower. but it is lawful to take from it superfluous or damaged petals, and flowers are greatly improved by this pro-Who could venture to say that a flower had been so touched? And in the case of some varieties of Chrysanthemums it is possible to grow them so approximately perfect in shape that little, if anything, in the shape of dressing is required. It would be hard if a judge were to assert that such a flower had been dressed. However much one may desire to encourage as far as possible a mode of exhibiting that dispenses as much as possible with anything in the way of dressing, yet it is not so easy to prohibit the practice as is imagined. Any suggestions that may lead to this desired end are always welcome, if they are practical. It has been remarked that but little dressing is required in the case of the Anemone. flowered section, but we were recently informed by an old grower and exhibitor that there is no class of Chrysanthemums that can be so greatly improved in appearance by dressing as the Anemone-flowered Chrysanthemums,

— FOREST FLORA OF JAPAN.—This, according to Dr. YARONN NAKANURA, may be divided into five zones, according to altitude, as follows:—(1) Zone of Pines, reaching to a height of 1500—1600 feet. In the lower part, Pinus Massoniana, with evergreen Oaks, Quercus glauca, Q. glabra, Buxus sempervirens, &c. Above these Pinus densiflora, Zelkowa Keaki, Gingko biloba, Sophora Japonica, Populus Sieboldi, Ilex crenata, &c. (2) The zone of Cypresses, from 1500—3500 feet. Here occur the Retinosporas obtusa, pisifera, Podocarpus macrophylla, P. Nageia, Sciadopitys verticillata, Torreya nuclifera, &c. (3) The zone of deciduous trees, from 3500—5100 feet,

In this zone occur Magnolia hypoleuca, Alous campestris, A. maritima, Juglans Sieboldiana, Acer palmatum, A. crattegifolium, &c. (4) Zone of Firs, extending from 5100—7200 feet. At the lower part occur Abies firma, A. Tsuga, and Larix leptolepis; while above occur Abies Veitehii, Picea Alcockiana, P. polita, &c. (5) Zone of Alpine Pines, from 7200—8400 feet. In this zone grow Pinus parvifora, Alnus viridis, A. firma, Betula alba, Sorbus aucuparia, &c.

- TOXICOPHLEA THUNBERGII .- Like many more of the Dogbanes this is possessed of a poisonous milky juice, otherwise it is a beautiful free-flowering shrub of some considerable size. The flowers may be likened to those of a Bouvardia in shape, but are very much smaller, pure white, and produced in dense, sub-sessile, axillary clusters, all along the shoots of the previous season. They keep up a succession from February to April, and the delicious odour they diffuse through a house, especially when the sun shines, is alone a sufficient recommendation for admitting the plant to any collection of stove-flowering subjects. It differs from T. spectabilis in the shorter propor tionately broader leaves, and the more elongated branching flower-cymes. T. Thunbergii was intro duced as long ago as 1787, but has flourished under a rather labyrinthine synonymy. Besides the above name it is described or recorded under the names of Cestrum venenetum and Acokanthera veneneta, while the Genera Plantarum adheres to Acokanthera, and limits the genus to three species.

· PINGUICULA LUTEA.-We have recently had sent us to name specimens of this wonderfully pretty species. Nearly seventy years ago it was in cultivation in this country, for a characteristic figure is given in the second volume of the Botanical Register, tab. 126; in all probability, however, the plant was soon after lost to English gardens, and so its re-introduction deserves meation here. P. lutea is undoubtedly one of the handsomest species of a genus which embraces a good many very showy plants; it has deep glossy yellow flowers, from I to II inch across, borne on scapes from 6 inches to I foot in height. The rounded lobes of the corolla, being rather deeply 2 to 4-cleft, give a particularly distinct and striking aspect to the large brightly coloured flower. No more charming companion plant could well be imagined for the Mexican P, caudata, which, with its large deep bright violet-purple flowers caused some little sensation when first exhibited a year or two ago at one of the meetings of the Royal Horticultural Society by Messrs. SANDER & Co. A figure of this species, with the name under which it was exhibited, P. Bakeriana, is given in our columns for 1881, vol. xv., p. 541, and another will be found in the Botanical Magazine, tab. 6624, under the correct name of P. caudata. No doubt the same treatment which proves so successful for P. caudata will do for P. lutea. The gentleman who has re-introduced the latter species writes:—"I found the flower very common in Florida, growing with two other species, wherever there was a patch of marshy ground among the sandy soil, but never in the very wet marshes.

They were in flower from the middle of February to the middle of March, when I left the country. too probable that P. edentula, which was cultivated at Kew in 1823, and is figured in HOOKER's Exotic Flora, tab. 16, has also disappeared from cultivation. This last was sent to Kew from Savannah, and is remarkable for its paler yellow almost regular

- NEW ANNUALS .- In this season's issue of Messrs. VILMORIN-ANDRIBUX ET CIE.'s list a new white Eucharidium is highly recommended for flower garden purposes, and also as a plant for pots. belongs to a very useful class of annuals, which are well adapted to a variety of uses in flower garden and window decoration, especially in those positions where only subjects of quite moderate dimensions are required. Partaking of the general characteristics of the Clarkias, being as abundant flowerers, but smaller in all their parts, and very lasting, they are capital things for spring and early summer beds, as are all the varieties of Clarkia as well, although we do not see them so much grown as they once were. When sown early in September in a cool frame or out-of-doors in a warm position, and then pricked off into pots when large enough, and kept in a cold frame and treated after the manner of Carnations, they will be in good order to plant out in March and April.

Managed in this way the Eucharidiums flower beautifully and last longer in flower than when they are sown in May in the open border, and got to flower in the hottest part of the summer. A double white Eschscholtzia is also to be found in the above mentioned list; this should form a capital contrast with E. Mandarin, if the plant should be found to answer the description giveo of it; and as the genus does well io most parts of the country, it will be an acquisition in hardy border annuals. It is said to be very flotiferous, earrying its blooms in bunches,

TEA CULTIVATION IN AMERICA.-From experiments that have been made in the cultivation of the Tea plant in North America, it seems scarcely to be expected to become a profitable crop : not that the plants do not thrive, but that the Tea itself, as prepared for the market, lacks strength. It seems to have been in the latter part of the year 1879 that the cultivation and manufacture of Tea was taken up in earnest at Summerville, in America, by a thoroughly practical and competent person, who had previously had considerable experience in the Tea plantations in British India. The plants grew well, and in the spring of 1880 the attempt at preparing or manufacturing the Tea was considered encouraging. The make and appearance of the Tea were all that could be desired, but it was found upon testing it that it was very deficient in strength. This, it was thought, might be remedied by special attention being given to the plants, and they were consequently carefully pruned and manured, with a result of a most satisfactory growth and fine crops of leaves. Upon again being tested by experts, the Tea was found equally deficient in strength, so that it is considered that if Tea is to be grown in America the State of Florida must be looked upon as presenting the most favourable conditions. The United States Economist recommends its cultivation as supplemental to other agricultural enterprises, "Each farmer," it says, "may raise enough for his domestic consumption, for ten or twelve trees will furnish enough Tea to meet the wants of a family of eight persons; the labour to cultivate a few Tea plants would only absorb the odds and ends of a farmer's time, which might otherwise go to waste."

— PRIMULA LONGISCAPA, Ledeb., is a species found on the Altai and Ilithal Mountains, having radical tufts of long-stalked, spatulate, entire, glabrous leaves, from the centre of which rises a scape 8—10 inches high, bearing a terminal umbel of small rose-coloured flowers, the petals of which are very deeply two-lobed. It is, according to REGEL, who figures it in the Gartenflova, t. 1132, the same species as that called intermedia in the Bot, Mag., t. 1219.

--- CHAMÆDOREA SCANDENS. -- Throughout this large and varied genus we have a considerable number of types of greater or less value for horticul-tural or ordinary decorative purposes. Generally they are characterised by slender reed-like stems, which often require support after they have attained The most remarkable feature noticeable in this species is the manner in which the leaves hang down as if fractured near the base. A few of the lower ones retain their arching habit, and the young ones before expansion grow erect, so that we have in this one of the many instances of an expedient in Nature by which slender subjects like this can scramble up through forest vegetation, and by the after deflection of their leaves maintain their position. A tall specimen in No. 1 house at Kew, with its branching scarlet spadices and olive-green fruit, is by no means unornamental.

— THE BLACK BEARBERRY (ARCTOSTAPHYLLOS ALFINA).—This rare and interesting native shrub, although not by any means difficult to manage if allowed certain conditions, is not at all frequent in British gardens. At Kew it succeeds very well among stones in a rather dry elevated peat border. It requires an airy position, and is somewhat averse to shelter, being a native of cold or mountainous countries. In Scotland it occurs on dry barren mountainous places from Perth and Forfar northwards; the extra British distribution being Arctic Scandinavia, mountains of Central Europe (just below the snow line), and cold and Arctic Asia and America. Under the old name of Arbutus alpina, Franklin, in his Journey to the Shores of the Polar Sea, says he found an abundance of the fruit to which the natives

gave the name of Magpieberry; the traveller and bis companions found this an agreeable article of food. The plant forms stout woody interlaced patches, with leafy branches and scaly bark; the wrinkled serrated deciduous leaves are much unlike those of the common Bearberry (A. Uva-ursi). The black fruit, about the size of a Sloe, is ripe in September, and has a taste somewhat resembling that of black Currants. The alpine or black Bearberry is the badge of the Clan Ross.

- THE GOLDEN ELDER is, without doubt, one of the best of all "pictorial shruhs." A clump of this form of our common native Elder makes a mass of rich colour not surpassed, or indeed perhaps equalled, by any other hardy deciduous tree. The richest tints are assumed by plants which are annually cut in, and either as a single plant dotted here and there in the pleasure-ground, shrubbery, or planted in a clump for more decided effect, the Golden Elder so treated is unique. In its way it is quite as good as the purple-leaved variety of the common Hazel-nut, which likewise is capable of being used with great effect by the landscape gardener. A cut-leaved form with green leaves is a very ornamental shrub, as is also a white variegated sub-variety; this latter, however, is very subject to revert to the one with green soliage.

READING HORTICULTURAL SOCIETY.—
What is termed the spring show of this Society will take place on Thursday, May 15, and the summer show on Thursday, August 21. The Chrysanthemum show held last year by the Society will be continued this year also, but will be managed by an independent committee. The Reading Society has apparently discovered, in common with other societies, that it can hold two exhibitions and make them pay, but that the addition of a third is too heavy a burden to be borne.

- THE WEATHER .- General remarks on the temperature, rainfall, and duration of bright sunshine, for agricultural and sanitary purposes, during the week ending Feb. 4, 1884, issued by the Meteorological Office, London:—The weather has been very cloudy or dull over the whole kingdom, with a good deal of rain in most places. The temperature has been above the mean in all districts, the excess over central, southern, and eastern England being as great as 4° or 5°. The maxima, which were registered on as 4 or 5. The maxima, which were registered on January 29 or 30, varied from 52° in "Scotland, W.," and the "Channel Islands," and 53° in "Scotland, E.," and "Ireland, N.," to 56° in "England, S.," while in "England, E.," and "Ireland, S.," the thermometer rose to 57°. The minima were recorded on February 3, and were generally rather lower than of late, ranging from 24° in the "Midland Counties" to 29° In "Ireland, W." In the "Channel Islands" the temperature did not fall below 34°. The rainfall has been about equal to the mean in Ireland and the east of England; but more in all other districts. Bright sunshine has been less pre-valent than during last week. In "England, N.E.," there was none at all; but elsewhere the percentages of possible duration ranged from (in "England, S.") to 24 (in "Scotland, E."). Depressions observed :- During the greater part of the period some large and deep depressions passed from west to east, to the northward of Scotland and over Scandinavia, so that the prevailing winds in our islands were south-westerly or westerly. On the morning of the 2d, however, a rather deep depression appeared over the south of Ireland, and in the course of the succeeding twenty-four hours its centre passed in an east-south-easterly direction across the Channel and south of England. During its passage the wind increased to a fresh or strong gale at all except our extreme northerly stations, from north-east or north in the north-west, north, and east; and from south-west, and subsequently north-east, in the south and south-east. As this disturbance passed away from our neighbourhood the barometer rose with great rapidity at the southwestern and southern stations, and by the end of the period an anti-cyclone had been formed over France.

— GARDENING APPOINTMENTS. — Mr. W. SHERWIN, late of Charlwood, Huyton, Liverpool, as Gardener to Sir Andrew B. Walker, Osmaston Manor, near Ashbourne, Derby.

CINCHONA IN THE NILGIRIS.

SITUATED on the south-eastern slope of the Nilgiri Hills at the top of the Auchterlony Valley, and directly overlooking the Wynaad and Mysore districts, are the Government Cinchona plantations at Nedi nultum. These plantations, about 20 miles distant from Ootacamund, have hitherto furnished the principal supply of Cinchona bark exported from southern India. The plantations are three in number, viz., the Nedinultum estate, the Wood estate, and the Hooker estate—the latter named, I believe, in compliment to the present Director of Kew Gardens. The amount allowed by Government for the keeping up of the plantations has of late years been principally expended on the Nedinultum plantation, the two others being at present in a semi-abandoned condition, mainly attributable to the fact that the surface-soil containing the rich vegetable humus so essential to the growth of the Cinchona has been nearly all washed away by the heavy rains of successive seasons, and no regular attempt has been made at improving the soil by applying manure or any fertilising matter.

The Nedinultum plantation consists mainly of the red-bark tree, Cinchona succirubra, but contains likewise a good sprinkling of the crown bark, C. officinalis, and grey bark, C. micrantha, as well as C. pubescens, a well marked hybrid between the two former, and a few C. Calisaya, a group containing such a host of sub-varieties and forms merging more or less into each other as to have formed the basis of a never-ending controversy concerning the proper name due to each particular form; and it is needless, perhaps, to add that the names applied or suggested are almost legion, whilst each fresh one only adds to the existing confusion.

Two well-built bungalows exist on this estate, as well as two of smaller dimensions for the use of the clerks and assistant overseers, the extensive drying sheds being well worthy of a visit. Here the Cinchona bark, after being collected from the living trees by the alternate stripping system, or the Java process of scraping or uprooting, is dried by fire-heat, and securely packed in bales of 100 lb. each, and marked ready for the market. A new system of drying and packing houses is now in course of completion, the main building being filled with bark on the occasion of my visit for the first time. Owing to some defect in the building of the flues generating the dry heat necessary to cure the Cinchona bark, the fires did not draw satisfactorily, and the flues not being properly set, had burst, filling the building with smoke, much to the deterioration of the bark contained therein, the brickwork and woodwork in general having been done by cheap contract labour improperly supervised, leaving much to be required before the buildings approached perfection. Near the drying sheds is erected a long span-roofed propagating-house, heated also by flues; this is used principally for the propagation of C. pubescens and C. Ledgeriana, thy latter taxing the abilities of the officials to the uttermost from its shyness of propagation when in the younger stages of growth.

Fully one-third of this plantation has been uprooted during the last two seasons, and is now being replanted with C. pubescens, a fact which speaks highly for the far-sightedness of the manager in charge, as undoubtedly this will be the Cinchona of the future. At the elevation of 5000 feet-the altitude of the Nedinultum estates-in a plot well sheltered from the south-east monsoons, were to be seen two fine specimens of the "hard Carthagena" Cinchona, C. cordifolia, introduced to the Nilgiris by Mr. R. Cross, in 1880, from South America. These were fine sturdy young plants, upwards of 4 feet in height, the result of eighteen months' growth. It is a matter for regret that no energetic attempts have been made to extend the number of plants of this new kind, or that of its fellow novelty, the Calisaya of Santa Fé, not more than thirty or forty being alive at the present time, although most easy of propagation-private planters, from some unaccountable misunderstanding, being denied plants of these species when they apply to the responsible authorities for them, even though they may possess every appliance for propagating them successfully and extensively. Three or four large nurseries are kept well filled with plants and seedlings for supplying the estate and neighbouring planters who purchase at the very moderate rate of 5 rupees per 1000. W. 7. Kemp.

JAMES GRAY.

WE are indebted to Mr. Alfred Gray or the opportunity of presenting our readers with a portrait of his father, the late Mr. James Gray, of Danvers Street, Chelsea. Mr. Gray, who died in November last, was, it will be remembered, one of the oldest members of the horticultural building trade, and for his many good qualities was very highly respected. Further particulars respecting Mr. Gray's career will be found in our issue for December 1, 1883.

Home Gorrespondence.

Masson's Drawings of South African Plants.—In hunting up some references for certain South African Orchids, I lately came upon the following interesting note in The Yournal of Science and the Arts, 1818, vol. iv., p. 199, relative to some drawings brought by Masson from the Cape:—"Mr. Francis Masson, the late intelligent and industrious collector of plants, while procuring supplies for Kew Gardens, unexpectedly met with, among the Dutch soldiers who guarded that colony, an artist of great skill as a designer of the objects of natural history. Availing himself of this circumstance, he formed a considerable portfolio of coloured drawings of the samples of the more curious objects of his pursuit, and especially of such as he deemed most refractory to exotic transplantation. They have since been added by Sir Joseph Banks to those treasures so long regarded throughout the world, to their possessors and our own country's honour as the best friends of science." Where are these drawings now? The above would seem to imply that they should be in the Banksian collection now in the British Museum, and it would be interesting to know if this is the case. In the volume of the work from which the above is quoted, and in several of the succeeding volumes, are some coloured plates of Cape Orchidis, said to be copies of some of the drawings above alluded to, and probably the plates in Masson's Stapeliae Nova are from the same source. N. E. Bresum.

Ficus australis.—This useful decorative plant is as well worth attention as F. elastica, which it much resembles. The full-grown follage is nearly as large as in that species, but hardly so pendulous, colour and habit being similar. The terminal buds are sheathed in a green envelope, instead of a red one, as in F. elastica. The plant will endure ordinary greenhouse temperature at all seasons, is easily grown, and suffers from no insect pests, so that it is eminently suited for room decoration. M.

Luculia gratissima,—When visiting my neighbour, Mr. Harris, at Alnwick Castle, the other day, I was delighted to see a grand plant of Luculia gratissima in full flower; it had upwards of forty trusses of bloom, which I could compare to nothing else than large trusses of Hydrangea, growing on one of the pillars of the large conservatory, which was very gay with Azaleas and other flowering plants. It was a very pleasing sight indeed. From its profuse flowering Mr. Harris was rather afraid it indicated weakness, but to all appearance the plant showed no signs of unbealthiness. There is much to write about from this fine place, but I will only add in particular that the fine collection of Orchids which has been got together of late years are in the best of health; and under the direction of such an able chief as Mr. Harris we may expect to hear more of it in future. D. Inglis, Howick.

Squirrels and Lime Bark,—For some time past I have been puzzled to account for the white-barked appearance of the branches of Lime trees in the park here, but it is no longer a mystery, for on examinoing the nest of a squirrel to-day I found it almost entirely composed of the bark of this tree torn into shreds, These little animals are also very destructive to the young buds of the Horse Chestnut, and on several occasions we have had to use strenuous measures to stop their depredations, A. D. Webster.

Thrips and Red-spider. — A novel way of getting rid of these pests on Azaleas was adopted some years since by a nurseryman in the neighbour-hood of Brixton. His plants had become, through great neglect, so inlested with these insects that they threatened to cast the whole of their foliage, the loss of which would have been followed in that case with that of the flower-buds; so means had to be found to touch them. Doses of Gishurst Compound and tobacco-water (paraffin was not known then) were syringed on them, they being too big for sousing overhead in a tub; but the effect was nil. Smoking could not be thought of, owing to the fearfully dilapidated condition of the worthy proprietor's houses, so as a

kill-or-cure remedy worthy of the owner, whose idea it was, the whole collection was thoroughly coated with limewash in a dilute form syringed on to them two or three times, always waiting a day or so to let one coat get dry before giving them the next. The remedy was a drastic one, but it was effectual, the plants losing but few more leaves, and no bloom-buds. After remaining on for a fortinght or more the plants were taken out-of-doors and well washed with the aid of an engine whilst lying on their sides, the coating of lime bringing away with it dead insects that had been suffocated, the eggs, and all deposits. M.

Violet Empress Augusta for Forcing. — Amongst the Violets of recent introduction, all of which claim the possession of better qualities than the older ones, I know of none which can rival Empress Augusta in any way. It was exhibited for the first time at the Berlin winter flower show in January, 1852, by Messrs. A. Rathke & Son, of Praust. All who saw it there were surprised at its striking beauty, and, indeed, one can scarcely imagine that any Violet could be so perfect. We have cultivated it since its introduction, and have thrown all the other sorts away. With us it has been flowering since September (of course, in different batches), and

ample justice. With the production of it he had nothing to do, I thought the Pelargonium Society had a rule compelling the exhibitor to affix the raiser's name when showing a new flower. It was not followed in this case. *The Raiser*.

Ivy and Box Propagation.—It is sometimes required to produce Ivy in great numbers for use in the flower garden, such as patches, edgings, and the like. To buy the plants would be an expensive item. Plants of Hedera Helix, dug up in woods, seldom look well the first season, if they live at all, so that propagation from the shoots of plants on walls, &c., alone remains. If a mild hot-bed from leaves, or from old hotbed material mixed with fresh dung, so as to afford a gentle heat, were thrown together, and a frame put over, a good assistance will be obtained with which to begin the work of multiplying stock. Some boxes (Pelargonium boxes) should then be filled with sandy soil, and the Ivy cuttings, cut to 5 or 6 inches loog, dibbled in them. As the boxes are filled put them into the frame, if the rank heat and steam have declined. The frame will require ventilating in the morning between 9 and to o'clock to get rid of the extra amount of moisture that accumulates in the night. Shade must be given when the



THE LATE JAMES GRAY.

it will continue to do so until the plants out-of-doors come in. The flowers, which appear in rich abundance, are thrown up about 2½ or 3 inches above the leaves, all at the same height; they are of a very beautiful dark blue, and of bold habit, the stalks being nearly as robust as those of The Czar, but straighter. Empress Augusta is said to be the result of a cross between V. russica and V. semperflorens, and indeed it possesses the good qualities of its parents, vir., the beautiful flowers and the ability of bearing early forcing of the first and the abundance of flowers of the latter in a much enhanced degree. We have had young plants with more than forty flowers at once in bloom. Frite Lenz, Danzig.

Honour to whom Honour is Due,—As a "Son of Thor" I wish to know why the "hardworkers" in the paths of floriculture do not get the credit of their labours. Your notes on "The new flowers of the year" have led me to ask the question. It is there intimated that "the singularly novel" Pelargonium "Dresden China" is a production of Mr. Turner. As the same statement has frequently occurred, and as precisely the same thing also occurred with another excellent seedling of mine, The Maid of Kent, I suppose it will always be size was non vabis mellificatis apes, but Dresden China was merely sent to Mr. Turner as an old friend, and as one who, I knew, would do it

sun shines between 10 A.M. and 3 P.M., then sprinkle lightly, and close the frame till 6 P.M., when a thin wedge may be placed under each light for the night, and the frame be covered up. If this work is undertaken in February or early in March the plants ought to be potted, hardened off, and ready to make use of late in April. Ivies may be struck in autumn, under the cool treatment, by beginning with the work in September, using the same soil-boxes, e., and putting them into close cool pits or frames till rooted, which may occur any time during the winter. Attention must be given to airing, watering, but shading will most likely be dispensed with. Cutings of Box are also successfully and quickly struck on the cold plan at the same time of year, but heavy sandy loam is the better soil for them, as they must be kept uniformly moist till struck, when they may be at once planted in the open ground. M.

Dracæna Goldieana (see Enquiry, p. 155).

—My experience of propagating the above is as follows: — Two years ago I cut down a plant 3 feet in height, which had lost its lower leaves. The top (about 1 foot long) was put in a 48-poi in the usual way, plunged in bottom-heat of 80 to 90°, and covered with a handglass; the leaves were supported with sticks bent like a hairpin, and care taken as to shading, &c. It rooted in three months, and only lost one of the lower leaves. I

potted it on, and it is now 3 feet 6 inches high, over 2 feet across, with leaves 7 inches in diameter, and it will soon require cutting down again, as it has not thrown out any laterals. I also put in five eyes, and of these three rooted, two of which had two suckers each. T. E.

Asplenium Adiantum nigrum var. caudifolium (Woll.).—This is a new form, uamed by Mr. G. B. Wollaston, but found by the writer in July last in the Dartmoor district, where some yards of a stone though its spores must have been scattered freely, I could not find a single plant of it outside the range of some yards, where it not merely predominated, but, as I have said, quite monopolised the space indicated—a fact which points to some subtle local influence, for which, however, it is difficult to account, the whole dyke being apparently similarly built and circumstanced. Singular to say, I was attracted to the find by seeing a markedly caudate frond belonging to an intermediate and non-depauperate form, which proved to be the sole plant of its kind in the batch.

coral colour, free from the corrugations so remarkable in A. Andreanum." The spathe varies in colour according to age, or perhaps differs somewhat in different individuals, for we note that while the first specimen we saw was described as above, another in the Royal Gardens, Kew, is stated to have had spathes of a peculiar deep red colour, while in the plant from which our illustration (fig. 37) was taken the spathe was of a shining rosy-lilac colour. The spadix is vory-while, flushed with rose. Our illustration was taken from a plant in Messrs. Veitch's nursery.

Mildew or Fungus on Imported Lily Bulbs.
—For several years I have supplemented my homegrown stock of Lilies, by additions from imported Japanese. Almost invariably after being put into the soil the scales, and often the base of the bulbs, get attacked with a species of fungoid rot, often in patches over the scales, sepecially in spots, that seem as if bruised. I take it for granted you have seen it already, otherwise I should forward you some decomposing scales. Now it seems not to be produced by moisture, nor yet by dryness, nor by a high nor a low temperature, for I have tried all. As a rule, I did not lose many, and have to thank the vigilance I used in at once cutting away any diseased part, and immediately dusting it with charcoal or very fine dust. I would strongly recommend in case of pot Lilies, that are accessible, to examine them until started into active growth, once a week. From the fact of homegrown Lilies—I have auratum specially in view—not being thus attacked, I conclude this fungus is not native. What do other observers say? W. T. M., Clonnel. [If our correspondent will plunge his newly-imported bulbs in cocoa-nut fibre out-of-doors, and not pot them until they commence to grow, he will not lose any, presuming that the bulbs are sound. Ed.]

Canker in Fruit Trees.—I have carefully read the remarks on this subject at p. 150, and also Mr. Harrison Weir's letter at p. 152. At p. 150 refer-ence is made to various kinds of fruit trees, but I take the remarks on this subject at p. 150, and also Mr. Harrison Weir's letter at p. 152. At p. 150 reference is made to various kinds of fruit trees, but I take it that Mr. Weir alludes to the Apple tree only. If the question is narrowed down to one kind of fruit tree only, and that the Apple, I I acrog gardeners in that case are only too well acquainted with canker. I'we receive from gardeners at least three different diseases as canker in Apple trees, and believe the term to be very indefinite. Eb.] How it is caused is a question that has often been asked, and the answer has always been, "By the roots getting down into unsuitable soil." In what way does the unsuitable soil." In what way does the unsuitable soil." Is mother question that may be fairly asked. I do not know whether scientific inquiry has gone so far as to answer it; indeed, if Mr. Weir is right in his surmises, further inquiry into the vitating nature of the subsoil would be superfluous. I have always acted on the assumption that the evil lay at the roots, and the question arises again—How is it that cutting the roots running into the subsoil, and adding fresh loam for the new fibres to work into, stops the progress of the canker? I can give many instances of this. When I first took charge of the gardens at Loxford Hall there were many veryold Apple trees, and some younger ones. Now nearly all the young trees were badly cankered, a few of the old ones also; while some old trees were not cankered at all. The young trees had been lone by merely digging a hole large enough for the roots, filling in the same soil again. I am sure many experienced gardeners will hear me out when I say that Apple trees planted in this way amongst old ones seldom do well, and very often canker badly. That it was so in this case there is no doubt. By a different system of managing the soil I found an difficient system of managing the soil I found an difficient system of managing the soil I found an difficient system of managing the soil I found an difficient system of mana ones seldom do well, and very often canker badly. That it was so in this case there is no doubt. By a different system of managing the soil I found no difficulty in preventing canker, with two or three exceptions, to be referred to hereafter. I planted about one hundred Apple trees, both on the Crab and Paradise stock. The first operation was to trench the soil about 18 inches deep, and in doing so a barrowload of soil from an old pasture was put into each trench 9 feet long by 2½ feet wide. Some rotten manure was also mixed with it. When the trees were planted, some fresh loam was placed round the roots. They did remarkably well the next season, making strong clean growths. The following season lagain lifted the whole of the trees, re-trenched the ground, adding the same quantity of loam, and on planting the trees the same quantity of loam, and on planting the trees the same quantity of loam was placed round the roots, and during the twenty years I was there the only cases of canker occurred in two trees of the Wellington (or Dumelow's Seedling), and in a tree of Ribston Pippin; all of the cankers occurred in the canker occurred in the canker of the cone year, and the other side the following season, taking away the old soil and adding fresh to it. The canker was stopped, and the fruit, which had also deteriorated in size and quitty, was greatly improved. If insects are the primary cause of canker, how does it happen that those planted on prepared and recovated soil are free from it,



FIG. 37.—ANTHURIUM FERRIERENSE X: SPADIX VERY PALE ROSE: SPATHE PALE ROSE, OR PINK-CORAL COLOURED.

dyke had been monopolised by it, to the entire exclusion of the normal form, which grew in profusion all over the rest of the dyke. Amongst several hundred plants I have failed to discover a mature frond which does not show at least two or three yellow lobes at the point of greatest depauperation, while the caudate termination is very evident, even in small seedlings. The pinoæ also show a strong tendency to partake of the caudate character of the apex of the frond. From the great number of plants I found, and the fact that amongst them no normal seedlings were discoverable, it would seem that in some way the variety is more vigorous than the normal form, and able to oust it; yet, on the other hand,

It was much handsomer than caudifolium, but under cultivation has reverted altogether to the normal form, while caudifolium proves quite constant. Chas. T. Druery, Fernholme, Forest Gate.

Anthurium ferrierensex. — In March of last year this plant, stated to be a hybrid between A. Ornatum and A. Andreanum, was shown at one of the meetings of the Royal Horticultural Society, when it obtained a First-class Certificate for its raiser, M. Bergmann, of the gardens fat Ferrieres. "The leaf-stalks are terete, with a thickened extremity, bearing large cordate ovate leaves with remote venation, and spathes of a lustrous pink-

while they were badly injured in every case on unpre-pared ground? As soon as trees do become cankered, the ruptured bark becomes a hiding-place for many insect pests, which spread from thence to other parts of the trees. American blight frequently finds a home in the cankered parts, indeed this pest often causes protuberances to arise on the smooth bark of young trees, and this part in time forms an obstacle to the flow of sap, and also forms something very like

young Irees, and this part in time forms an obstacle to the flow of sap, and also forms something very like canker. 7. Dong/ats.

—It will be interesting to learn what the entomologists have to say to Mr. Harrison Weir's theory as to the cause of canker in fruit trees. It is significant that from the same side of the Thames the late Mr. Smee put forth his ingeolous but strangely inexact theory that an insect, the Aphis vastator, was the cause of the Potato disease, and which was about as true as it would be were I to say that earthworms are the cause of the Hotato disease, and which was about as true as it would be were I to say that earthworms are the cause of earthquakes. Nothing in the diagnosis of diseases of all kinds seems to be easier than the mistaking of effect for cause. An old and respectable authority on canker has said that in trees it is allied to ulcerous diseases in man and animals, and arises chiefly from a plethora of crude or unhealthy sap. That may be so or not, but it is certain that very many practical gardeners have attributed canker to that particular cause, produced by the roots getting into soil that was sour or unfit to sustain plant life in a healthy condition. But a few winters since, when the intense boar frosts wrought such havoc amongst our hardy fruit trees, killing whole ones here, and half killing others there, and disseminating canker in all directions, there came a conviction that, after all, cold was the primary cause of the old affection, but that, owing to attributing it to other causes, the right one had been overlooked. That insects produce this diseminating candler in all directions, there came a conviction that, after all, cold was the primary cause of the old affection, but that, owing to attributing it to other causes, the right one had been overlooked. That insects produce this disemption of the cellular tissue of the bark and it is far more probable that the injuries are caused by some disruption of the cellular tissue of the bark by sudden changes of temperature or sharp frosts, or, by suden changes of temperature or sharp frosts, or, after all, it may be that crude immature sap has formed tree ulcers that, having burst, have produced that which we term canker. Z. [Until the matter has been thoroughly investigated from the very beginning, through all its stages, by some competent microscopist, it appears to us that all conjectures are more or less vain. Ed.]

Mildness of the Season in South Wilts. The least observant person who happens to live in the country far away from the noise, bustle, and turmoil of a town life can hardly fail to notice at the present time the advanced state of outdoor vegetation present time the advanced state of outdoor vegetation and of other signs affording evidence of the unusual and abnormal character of the season. Fruit trees are fast swelling their buds, and some kinds, notably Apricots, Peaches, Nectarines, and Pears bid soon to show us the nature and colour of their soon to show us the nature and colour of their petals if the weather continnes in its uninterrupted course much longer; whilst Rose trees and a few other subjects have already young shoots I inch or more in length. Of early spring flowers there is quite a wealth, The undermentioned flowers are to be met with in this locality at the time of writing, many of which are, comparatively speaking, plentiful, viz:—Violetts, Primroses, Polyantus, Snowdrops, Crocus, Ficaria verna, Hepaticas, Helleborus, Wallflowers, Arabis albida, Forget-ment, Isaminum mudiforum, Berberis amifolia, and Helleborus, Wallflowers, Arabis albida, Forget-menot, Jasminum undiflorum, Berberis aquifolia, and Laurustinus. Amongst other signs of the unusual character of the season are the notes of our feathered songsters, and to realise this to its fullest extent one has only to go through the woods and plantations at early dawn. Although one cannot refrain from admiring the joyous songs of these harbingers of spring and the abundance of early flowers, it is perhaps as well to remind the unwary of the fact that there is plenty of time between this and the end of next month for severe weather, and he would do well next month for severe weather, and he would do well not to be over-naxious with regard to planting and seed sowing, but to be on the alert, and fully prepared for any emergency by being able to afford protection whenever it becomes necessary to all such things as require it. J. Horsefield, Heytesbury, Feb. 2.

Flowers In and Out of Season .- Not only do we hear of various kinds of birds nesting and mistaking the season through the mildress of the weather, but many plants are flowering long before their usual time, and to-day (Jan. 24) quite a nosegay might be gathered by taking a short walk outdoors in the garden, where I noted the following:—First, and most welcome, was the Honeysneckle (Lonicera fragrantissima), which, growing on a pier at the end of a southest wall, is quite covered with fresh pure blossoms, so sweet as to perfume the air with their odonr. Near by, occupying the same kind of position, are two plants of Garrya elliptica robed with their elegant drapery of long flowing catkins, which, seen drooping and dangling in the wind, with the dark foliage behind, have a most striking and pleasing effect. On the same wall a bloom of the fine old Magnolia grandiflora has been struggling to open, but in the absence of sum it has had a hard task, and now looks as if it can get no further, so tight and close are the folds of do we hear of various kinds of birds nesting and mis-

its petals. Standing close by M. purpurea is fast swelling its buds, which it usually forms in great quantities, and is one of the first harbingers of spring, as it is always early in unfolding its blossoms. Another plant that seldom fails to reward one for a search at this season is the Chimonanthus fragrans, search at this season is the Chimonanthus fragrans, the flowers of which we have had for some time, and which, though dull in appearance, have a delicious perfume that make them in high favour with all. While on sweet-scented flowers, I must not forget to mention the Tussilago, spikes of which I have just gathered standing up quite naked ont of the ground, where, with their big heads of bloom, they looked very forlorn and conspicuous, and I felt I could easily forgive myself breaking them off and bringing them indoors, where they are rewarding me now with their fragrance, which is almost could to some the same they are rewarding me bringing them indoors, where they are rewarding me now with their fragrance, which is almost equal to that of the Heliotrope; and with this to recommend them the wonder is that the Coltsfoot is not more grown for cutting from, especially as it will succeed almost anywhere in light soil where its roots can get a free run. Jasminum nudiflorum quite forces itself on every one's attention this year, as never before perhaps has it been seen in such beauty, for every shoot is full of its rich yellow bloom, and this without spot or blemish, thanks to the weather, which has all along been in its favour. The way I have witnessed this Jasminum looking best is on tall blocks of wood, round which the plants were tiged to lead them up. this Jasminum looking best is on tall blocks of wood, round which the plants were tied to lead them up, and then left to themselves to grow at their will. The effect of their slender branches drooping down in their own natural manner is charming. Plants also look well trained loosely to wires against a red brick wall, which colour as a background shows up the flowers to the greatest advantage. Lithospermum prostratum is another plant that no one can pass by without stopping to admire the lovely little blooms, so rich and intense are they in the great depth of their blue, and I could gather many sprigs of them to-day that would have given quite a finishing touch to any bouquet. Soon the plants, one of which covers over a yard of ground, will be a mass, and vie with the Gentians, now fast pushing their buds, and with one or two just ready to open, but waiting for sun, which the Gentian must have, or but waiting for sun, which the Gentian must have, or it hides its beauty all the day long. Winter Aconites seem quite indifferent about solar rays, as they are seem quite indifferent about solar rays, as they are through the earth, and make the borders here and there ablaze with the glow of their yellow, but, unfortunately, they do not last long, as, being so near the ground, the blossoms get bespattered by the first heavy rain, and are made shabby at once. Forming a fine contrast with the Aconties, the Scilla sibirica is now coming on, but where it looks best is near Snowdrops, as the pure white of these makes the blue of the Squills appear richer than ever. Hitherto I have made no special note of the time of blooming of Snowdrops, but if my memory serves me, they must be at least a month before their usual season, as with us, clumps are fully in bloom, and Primroses are now be at less a month before the issual season, as with its, clumps are fully in bloom, and Primroses are now becoming quite gay, and making a nice show in some beds. Red and white Daisies surrounding them are also looking bright, as they, too, have a few flowers, and the lovely Myosotis disstititions is trying its best to be in with them too but its bloomer. and the lovely Myosotis, dissilifora is trying its best to be in with them too, but its blossoms at present have a pink hue. Stocks have never ceased flowering, and plenty of them might now be cut, as also Anemone coronaria, a bed or border of which everyone who has a garden should sow, as plants are most valuable for cutting from, for when raised early they yield a supply of flowers nearly the whole of the winter, and come in admirably for dressing with the Christmas Rose, with which they associate well. Violets are fast peeping out of their foliage, and will soon be in great abundance, especially The Czar, which has been yielding a few blooms for the Last month, and the old Russian longer than that. Some perpetual Carnations standing out have a few they can be compared thousers, and Berberis nepalensis and Datwinii are quite gay, the first-named having every shoot terminal with great clusters of blossoms. J. Sheppard, Suffolk. 7. Sheppard, Suffolk.

Petunias.—At one time much trouble was taken in saving plants to propagate by cuttings, and very few varieties were then grown, the greatest favourite as a bedder being Countess of Ellesmere, which had neat, small flowers of a deep rose colour that looked very rich in masses and stood the weather well. Fine as the above-named and a few others were, they are now far surpassed by new strains of a totally different character, the finest and most note worthy perhaps being those of the grandiflora section, which commisses several kinds all modulous blooms worthy pernaps being those of the granditions section, which comprises several kinds, all producing blooms remarkable for their size and splendid markings, some being beautifully striped and others fringed, and the whole particularly striking and showy. For large beds these Petunias are very valuable, but I think they look best in borders, and the way to grow them there is to plant one or more in a patch, and surround in the production of the plant one or more in a patch, and surround in the production of the plant one or more in a patch, and surround in the production of the plant one or more in a patch, and surround in the production of the plant one or more in a patch, and surround in the plant one or more in a patch, and surround in the plant of the plant one or more in a patch, and surround in the plant of t it with a piece of 18-inch wide coarse-meshed wire netting, through which the branches of the plants push and find the support they need; and after a time the wire becomes hidden and clothed with gay blos-

soms. This mode of growing them is far easier than going to the trouble of staking and tying, which cannot be done without the expenditure of much time, and even then there is always a want of ease and stiffness about the plants that they never have with the netting. To get these Petuoias strong and fit for turning out in May, seeds cannot well be sown too soon, and this should be done in heat, where we or them to entire the result of the strong than the control of the strong than the st where, to get them to germinate freely, it is necessary to cover the surface of the pan or pot containing them with a pane of glass, which keeps the soil uniform as to moisture, and saves watering and its attendant risks of getting over-wet, and thus rotting the seeds. As soon as these are no through the soil. its attendant risks of getting over-wet, and thus rotting the seeds. As soon as these are up through the soil, the pans should be placed on a light shelf in a warm house to prevent drawing, and when the plants become large enough to handle it is important that they be at once pricked off, and after a time potted singly so as to be ready for planting. Besides the magnifiscent single kindsof Petunia grandiflora, double varieties may be raised in the same way, as seeds are supplied from fertilised flowers, and plants obtained from them are charming for pots to furnish greenhouses or conservatories, where they make a grand show. To have them bloom freely without being drawn they must be grown in light sunny pits or houses, where they ear grown in light sunny pits or houses, where they can have plenty of air, under which treatment the shoots come short jointed and strong. After May it is a good plan to plunge the plants outdoors, and to draw from them there when wanted for use. J. S.

Saxifraga Burseriana major, so faithfully illustrated at p. 141, is one of the most beautiful of Saxifrages. It has just gone out of flower on our rockers when the flowers, even in such dull, drizzly weather as we have lately had, lasting two weeks in beautiful. The single form of the common Snowdrop is, I think, if one may venture to make comparisons, the most beautiful of all in its simple beauty, if we except Mr. Elwes' variety, Galanthus Elwesi. The foliage of this species is so distinct, and the flowers, which are larger than those of the common Snowdrop, droop so elegantly; it is also the earliest to flower. G. plicatus, G. Imperati, and G. Redoutei, are all well advanced to flower, though more of the blooms are quite open. The early flowering Snowflake (Leuccjum vernum) is also in flower in the borders, while a plant of Lithospermum prostratum has ventured to put forth a few of its deep blue flowers over a ledge put forth a few of its deep blue flowers over a ledge of rock. Pansies and Primroses are plentifully in flower. J. Douglas.

What is the Result of Premature Growth in Potato Seed or Sets? — For farm or garden there is no other vegetable of equal importance, nor one in which so many are interested. A discussion as to how a crop was secured of first-rate quality and perfectly free from disease last year is only second in interest as to how the same thing is to be secured in 1884. I propose to make a few observations on the interest as to now the same thing is to be secured in 1884. I propose to make a few observations on the first point, and then to ask the attention of your readers to the second, especially in its bearing on the above query. Our Potato crop was divided between the farm, large vegetable garden, and as small experimental vegetable garden, intended principally for comparative purposes. Sown in the end of February, with a good warm loam, stable manner, and ashes, and southern aspect, the old Ashleaf Kidoey was fit for use when of the size of small hens' eggs, without any protection, on June 8 following. Of thirty varieties, in quality it is the best and the earliest—Myatt's I am referring to, but I am not aware of the distinction between this and those sold as Veitch's, Rivers', &c., Ashleaf Kidney. The next to ripen was Carter's Eight Weeks, the earliest of all the round varieties, and with curiously marbled foliage. Neither is anything like so prolific as Carter's First Crop. A gardening friend tried to persuade me that this was a selection from the old Ashleaf Kidney, but the quality, productiveness, and time of Carter's First Crop. A gardening friend tried to persuade me that this was a selection from the old Ashleaf Kidney, but the quality, productiveness, and time of ripening are all different, and, except the last, in favour of First Crop. Cosmopolitan did not ripen as soon as I expected, and when better known I am not sure if Mr. Dean will not be satisfied to class it as a pro-lific second early. I did not purpose going into details as to varieties at present further than to say that Paterson's Victoria and Schoolmaster are here rather subject to blight, even more so than old Fortyfold, as second earlies I give the palm to Beauty of Hebron. I feel inclined to bracket with it White Elephant, but it is decidedly a general or late crop variety, sown at the same time. Both are very beavy croppers, of tolerably good quality and almost free from blight. But for the general farm and, I may add, garden crop—whether you take productiveness, freedom from disease, but especially quality — commend me to the Champion (Scotch). Some few years ago I wrote of his variety in those terms in a contemporary, and a correspondent poked fun at the "mere Irishman" who spoke so strongly of a Potato "with a stone in the heart of it." Since then I hope his opinions are changed—mine are not; and last year I ordered 5,30 worth of fresh seed, for change, from Forfarshire, and have found the following results in addition. The crop was heavy, new lea land, and of the several tons produce, sorted under my supervision, I am perfectly satisfied there is not up to the present I stone rotten, while the quality simply leaves nothing to be desired. Mr. Taylor has long since stated this variety is preferred at the table of the Marquis of Bath, and in a recent issue of a contemporary Mr. Gilbert, of Burghley, steps aside to give the Champion a preference. Later in the season, to my mind, they must give way in quality to the Magnum Bonum. So much for past experience, which will have an interest just now, and perhaps induce others more competent to state theirs; but if we are to have equal success this year the above query is of vital importance. I have Potatos in pits, in houses, on dry shelves, &c., and in every instance they are exhausting themselves at a rapid rate by growing. Those in the houses, that have already been turned three times, to-day I find with stalks half a dozen inches long. I have reason to know that this is general over Ireland, and you may be able to speak for England. The mild winter and moist weather supply the explanation, but the material point is how this will affect the future growth—whether the central bud can any further be depended on—and whether, if not, in case Potatos intended for seed have much grown, it would be safer not to cut the set? I need not specifically draw attention to the vast importance to millions of this matter. W. T.

ORCHID CULTIVATION FOR AMATEURS.—V.

I HAVE said that our methods of ventilating planthouses are generally of too crude a kind, and for epiphytal Orchids or "air plants," more especially, we ought to have the most perfect system of ventila tion possible. I have thought sometimes of the funnels or tube-ven'ilators used on board ship, by means of which vitiated air is drawn up from the cabins below; also of a tube or a narrow strip of perforated zinc fixed all along the ridge of the house, which would allow of the heated air passing slowly away. But apart altogether from the ordinary ingress and egress of air I am greatly in favour of houses which are unequally heated, whether at the sides or each end does not so much matter, as in all houses or compartments so heated there is always an internal circulation, the warmest air continually flowing towards the coolest part of the house. Orchid-houses are en suite, and particularly when built in a straight line and so joined end to end, there should, I think, be perforated ventilators over the doors, so that a current of air may pass from one compartment to the other. In this way, no matter whether the outer ventilators are open or not, there will always be a circulation of air inside the houses, and this is of course a great benefit to the plants.

Not very long ago a gentleman complained to me that his "cool Orchids" did not thrive well. "Oh l well, perhaps you keep them too warm?" "No, the thermometer is olten as low as 40° first thing in morning." "And are the plants covered with dew at the same time, or are the leaves and the floors quite dry?" I asked. He could not say, "but, would I go and see the plants for myself?" I did so, and found out that although his Odontoglossums and Masdevallias were cool enough, they were grown in an atmosphere too dry for them, and especially so at night. Even when syringed at night the leaves were dry by morning. The house was overheated, and to lower the temperature air was freely admitted from without. It took some time and trouble to find out exactly how things were, but at last we succeeded, and by placing valves in the pipes as they entered the cool-house we checked the heat, much less air was admitted from outside (I ought to have said the house -a lean-to-stood in a very exposed or windy position), and then ventilators were broken through the back wall into a warm plant-stove, and covered with perforated zinc slides. The result exceeded our expectations. But very little fire-heat is now used for the cool-house, as a good deal of heated air comes into it from the stove; and the greatest gain of all is this moisture-laden air, which condenses as it disperses itself into the cool atmosphere; and the result is, that first thing in the morning every leaf is covered with dew just as occurs in Nature on the mountains of the tropics.

An old collector of Odontoglots and Masdevallias long ago told me that the warm moisture from the plains or from the sea comes up every night, and condenses in the cool atmosphere of Bogota, so that every morning a white mist hangs over everything until it is dispersed by the sunshine. Early in the morning, as he told me, every leaf and blade of grass and moss was wet, not merely moist, but drenched by these heavy nightly dews. It is so on Table Mountain at the Cape, where the Disa grows wild. As a simple matter of lact, this state of things is found to exist on the warm mouotains of the world nearly everywhere, and the absence of the conditions resulting from this state of things may account in some measure for our failures in the culture of many mountains plants from the tropics and temperate regions alike.

No doubt we have many plants which fail to grow satisfactorily in our cool greenhouses, simply because this nightly mist or dew bath is absent from them. I believe this in the main is the reason why Nepenthes Rajah puzzles nearly all our best cultivators, at any rate I can vouch for the fact, that at the altitude of from 5000-10,000 feet (that is, in the Nepenthes on Kina Balu, North Borneo, this plant, together with its congeners, enjoys several hours of rain nearly every afternoon, and there are always very heavy dews which fall at night. No doubt the same is true on the Andes and on the Himalayas, indeed on all the mountains of the world. I believe the above plan of partially heating, and nearly entirely ventilating a cool house from a much warmer one will give us the most perfect of all atmospheres in which to grow mountain Orchids. This principle was long ago adopted by Messrs, Backhouse at York, their cool Filmy Fern-cave being (at least it was) in communication with a heated structure, so as to insure a nightly, if not a daily, dew-bath for the delicate

This question brings me to another contested point in Orchid culture, namely, the syringing of Orchids. Some Orchids enjoy syringing overhead, indeed some of the thin-leaved Dendrobiums of the D. Falconeri and D. Devonianum type can rarely be well grown without coostant syringing, so also of Cyptiediums, Ceologynes and Pleiones, Disas, and most "cool Orchids" of the Odontoglossum and Masdevallia type. In moist houses I know that the latter can be grown—well grown—without syringing, but in dry ones not so successfully. I should never syringe Cattleyas or Lelias, in fact, no very hard-leaved pseudobulbous Orchids of any kind. Vandas, Aerides, Saccolabiums, and even Phalænopsis and Annestochilus, are greatly refreshed by a light "skiff" with a fine rosed syringe after a blazing hot summer's day, especially if grown in large or in dry and airy with a fine rosed syringe after a blazing hot summer's day, especially if grown in large or in dry and airy houses. In such houses syringing is a necessity, if the lower leaves of Vandas, Aerides, Angræcums, &c., are to be retained. In a state of Nature all Orchids are more or less drenched with rains during their annual season of growth, and it is worth notice that the bulk of tropical rainfall is at night; after the very hottest of days there are sure to be nightly showers. If pleoty of air be left on, nightly syringings after hot days during summer would greatly benefit all Orchids, if we except Cattleyas and Ledias, It is, as we have said, of especial service to those thin-leaved kinds which have no pseudobulbs. At the same time amateurs must be extremely cautions in syringing their plants. The syringe is like a rife, or a good horse—most useful to those who understand their usage best; and so in good hands the syrings becomes a garden implement of the greatest service. F. W. B.

NOTES ON VEGETABLES.

NEVER before at this season of the year do I remember to have seen green vegetables so abundant and good; as not only are Brussels Sprouts and all Kales full of growth, but what should have been spring Cabbage are fast turning in, and Broccoli, such as Veitch's Winter, Backhouse's, Snow's, and Osborne's, are now fit for use, and all other kinds are looking as well as at any time during the autumn. As we can hardly expect to escape frost altogether, it will be necessary to be on the alert now, as in their present tender state such things as the last named will soon suffer, especially those with heads showing, plants of which should be laid in, moderately close, in some sheltered spot where they can be readily protected by scattering some long loose straw over them, the shelter of which will not only ward off frost, but preserve them against cutting winds, the effects of which are often fatal to vegetation during the mouths of February and March, when the sap is sometimes dried quite out of the leaves. With the later sorts of Broccoli it is as well to run the risk of losing some by letting them stand, for were they laid in now the check would be so great that the heads would be small, as the plants would have no time to root, and frost and drying wind passing over them in that unprepared condition would be sure to tell severely upon them. Much value has hitherto been attached to the London Colewort, but with us Wheeler's Imperial Cabbage is far superior; as, sown and planted about the same it hearts in with the first named, and is larger closer, and much more delicately flavoured. Besides being so serviceable during the autumn and winter, this splendid little Cabbage is the best I know or planting to cut first in the spring, for which pur-pose it stands in high esteem in the West of England. where it was raised many years ago by Mr. Wheeler, of Warminster, whose name it so worthily bears, and those who have not grown it will do well to make its acquaintance by obtaining and sowing a packet of seed. If this is done in gentle heat the heads will come in useful in May, and though small, they will be found delicious when cooked. Another vegetable we have found most serviceable is Gilbert's Chou de Burghley, which resembles a tall Sugar-loaf Cabbage, and which will, in my opinion, take the place of the old Savoy, which few will eat if they can get anything less strong and better. Chou de Burghley has all the merits of a Savoy by turning in during the autumn and winter, and none of its drawbacks; for, instead of being rank, Chou de Burghley is mild and delicious Of its capability of withstanding frost I in flavour. can say nothing, but if thoroughly hardy its reputation will then become entirely established. Unfortunately Couve Tronchuda has all its goodness taken out of it after being frozen, else it would be the best of all the Brassicas for this late season, as it most certainly is when Cauliflowers are over, when if it has been well and freely grown it is, after being cooked, as tender as marrow, and seems quite to melt in the mouth. to Cauliflowers, they are, like the farmer's Wheat during mild seasons, "proud," which proudness will result in their "bolting;" as, judging from present appearances of most plants, they are sure to button and be useless for cutting. This being so, it will be advisable to sow seed of some early sort at once, as plants raised now, and nursed on by pricking them out on a gently fermenting dung bed, will nearly catch up to any that stand through the winter; and they are often more satisfactory, as they afford close white beads that have no tendency to run or discolour. The Early London used to be considered the best for first cutting, but there are several now that are superior to that well known old variety, one that are superior to that went known one variety, one of the most desirable being Veitch's Extra Early Forciog, which, though small, is very compact both in the flower and habit, and so dwarf and upright that the plants may be grown much closer than any other kind. To form a succession, I should advise a sowing of both these Cauliflowers to be made together, and if the seed be placed in hoxes in heat it will soon be up, and the plants ready for pricking off in a frame, as mentioned above. At the same time it is quite worth while raising a few of Veitch's Giant, the merits of which as a summer Cauliflower are only known to the few, but when sown early, and got up strong, it stands dry hot weather better than any other I know. I found this out by sowing in the autumn, thinking to grow some for seed, and they came most acceptable in August, when we had no others to cut. 7. S.

NEW KINDS OF POTATOS .- The list of new kinds of Potatos given at p. 109 includes those only which took honours from the Royal Horticultural Society, but from the committee of the International Potato Show such fine kinds as Prince Munster, The Dean, Recorder, Lord Mayor, Edgcote Purple, have all received Certificates of Merit, and are therefore worthy of mention, being placed in commerce for the first time this winter. No doubt there are more kinds being offered for the first time just now than can be fully mentioned, but it is just possible that some highly meritorious kinds may be overlooked. It is most certain, as all who have had experience of the kinds put into commerce recently will admit, that few but what are first-rate are now sent out. I refer, of course, to English-raised kinds only, as few persons seem to care about new American sorts; indeed, the demand for them is comparatively nil-that is, at least, my experience. Of these I find only the most infinitesimal difference in quality as compared with such old kinds as Early Rose and Snowslake. But the other day I read a very eulogistic notice of Adirondack, but the best that can be said of its quality is, that it is hard and flavourless; yet I think this kind obtained a Firstclass Certificate from the Fruit Committee, Snow-

drop Kidney, spoken of at p. 108 as resembling Snowflake, certainly did present such characteristics at Chiswick last summer, but the stock of it I have from Mr. Perkins in quantity shows it to much more closely resemble a handsome sample of the old Dawes' Matchless Kidney than Snowflake, and its table quality is excellent. I think it will take a high place as a show kidney, and with Recorder, Wood-stock Kidney, Cosmopolitan, and Welford Park Seedling, help to displace inferior kinds. In a year or two there will he no kinds of indifferent-looking quality seen on our exhibition tables. A. D.

BRUSSELS SPROUTS .- Apart from the flavour of these vegetables, which is liked by most persons, there seems to be growing up in certain quarters a preference for them when they exceed the old recognised normal size, and not only so, but there is a kind of propagandism carried on by the believers in the big Sprouts to the detriment and decline in the quantity grown of the little ones. Gardeners are too gregarious in their ways of thought, and are always very apt to follow the lead of some man who has made a name in his profession by exhibiting with success at horticultural shows. Judges, again, are often impressed by mere bigness when that is accompanied with some preconceived notions as regards symmetry, and the awards made by judges of kitchen garden produce have doubtless helped to form the ideas prevalent about big Sprouts. Assuming that the flavour remains identical in all the kinds grown, we gain nothing whatever when the Sprouts are large, for if fewer are required to make a dish, the plants bear a smaller number than do those of the best imported sort, so that the balance of requirements versus quantity remains where it was before the introduction of the Aighurth, the Rosehery, and others. Most people will prefer the appearance of the little green nodules of the one to the less shapely, seemingly under-sized, small Cabbage-look of the other. And here we must allow the cook, to whom the matter really pertains, to give an opinion, and she will say that all vegetables of the Cabbage tribe must have the water-strongly flavoured we know it to he-drained or pressed from them. Now the water will not run sufficiently quick from the big Sprouts, so they are pressed to make them free of the water, and of course to the detriment of the form of the Sprout. With the hard small Sprouts there is much less lodgment for the water, and so draining them in a colander is all that is required. We cannot make Brussels Sprouts hardier, for they defy now all the severities of the usual English winter, and the improvement most desirable would be a longer stalk, with the rosettes set as thickly as they now are found on the best selected strains.

ROYAL HORTICULTURAL SOCIETY.

THE following is the report of the Council for 1883, to be presented to the Fellows at the annual meeting on Tuesday next :-

The Council congratulate the Fellows on the financial position of the Society, the revenue of the year having been sufficient to satisfy the debtor balance carried forward from the preceding one, and to give a considerable surplus after paying or providing for the payment of

every liability to December 31 last.

The Council regret that some of their Fellows should have felt aggrieved by the partial curtailment of their enjoyment of the gardens, which was necessitated by the holding of the Fisheries' Exhibition; but apart from the fact that this curtailment was unavoidable, the Council have the gratification of believing that the great majority of Fellows found ample compensation for any loss they suffered in this respect, in the large privileges which they enjoyed in connection with that Exhibition.

The Council have the pleasure of being able to announce that they have succeeded in arranging with the Executive Council of the International Health Exhibition that Fellows shall have in respect of this Exhibition the same privileges, except as to the opening ceremony, and six evenings which may be reserved, as they

enjoyed during the Fisheries Exhibition. The Council take this opportunity of recognising the spirit of friendly consideration for the interests of the Society which has been shown by the executive of each of these Exhibitions, and the liberality of the Council of the International Health Exhibition, which enables them to present to each former Debenture Holder of the Society a ticket, giving all a Fellow's privileges of admission, but not transferable, in addition to the privileges granted to him last year.

In the early summer an experiment was made in the form of two evening meetings, which the Linnean Society very kindly allowed to be held in their rooms at Burling-

On both occasions a lage number of valuable plants On both occasions a lage number of valuable plants were arranged in the library, including Orchids, sent by Sir Trevor Lawrence, Mr. Lee, Messrs, Veitch, and others; Rhododendrons by Mr. Mangles; herbacous and other plants by Miss Jekyll, Mr. Loder, Mr. G. Maw, Mr. T. Ware, Messrs. Barr, and others, as well as speciments from the Royal Gardens, Kew, and the Society's gardens at Chiswick. The company assembled in the library some time before the reading of the papers. in the library some time before the reading of the papers commenced, and showed very great interest in the examination of this collection of flowers. On both occasions the chair was taken by the President, Lord Aberdare, strongly supported by members of Council.

At the first meeting, on May 8, after some appropriate introductory remarks by the Chairman, Dr. M. Foster, F.R.S., gave an account of the Onocyclus groups of Irises, dwelling on the characters of their construction, their botanical affinities, their geographical distribution, and the proper method of culture. His remarks were illustrated by means of large diagrams, and with freshly cut blooms of Iris iberica, one of the best known of the group. A discussion followed in which Sir J. Hooker, Mr. H. J. Elwes, and Mr. J. G. Bakertook part. Mr. E.G. Loder then read a paper on hardy Cacti, giving an account of their affinities and distribution, and describing the method of culture which in his hands has proved so successful. Dr. Hogg followed with an account of some Australian Applies, recently imported, exhibiting specimens, and distributing them freely among the audience. The meeting was brought to a close by Dr. Foster briefly describing and exhibiting on behalf of Herr Max Leichtlin, several new plants recently flowered at Baden Baden.

At the following meeting, June 12, the reading of papers began by "Notes on Conilers," by Dr. Masters, F.R.S., in which the author drew attention to the mode of growth and to other physiological features of certain Pines and Firs. Mr. W. Goldring followed with a paper on "Cypripediums," admirably illustrated by a very large number of choice Cypripediums in bloom, kindly sent by various gentlemen. The author passed in review by various gentlemen. some of the leading types of the genus, as well as the striking hybrids recently produced, and an animated dis-cussion followed. Mr. G. Maw then gave an account of the genus Crocus (concerning which he, as is well known, is the highest authority), dwelling particularly on the light which a knowledge of the geographical distribution and babits of the various species and varieties may be made to throw upon the culture most likely to be

The experiment of these meetings may certainly be considered most encouraging. The audience was not only large, well filling the Linnean Society's meetingroom, but included, besides the gentlemen incidentally mentioned above, many distinguished horticulturists, and mentioned above, many distinguished.

Several Fellows of the Linnean Society. Great interest was shown both in the papers read and in the discussions which followed, while the opportunity afforded for examining and conversing about so many beautiful or rare plants helped to make the evenings very enjoyable, and repeated expressions were heard of the desire that more of such meetings might be held.

The gardens at Chiswick have been maintained in a high state of efficiency, the practical work of the Society being carried on as usual. Fellows and their friends visited these gardens in larger numbers than during past

The trials by the Fruit and Floral Committees com-The thats by the Fruit and Floral Committees com-prised respectively Peas (of which 154 samples were tried), Potatos in great variety, Lettuces, Tomatos grown in pots and in the open ground, and Celeries among vege-tables; and among flowers and plants, Pelargoniums, Verbenas, Sweet Peas, Begonias, single Dahlias, Tydæas, Gloxinias, and others.

It is proposed that trials shall be made during the

present year by the Fruit Committee of new varieties of Potatos and Peas, and of the entire class of Cauliflower and Broccoli, which is in great confusion; and by the Floral Committee of new Pelargoniums, Begonias of the Rex or bandsome foliaged type, Ferns of the Adiantum or Maidenhair class, and Chrysanthemums. Fellows of the Society and other cultivators of any of these plants, &c., are invited to contribute for this purpose. Facilities were afforded to the committees of the Pelar-

gonium Society and the International Potato Society for the trials of new varieties of the objects submitted to these bodies respectively for cultivation.

The success attending the novel experiment of the Apple Congress at Chiswick surpassed the most sanguine anticipations of the Council—such a display of different varieties, of which the Society's garden contri-buted 260, having never before been seen. About 10,000 persons visited the exhibition, which enabled the Fruit Committee to obtain much valuable information in connection with the fruit exhibited. A report embodying this information is being prepared for pub-

It is contemplated, should the season prove favour-

It is contemplated, should the reason prove favourable, to hold similar shows of other fruits.

The number of plants required for distribution to Fellows continues to increase. During the past year 19,470 plants in pots have been sent out, with 30,000 packets of seeds, and about 5000 cuttings of Vines and other fruit trees; the number of Fellows availing themselves of this privilege being 997. The cost of repairs during the past season shows some increase, the Great Vinery having had to be repaired and several plant pits renewed.

There were among the Fellows during the year 155 new elections, 147 resignations, and fifty-seven deaths, twenty-three of these deaths having been those of life Fellows.

Fellows. AUDIT,—The auditors' report that they have great pleasure in stating that the accounts are perfectly correct and satisfactory in every respect, the books being now kept in a clear and lucid manner, and reflect great credit on the officials of the Society. They offer their congratulations on the prosperous state of the affairs of the Society, the number of Fellows being nearly maintained when a serious falling off might have been auticipated in consequence of the great disturbance which took place in its affairs last year.

The Society for the first time for several years commences the current year with a surplus in hand after discharging all liabilities up to the end of 1883, and the auditors express a hope that it is now entering on a new era of prosperity. Jan. 30.

The Poultry Yard.

POULTRY EXPERIENCES .- My notes as to the product of my few hens in the matter of eggs during the past year, and published in these pages a few weeks having attracted considerable attention, I now ask permission to record the product in eggs of the same number of hens, viz., nineteen, for the month of January just past. I am quite aware that my hens show no egg-producing capacities of a phenomenal kind as far as the average season is concerned; their good features are found in their continuous winter laying, in giving us an abundant supply of good eggs during that time of the year when eggs are invariably scarce. That winter-laying characteristic is not due to any accidental circumstances, but, as I believe, entirely to the fact that the kind of which I have, about two-thirds in number are white Leghorns-a breed that well merits to be placed in the front rank of layers at any time, but specially of winter layers. Again we find throughout the whole of January not a single day without eggs, and the entire product was 169 as against 145 in January last year; but something is perhaps due to the remarkable mildness of the past month. Should any readers be disposed to hold that the abundant egg-producing is chiefly due to the mildness of the winter, I would again point out that in all directions I hear complaints from other poultry keepers, that they, with even more fowls, get few or no eggs whatever; indeed the prices paid for eggs-2d. and 3d. each-tell of comparative scarcity. One town poultry keeper complains, that with a fair run and ample feeding of grain in variety, yet his hens do but give him at the rate of ninety eggs per hen per year, whilst mine for last year gave about 120. Prohably having regard to the diverse conditions under which town and country fowls exist, his average is very fair; still I think much is due to breed. Hens that are rarely broody, and are neither coarse nor fleshy, are usually heavy layers. It is breeds that display these features which poultry keepers should have if they want eggs. Of course, with such qualities there must be also an easy adaptability to food and run, and fair hardiness of constitution. All these things I think the Leg-horns show in a marked degree. Their productive-ness and good-sized eggs, of high quality too, are

It would be interesting to learn whether other poultry keepers in a small way can with such fancy kinds as Laogshans or Minorcas, or even with Spanish or Hamburghs, show better winter returns. It may be well worthy the consideration of poultry societies to ascertain how far their shows are tending to promote the production of eggs in this country, as well as handsome breeds. Big birds and fine feathers are not the requirements in poultry, and most persons will agree that if good eggs and plenty are produced, and specially so in the winter, the colour or breed of fowls is of little consequence. We have recently had fowls is of little consequence. a high authority advising the larger production of poultry and eggs, and the advice is good. Novices, however, will ask what are the best breeds for our purpose, and in the hope of aiding them in their enquiries I have penned these homely experiences.

Chanticleer.

The Meather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON,

FOR THE WEEK ENDING WEDNESDAY, FEBRUARY 6, 1884.											
DAY.	BAROS	eter.	т	°ЕМР Т	ERAT HE A	URE LIR.	OF	Wind,	1		
MONTH AND DAY.	Mean Reading Reduced to 32" Fahr.	Departure from Average of 18 years.	Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 50 years.	Dew Point.	Degree of Humidity. Sat. = 100.	Average Direction.	RAINFALL
Jan.	In.	In.									In.
31 Feb.	29 55	-0.22	50.5	43 • 5	7.0	47 -9	+ 9.4	46.7	95	s.w.	0.13
1	29.27	- o so	50.3	43 5	6 8	45.9	+ 7.3	42.9	93	S.	0.24
2	29 87	+0,11	45.5	34 5	11.0	38.8	+ 0.1	36.0	93	N.	0.00
3	30.27	+0.50	41,2	29.0	12.2	36 o	→ 2.8	32.2	86 {	W.: S.W.	0.00
4	30.26	+0.50	49.S	39.5	10.0	45-3	+ 6.4	42.1	83	w.	0.00
S	30.21	+0.44	48.5	42.2	6.3	45 S	+ 6.5	42.0	88	w.	0.00
6	30.07	+0.31	45 S	37.5	8 0	41.4	+ 2.3	37.3	87	s.w.	0.00
Mean	29.93	+0.16	47.3	38.5	8.8	43.0	+ 4.3	39 9	89 {	W.: S.W.	0.37

Jan 3t.—Dull raioy day and night.
Feb. r.—Fine morning. Heavy raio from t P.M. to 2.45 P.M.

2.—Fine day and night.

3.—Fice bright morning. Suo shining till noon.
Oversat afterwards. The maximum temperature of this day took place at midnight.

4.—Fice day and night; overcast.

5.—Dull day and night;

6.—Dull day; overcast. Fine night; clear sky.

LONDON: Almospheric Pressure.—During the week ending February 2, the reading of the barometer at the level of the sea increased from 28.71 inches at the the jevel of the sea increased from 28.71 inches at the beginning of the week to 29.91 inches by midnight on the 28th, decreased to 29.77 inches by 9. A.M. and increased to 29.85 inches by midnight on the 29th, increased to 30.03 inches by midnight on the same day, decreased to 29.39 inches by midnight on February 1, and was 30.33 inches by the end of the meable. week.

The mean reading of the barometer for the week

at the level of the sea was 29.70 inches, being 0.18 inch lower than last week, and 0.25 inch below the average of the week.

average of the week.

Temperature. — The highest temperature in the shade in the week was 54°.5, on January 30; the highest reached on the 27th was 41°.5. The mean of seven high day temperatures was 48°.6.

The lowest temperature was 32°.5, on January 28; on the 30th he lowest temperature was 45°.1. The mean of the seven low eight temperatures was 38°.5.

The greatest range of temperature in one day was 1°.1, on the 29th; the smallest was 6°.8, on ebruary 1. The mean of the seven daily ranges February 1. was 10°.1.

The mean temperatures were-on January 27th, 37.2; on the 28th, 38.8; on the 29th, 47.7; on the 30th, 49.5; on the 31th, 47.9; on February 1, 45.9; and on the 24, 38.8; and these were all above their averages (excepting January 27, which was 0.9 below) by 0.6, 9.4, 11.1, 9.4, 7.3, and

0°.1 respectively.

The mean temperature was 43°.7, being 1° lower than last week, and 5°.3 above the average of the weck

The highest reading of a thermometer with blackened bulb in vacuo placed in the full rays of the sun was 84°.5, on January 29. The mean of the

sun was 54.5, on January 29. The mean of the seven readings was 73.2. The lowest reading of a thermometer with its bulb placed on grass was 26, on January 28. The mean of the seven readings was 32.1.

Rain.—Rain fell on four days, to the amount of 0.72 inch.

ENGLAND : Temperature .- During the week ending February 2 the highest temperatures were 56°.2 at Cambridge, 55° at Truto, 54°.5 at Blackheath; the highest at Sunderland and Preston was 50°, and at Brighton and Bradford 51.° The general mean was 53°

was 53°.

The lowest temperatures in the week were 28°.8 at Wolverhampton, 30° at Leeds, 30°.1 at Bolton; the lowest at Freston was 35°, at Plymouth 34°.8, and at Turro 34°. The general mean was 32°.1.

The greatest ranges were 24°.2 at Cambridge and Wolverhampton, 24° at Leeds; the smallest ranges were 15° at Preston, 18° at Brighton, and 18°.9 at Plymouth. The general mean was 20°.9.

The mean of the seven high day temperatures was highest at Truro, 51°.4, at Plymouth 50°.7, at Cambridge 10°.7, at C

bridge 49°.r.; and was lowest at Bolton and Sunderland, 44°.2, and at Hull 45°.2. The general mean was 47°.2.

The mean of the seven low night temperatures was highest at Turto, 41°.3, at Plymouth 46°.1, at Brighton 38°.7; and was lowest at Wolverhampton, 33°.7, at Bolton 34°.4, and at Sunderland 34°.5. The general mean was 37°.

The mean daily range of temperature was greatest at Wolverhampton and Nottingham, 12°.9, at Sheffield 10°.8; and was least at Preston, 7°.7, at Brighton and Liverpool 9°.1. The general mean was 10°.2.

The mean temperature was highest at Truro, 46°.1, at Plymouth 45°.6, at Blackheath 43°.7; and was lowest at Bolton, 30°. at Sunderland 30°.1, and at Wolverhampton and Hull 39°.8. The general mean was 41°.8. was 41°.8.

Rain.—The largest fall was 2.80 inches at Bradford, 2.49 inches at Leeds, 2.23 inches at Brad-ford, 2.49 inches at Leeds, 2.23 inches at Bristol; the smallest fall was 0.49 inch at Cambridge, 0.72 inch at Blackheath, and 1.01 inch at Wolverhampton. The general mean fall was 1.58 inch. Rain fell on six or seven days in the week at nearly every station.

SCOTLAND: Temperature.- During the week end-

SCOTLAND: Timperature.—During the week ending February 2, the highest temperature was 48°.7, at Edinburgh; at Dundee the highest was 42°.1. The general mean was 45°. The lowest temperature in the week was 27°, at Perth; at Glasgow the lowest temperature was 30°. The general mean was 28°.5. The mean temperature was highest at Glasgow, 30°.8.; and lowest at Perth, 35°. The general mean was 36°.7. Kain.—The largest fall was 2.76 inches, at at Glasgow; 2.75 inches at Paisley; and the smallest fall was 0.56 inch, at Perth, and 0.75 inch at Dundee. The general mean fall was 1.60 inch.

[JAMES GLAISHER, F.R.S.

Enquiries.

"He that questioneth much shall learn much."-BACON.

TREES BLOWN DOWN.—Cau any one tell me how long timber trees of Larch, Scotch Fir, and Spruce Fir, blown down, but having some hold of the ground, will lie without suffering in value? H. IV. M.

Answers to Correspondents.

APPLES IMPORTED: G. C. Eaton. The number of bushels imported in 1882 was 2,386,805, but we have no means of knowing how many came from America, or how many from the Contineat.

Books: D. M'V. Greenhouse Management for Amateurs (Bazaar Office, 170, Strand, W.C.).—IV. W. Bentham's British Flora (Reeve & Co.).

CAMELLIA SPORT: R. Sawford. Your sport from Jenny Lind is a very fine variety, but it bears such a strong resemblance to a pale flower of an old variety called Saccoi nova that we should hesitate to say it is distinct.

CEANOTHUS: A Reader. Gloire de Versailles is a seed-ling variety of C. azureus, and is of a darker shade of

CELERY WHITE PLUME (see p. 155): Messrs. Waite-Nash, Huggins & Co., 79, Southwark Street, S.E., inform us that they have imported seeds of this variety from New York.

CHRYSANTHEMUMS: S. Cairnbeul, We cannot name the variety; and without knowing something of your method of cultivation, it would not be advisable to recommend it for late flowering.—G. 3. W. Very good in quality for so late in the season. We do not recognise it.

CINERARIAS: A. F. Skinner. A fair average sample; by no means first-class.

CROCUS IMPERATI: E. T. It was named C. Imperati by Prof. Tenore in honour of an old Italian botanist— Imperato.

CYPRIPEDIUM INSIGNE: D. Inglis. We have seen similar leafy sheaths on single-flowered stems, but not on a double one before. The variety is a very nice

EUCHARIS DISEASE: Nemo. The disease on Eucharis is noticed in our number for July 28, 1883, and attributed there to a fungus. Your specimens seem in a better condition than those before received, and shall be fully examined shortly. M. Y. D.

FOLIAGE FOR BOUQUETS: Florist. We think you would do best by growing a bed of secuted-leaved Pelargoniums. If we understand your question rightly, there are no annuals that will stand fresh long enough after being cut to answer your purpose.

HELLEBORUS: Cor. The species were described in our columns by Mr. Baker in 1877, vol. vii., pp. 432, 464; the garden varieties (other than those of niger) by Mr. Moore in 1879, p. 431.

NAMES OF FRUIT: Camjee. Apple: Warner's King.
—Skinner & Son. Most closely resembles Striped Beefing.

NAMES OF PLANTS: W. Baxter. Tropæolum brachy-

ceras.—W. Z. 3. Sparmannia africana. We have no means of identifying garden varieties of Camellias.—Y. Smith. Seedling warteries, apparently, which we cannot identify.—K. P. 1, Send a better specimen; 2, Euonymus fimbriatus; 3, Euonymus sp.; 4, not recognised; 5, Iasninum heterophyllum?—IV. P. 6-5. A variety of Odontoglosum Wilckeaum.—H. M. H. A good and well known form of Ceoloxyne cristata.—H. Y. Ros. Ceologyne flaccidia. The Fern is probably Adiantum cubense, but we are not yet quite satisfied with this identification.—IV. IV. Nephrodium molle, and Cypripedium venustum, a good variety. variety.

NITRATE OF SODA: W. & 7. B. We should certainly not use it as a substitute for ordinary liquid manure to apply to soft-wooded plants. Its proper use is as a dressing to Grass or other green crops.

ODONTOGLOSSUM ROSSI MAJUS: G. P. No. 1 nearly approaches Rossi majus rubescens; 2 is very like a variety in Mr. Lee's collection under the name of Rossi majus pallens; 3 is an ordinary form of Rossi majus.

ORCHID SEEDS: X. They are of no commercial value, for the simple reason that they may be simply seeds in appearance, having no germinating power. There is nothing more deceptive.

ROSES FOR EXHIBITION: O. B. The Rose Garden, by William Paul (Kent & Co.); A Book About Roses, by the Rev. Canon Hole (Blackwood). If you want one cheaper than these, Roses and their Culture, by W. D. Prior (Routledge).

Prior (Routledge).

SEASIDE SHRUBS, Robt. Ellis. The following will grow well in your locality, if they can only be slightly protected from the prevailing sea winds: — Arbutus Unedo, Philiprea angustiolia, Ceanothus, any variety; Daphne Laureola, D. Mezereum, Garrya elliptica, species of Fuchsia, Levessteria formosa, Buddleia globosa, Pyrus japonica in variety, Rhamuus frangula, Myrltes in variety, Rose, Escallonia in variety, Goes single and double, Embothrium coccineum, Tamarisk germanica, Weigela of sorts, Camellias, especially the single varieties. Do not plant any large-leaved plants; either deciduous or evergreen, for nobvious planted should sheltering hedge that should first be planted should sheltering hedge that should first be planted should sheltering hedge that should first be planted should should shelter has followed the sheltering hedge that should first be planted should should shelter has compared to the shelter has got established the other plants can be put in.

PARING TREES: Old Subscriber. If the trees are young there is little doubt but that it will kill most of them, if not all, and seriously cripple the remainder, Aged trees, with old rough bark, do not suffer so much. A mixture of cowdung and soot, put on with a brush, would have answered your purpose, and would not have injured the trees.

TUFA STONE: 'J. Wallace. This can be obtained from Messrs. Joseph Ellis & Sons, East Street, Leicester.

Messrs. Joseph Ellis & Sons, Last Street, Leicuster.

VEGETABLES: J. E. Watton. Cauliflowers — Early
London, Walcheren, and Veitch's Autumn Giant, if
you cau afford to give it the room it requires. Lettuces
— Cabbage, Paris Market, Tom Thumb, All the Year
Round, Cos sorts, White Paris, Brown Bath (black
seeded). Turnips—Snowball, Early Munich, American
Strapleaf, Chirk Castle Black Stone. Peas—First of
All, Advancer, McLean's Best of All, G. F. Wilson,
Veitch's Perfection, Ne-plus-Ultra. Cabbage—Little
Pixie. Nonnareli. Wheeler's Imperial. Cocoa Nut. Pixie, Nonpareil, Wheeler's Imperial, Cocoa Nut.

VEGETATION ON A WALL: S. Mary Ormerod. It is the spawn of some fungus, such as is common in such situations, but which in its present state it is impos-sible to identify. Probably a Polyporus.

INTELLIGENT READERS, PLEASE NOTE: — Letters re-lating to ADVERTISEMENTS, or to the supply of the Paper, should be addressed to the Publisher, and NOT to the Editor.

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CATALOGUES RECEIVED.

THOS. S. WARE, Tottenbam, N.—Cboice Flower Seeds. W. LOVEL & SON, Driffield, Yorkshire — Strawberry Plants.
R. & J. FARQUHAR, 19, South Market Street, Boston, Mass.—Flower and Vegetable Seeds, etc., Warrington—Vegetable and Flower Seeds.
W. ETHERINGTON, Manor House, Swanscombe—Chrysanthermine.

santbemums C. POCOCK, Wincanton, Somerset - Garden and Farm

C. FOCUCK, Wincanton, Somerset — Garden and Farm Seeds. WILLIAM PAUL & SON, Crossflat Nurseries, Paisley— Florists' Flowers. GEORGE WHITE, Paisley — Florists' Flowers, Bedding Plants, &c.

WALTER FORD, Pamber, Basingstoke - Garden and

COMMUNICATIONS RECEIVED.—J. V. & Soo.—R. F. S.—T. E. C. B. F.—W. A. Meede, J. A.—Francis & Co.—T. W. W. Watson.—W. D. C. C. B. P.—Francis & Co.—T. W. Beradie, Ghot.—T. S., Newry.—J. H. K.—F. Anothe, Vienna.—Dr. Wakker, Amsterdam.—C. T. D.—W. Piercy.—A. Wells.—W. A. M.—R. G.—A. D.—J. R. J.

Markets.

COVENT GARDEN, February 7.

WE have no alteration to report this week, prices remaining the same. James Webber, Wholesale Apple Market.

	WHOLESALE PRICES.
s. d. s. d.	s. d. s. d.
Apples, ½-sieve 1 0- 5 0 Cobs, per 100 lb125 0	Pears, French, doz. 1 6- 9 o Pine-apples, Eng., lb. 1 6- 2 o — St. Michael's, each 2 o - 8 o

Vegetaeles.—Aver	AGE RETAIL PRICES.
s. d. s. d.	
Artichokes, Globe,	Herbs, per bunch o 2- o
per doz 3 0- 5 0	Horse Radish, bund, 3 0- 4
- Jerusalem bush. 4 o	Lettuces, Cabbage,
Asparagus, English,	per dozen 1 6
per 10012 0	Mint, green, bunch 1 o
- Buodle, small 5 o	Mushrooms, p. baskt. 1 0- 2
Beaos, French, lb I c	Onions, per bushel 4 0
Beet, per doz 1 o	- Spriog, per buo, o 6
Cabbages, per doz 1 0- 2 0	Parsley, per buoch o 4
Carrots, per bun o 4- o 6	Radishes, per doz 1 6
Cauliflowers, Eog-	Rhubarb, per bund, o 4- o
lish, dozen 2 0- 3 0	Salsafy, per bundle o 8
Celeriac, per root o 4- o 6	Seakale, per punnet 2 o
Celery, per buodle 1 6- 2 6	Small salading, pun, o 4
Cucumbers, each 1 0- 2 0	Spinach, per bushel 4 o
Endive, Eoglish, per	Sprue, French, buad. 1 6
dozea 1 o	Tomatos, per lh 2 6
Garlic, per lb o 6	Turnips, new, bun. o 4
POTATOS Keot Magnums, Sos	to 100s. per ton; do., Regent
835, to 1005.; Cha	mpions, 70s. to 80s.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.									
s. d. s. d. Aralia Sieboldi, doz.12 o-24 o Arbor-vitæ (goldeo), per dozen 6 o-18 o — (common), dozen 6 o-12 o Azaleas each 2 6-5 o	Ferns, io var., doze 4 0-18 0 Ficus elastica, each 1 6-7 0 Foliage Plaots, various, each 2 0-10 0 Hyacuths, per doz. 8 0-10 0								
Begonias, per doz 6 o-12 o Bouvardias, doz 12 o 18 o Cyclamen, per doz 12 c-30 o — Extra 91ze, each 5 o 10 o Dracæna term doz 12 o-24 o — viridis, per doz 12 o-24 o	Liy of the Val., pot 1 6-2 o Marguerite Daisy, per dozeo								
Epiphyllum, per doz. 18 o 30 o Erica, various, doz. 9 o-24 o Eucoymus, various, per dozen 9 o-18 o Evergreens, in var.,	Pelargooiums, scar- let, per dozen . 6 o 12 o Poinsettias, per doz. 9 o 18 o Primula, single, doz. 4 o 6 o Solauums, per dozen 8 o 15 o Tulips, per dozen . 6 o 9 o								

SEEDS

SEEDS.

London: Feb. 6.—The business passing in farm seeds is at present moderate. Of home-grown red Clover seed the supply continues good, but choice samples prove exceptional. The American and Continental markets keep steady, but, meantime, the English demand is quiet. The stocks, however, all round now held in London are, for the time of year, unusually light. There is no change in either Aiske, white, or Trefoil. Imported Italian meets with rather more inquiry. Very little attention is given to perennial Ryegrasses. Spring Tares are scarce. Canary seed is exceedingly time. John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.

HAY.

Tuesday's Whitechapel Market report states that supplies were large, especially of Clover, prices being as follows:—Prime Clover, 95s. to 107s.; inferior, 60s. to 75s.; prime second cut, 90s. to 105s.; best meadow hay, 80s. to 80s.; inferior, 40s. to 65s.; and straw, 28s. to 37s. per load.—On Thursday there was a large supply offering. The trade was dull, at about Tuesday's rates.—Cumberland Market quotations:—Superior meadow hay, 82s. to 92s.; inferior, 60s. to 72s.; superior Clover, 10ss. to 12s.; inferior, 70s. to 88s.; and straw, 34s. to 38s. per load.

POTATOS.

The Borough and Spitalfields Markets reports state that there were good supplies on offer, but the trade was quiet, as follows:—Magnum Bonums, 80s. to 90s.; Regents, 70s. to 90s.; Champions, 60s. to 70s.; and Victorias, 70s. to 90s. per ton. — The imports into London last week consisted of 28 bags from Hambug, 81 bags from Boulogne, and 100 sacks from Bordeaux.

COALS.

The following are the prices current at market during the week:—Walls End—Hetton, 16s.; Hetton Lyons, 14s. 6d.; I cambion, 15s. 6d.; Wear, 14s. 6d.; Hulam, 15s.; East Hartlepool, 15s. 3d.; South Hartlepool, 14s. 9d.; Thornley, 15s. 3d.

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HOLBORN ROSE
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HOLBORN PHARL
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HOLBN, VERMILION
HOLBORN WHITE
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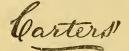
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Cineraria Brilliant Prize 18. 6d	. 2	6	3 6	5 0
Gloxinia Marbled Prize	2	6	5 0	
Godeti a Lady Satin Rose	ĭ	6	2 6	5 0
Godetia Spotted Carpet	I	6	2 6	
Calceolaria Victoria Prize 1/6	2	6	3 6	5 0
Calceo. Australian Nugget	2	6	3 6	5 0
Calceolaria Bird of Paradise	2	6	3 6	5 0
Nasturtium Empress of India	ĭ	0		
Nasturtlum Ladybird	I	6	26	
Poppy Victoria Cross	1	6	я б	
Single Dahlia Unique 15.	I	6	26	5 0
	Calceolaria Golden Princess Cineraria Brilliant Prize 12 to 64 Gloxinia Marbled Prize Godetia Lady Satin Rose Godetia Spotted Carpet Calceolaria Victoria Prize 16 Calceolaria Bird of Paradise Calceolaria Bird of Paradise Nasturtium Empress of India Nasturtium Ladybird Poppy Victoria Cross	Calceolaria Golden Princess. 2 Cineraria Brilliant Frize 12 62 62 Gloxinia Marbled Prize 2 2 Godetia Lady Satiu Rose 2 1 Calceolaria Victoria Prize 1/6 2 Calceolaria Victoria Prize 1/6 2 Calceo. Australian Nugget 2 Calceolaria Bird of Paradise 2 Nasturtium Empress of India 1 Nasturtium Ladybird 2 1 Poppy Victoria Cross 3 1	Calceolaria Golden Princess. 26 Cineraria Brilliant Prize 12 64 2 6 Glostnia Marbled Prize 2 1 6 Godetia Spotted Carpet 1 6 2 6 Calceolaria Victoria Prize 1/6 2 6 Calceolaria Victoria Prize 1/6 2 6 Calceolaria Brid of Paradis 2 6 Calceolaria Brid of Paradis 1 6 Calceolaria Brid of Paradis 1 7 Calceolaria Brid of Para	Calceolaria Golden Princess. 2 6 3 6 Cineraria Brilliant Prize 1: 2 6 3 6 Gloxinia Marbled Prize 2 6 5 0 5 0 Godetia Lady Satin Rose 1 6 2 6 6 2 6 Godetia Spotted Carpet 1 6 2 6 3 6 Calceolaria Victoria Prize 2 6 3 6 Calceolaria Bird of Paradis 2 6 3 6 Calceolaria Bird of Paradis 2 6 3 6 Calceolaria Brind of Paradis 2 6 3 6 Nasturtium Empress of India 1 0 . Nasturtium Ladybird 2 6 2 6 Poppy Victoria Cross 1 6 2 6

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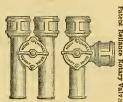
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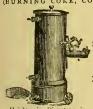
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`HIS New Early White Kidney is a Novelty of Sterling Merit. It is fit for use within a few days of the earliest Kidney. The tubers are perfectly formed, eyes very shallow, skin clean, and it is beautifully white and mealy when cooked.

It is a most abundant cropper (as many as forty handsome tubers, weighing 12 lb. in the aggregate, have been dug from one root), and, unlike most New Potatos, it improves year by year. It is perfectly distinct from any other, and is, without doubt, the finest Second Early Potato in cultivation.

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From Mr. THOMAS LAXTON, Seed Grower, Girtford, Bedford.

"I Snowdrop' Potato as tried at Girtford this season against most of the newer varieties as well as the old standard sorts, has proved itself a very first-class Potato. I had frequeotly, during the past two seasons, upportunities of seeing it exhibited at Northampton and in the neighbourhood, and I noted it then as the handsomest Potato I had ever seen. I am pleased to add that usize, productiveneess, and quality, for an early variety, it has no superior. We have had our full share of the Potato disease, but at lifting time I could detect no signs oft in "Snowdrop." I have sime examined the stock and it is still free, whilst many others of the never varieties are suffering very much. I found it, too, quite distinct from "Snowdrake," and it must not be confounded with that variety."

From Mr. EDMUND COLE Gardener to Hie Excellency Earl Spencer, K.G.,

"Your new early Kidney Potato" Sanwdrop 'proved with me ooe of the best. For cropping, appearance, cooking, freedom from disease, and other good qualities, it cannot be surpassed. When better known it will no doubt become a great favourite both with gardeners and market gardeners."

From Mr. RICHARD THOMAS, Gardener to The Right Hon. the late Lord Overstone, Overstone Park, Northampton.

"I have grown your new Potato 'Snowdrop' for two seasons. It is excellent in every respect—early, large, and handsome, a great cropper, of good quality, very white (as its name denotes), and has been entirely free from disease. 'Snowdrop' was in my prize collection of Vegetables at the last Northampton Horticultural Show."

From Mr. J. HARLOCK, Gardener to The Right Hon. the Lord Lilford, Lilford Hall, Oundle.

"After growing your Potato 'Snowdrop' for two seasons, I think it the best Potato for quantity and quality I have ever grown. I recommend it to all my friends."

From Mr. J. WITNEY, Gardener to George Farrer, Esq., Brayfield House,
"I have grown your 'Soowdrop' Potato for three seasons on heavy and light soil, and find it
one of the best Potatos extant, and the best quality Potato I have yet grown—and I have fifty of
the leading sorts of the day. With respect to the statement I have seen in print as 'to it's long
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flattish and generally larger at the heel, 'Snowdrop' being uniform the whole length of the tube.
It is also much earlier fit for use, the skin a different colour, and the haulm more robust—though
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From Mr. EDWARD WILSON, Gardener to The Right Hon. the Earl of Lindeay, Uffington House, Stamford.
"Your' Snowdrop' Kidney Potato with me is excellent both for quality and crop. I planted 6½ lb. in the ordinary way, and the produce was 23 stone 9 lb. of excellent tubers."

Prom Mr. J. GREGORY, Gardener to The Viscountess Clifden, Holdenby House,
"I have grown your Potato' Snowdrop' since 1881, and am very much pleased with it. It
is early, large cropper, good even shape, very white and of fine quality. This year I have again
lifted a very fine crop of good sound tubers. It is very much liked in this neighbourhood."

From Mr. J. JENNINGS, Gardener to Leopold de Rothschild, Esq., Ascott, Leighton-Buzzard.

"The 'Snowdrop' Potato I had from you last February is the best second Potato I ever grew. It is very handsome, prolific, and of good quality."

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From Mr. JOHN ROWE, Gardener to Major Orred, Lavant Houee, Chichester,
"I think 'Snowdrop' Potato one of the best second early Potatos that can be grown. In
1882 I planted ra lb io the ordioary way, and the produce was 554 lb. Had I given them more
room I have no doubt I should have had a much larger produce."

From Mr. WILLIAM CARDEN, Gardener to Miss Watson, Langton Hall, Tunbridge Wells.

"I think your 'Snowdrop' Potato is one that cannot be spoken too highly of, both as regards cropping and resisting the disease. It is an excellent Table Potato."

From Rev. WILLIAM LAW, Marston Truesell Rectory, Market Harhoro', "11 mg lad to inform you that having grow o 'Snowdrop' Potato for two seasons, it has asswered my fullest expectations. It is of his flavour, white and meally when boiled, and so far unaffected by the disease. I scarcely know whether to term it one of the latest of the earlier as field of various sorts by its robust growth and compact habit. It has only to be known to be appreciated and extensively grown. I have sent a simple to a Clergyman in Wales, and be also pronounces if inter-rate."

"Snowdrop" Potato DIRECT List of Firms who have ordered

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COCKER, JAS. AND SONS	 	Aberdeen.
CONINCK, A. M. C. J	 	Dedemsvaart.
COOLING, GEO. AND SON	 	Bath.
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DIMMICK, C. AND SONS	 	Ryde.
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FISHER, SON AND SIBRAY	 	Sheffield.
GOLDING, J	 	Hastings.
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GARDENERS' CHRONICLE.

Established 1841.

No. 529.—Vol. XXI. SERIES.

SATURDAY, FEBRUARY 16, 1884.

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CHRYSANTHEMUMS—400 varieties, best sorts, and true to name. Cuttings, W. E.'s selection, tz. 4d. per dozen, 72 6d. per 100; Flants, ditto, 4z. per dozen, 72 6d. per 100; Flants, ditto, 4z. per dozen, 100; per 100; Cuttings, Buyer's selection, 12 6d. per dozen, 102; varieties see CATALOGUE, 1940; per 100. For new WM. ETHERINGTON, Manor House, Swasscombe, Kent.

Standard Wainute.

LANE AND SON have a large stock to get offer, 9 to 10 feet, 2s. 6d. each; extra fine large trees, 3s. 6d. to 5s. each.

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SEEDS.—Vegetable, Flower, and Farm, care-fully selected, reliable, and moderate in price. Illustrated LIST, containing copious interesting and useful informatioo, free. RICHARD SMITH AND CO., Seed Mercbaots and Nurserymen, Worcester.

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Lane and Half-standard Roses, at 15s. and 12s. per dozes, all leading kind.

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DORDERS CARNATION,
First-class Certificate was awarded at Kensington. A beautiful rose coloured Self, very highly scented, of great size, very bloomer and vigorous grower, and perfectly hardy. See Gardners Chronick, August 4, 183, page 1, 6. Price 44., 5. and 6r. a pair, Cash with order.

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PLANTS for GREENHOUSES, &c.—The best kinds of Camellia, Azales, Bouvardia, Crotoo, Epiphyllune, Sinders kora. Primula, Rhododendoo, Erica, Epaeris, Climbers, Pena, &c., nilly described in LIST, free to all applicants.

APAGERIA RUBER SUPERBA, 300 per dozen.

LAPAGERIA RUBER SUPERBA, 300 per dozen.
The above are strong crowns, trooted similar to Aspargus, and now ready for potting. Carfellly packed in moss.
R. H. VERTEGANS, Chad Valley Nurseries, Edgbastoo, Birmincham.

ONE THOUSAND GRIFFERAIE STOCKS, disbudded, 221.; Dwarf GLOIRE DE DIJON,

strong and cheap. HENRY ROCK, Kemberton, Shifpal, Salop.

Splendid Peaches and Nectarines in Pots.
AND A. DICKSON AND SONS offer
the about 2½ feet through, in perfect condition, and covered with bloom-buds Produced a fine crop of fruit in 1833. Special boundaries on with full per

TWELVE CARNATIONS and PICOTEES, anned sorts, 6s. Strong plants and control proven in open ground all summer, fit for foreign or garden persons to brase Bride, Souvenir de la Malmason, Furity, Prince of Orange, and others, distinct. Box gratis, or sent out of pots by parcels post if dewred.

J. H. LEV, Royal Nursery, Woodside Green, S.E.

Begonia Oldia.

AZALEA CHARLES PYNAERT.

CLIVIA, with large flowers.

E D. PYNAERT VAN GEERT,

Exotic Nurseries, Gheot.

The Price LIST of Novelties is just issued, and will be seet free on application.

CREEPERS for Walls, Trellises, &c., in object mere variety. By planting what is suitable an unsightly object measure of control of the contro

Special Culture of TREES and ROSES.—A large and select stock is now offered for sale. The Illustrated and Descriptive CATALOGUE of Fruits post-free for threepence, the Descriptive CATALOGUE of Roses post-free. THOMAS RIVERS AND SON, The Nurseries, Sawbridgewitt, Hertz.

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Trade on application.

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LILIUM AURATUM.—Good, plump, sound strong, 30:, and 41:, per dozen; extra strong, 30:, and 41:, per dozen. All other good LILIES at equally low prices.
Mr. WILLIAM BULL'S Establishment for New and Rare Plants. 536, King's Road, Chelsea, Loodon, S.W.

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Wholesale CATALOGUE of Home grown Garden
and Agricultural Seeds, and will feel obliged to those in the
Trade who have not received it if they will make application,
and an additional one will be sent them at once.
Seed Growing Establishment, Wisbech,

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WISE AND RIDES have now a demand of the undermenioned:—
GARDENIAS, TUEEROSES, EUCHARIS, Maidenhair FERNS, Maréchal Niel and other good ROSES, also GRANGES, Ballet, Boxes, Labels, &c., with full directions for packing, forsiered chapoe application.
WISE AND RIDES, Fruit and Flower Salesmen, Covent Garden, W.C.

To Nurserymen, Private Growers, &c.
CATTANEO, COMMISSION SALESMAN,
4. 44. HarStreet, and New Flower Market, Covent Gardeo,
CUT, Sopen to RECEIVE CONSIGNMENTS of CHOICE
CUT FLOWERS in any quantities. Terms on application.

WANTED, large Pots of EUCHARIS, IMANTOPHYLLUM, PANCRATIUM, &c., for Cash, or in EXCHANGE for other Placts.—Size and price to J. POUNCE, Nurseryman, Heodon, sear Lendon.

WANTED, FUCHARIS, CARDENIAS,
ROSES, ORCHIDS STEPHANOTIS, TUBEROSES, and other choice CUT FLOWERS,
W. DENMAN, Salesman and Horticultural Agent, Covent
Garden, W.C.

WANTED, EUCHARIS AMAZONICA Bulbs, DENDROBIUM NOBILE, or any over-grown ORCHIDS, CROTONS, or DRACEMAS, is C CHANGE for any PLANTS in J. H. Ley's Catalogue (free by post). Royal Nuturer, Woodside Green, S.E.

WANTED, large Plants of ASPIDISTRA LURIDA VARIEGATA, FICUS ELASTICA, PANDANUS VEITCHII, DRACÆNA TERMINALI, for Stock, in EXCHANGE for cther Plants or Cash. JOHN LEMAN, Olantigh Nursery, Chigwell Row, Essex.

WANTED, 10,000 strong 2-yr. Seedling QUICK. Samples and lowest price for cash. Apply to G. BANKS, The Nursery, Hayward's Heath, Sussex.

WANTED, Four good Plants of AGAVE
AMERICANA. Size and price to
IRELAND AND THOMSON, Craigleith Nursery, Edinburgh.

WANTED, large PALMS, such as SEA-plants of ADIANTUM FARLEVENSE. State lowest price for cash of EXCHANGF, to W. M. CROWE, Boleyn Nursery, Upton, Essex.

WANTED TO PURCHASE, a few Plants, that will fruit this season. State came and age of the plants, in pots, with the price of each, to A.X., Mr. Nepworth, Tranc Road, Tuobridge Wells, Kent.

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WANTED, Small FLORIST and NUR-SERY BUSINESS, or place suitable for above. Not particular to town or place. VERITAS, W. Fawn, Stationer, Stokes Croft, Bristol.

Seed Catalogue, 1884.

HARRISON AND SONS' Seed LIST is now ready, and will be sent free to all applicants.

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A NEMONE JAPONICA ALBA
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to the Irade.
HV. GODFREY, Nurseryman, Stourbridge.

A DESCRIPTIVE CATALOGUE of more than 200 serts of DAFFODILS free on application.

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WELVE MAIDENHAIR FERNS for 6s.

unatum, brasiliense, curvatum, luculatum, ad many others.

Any sorts not de-ired excluded. In 3-incb and 4-inch potHamper gratis for cash.

J. H. LEY, Royal Nursery, Woodside Green, S.E.

DISA GRANDIFLORA—Nicely growing established plants, sor. to 80s. per dozen.

A. VAN GEERT, Continental Nurseries, Ghent, Belgium.

To the Trade.

LARCH, 2-yr. Seedling; also transplanted Austrian, Corsican, Scotch, Mountain and Weymouth PINE. Prices on application to W. DRUMMOND AND SONS, Stitling.

TUBEROSE BULBS.—Just arrived, in fine condition, grown by W. Gray (late Gardener to Earl Brownlow), in mountand distinct, Jamaica. Price zer, per 100 large xze; j. tot, per 100 lecond size.

ORCHIDS from DEMERARA.—Oncidium Lanceanum, Burlingtonia, Paphinia, Epidendrum bicornutum, Scuticaria Steelii, Iooopsis, Coryauthes, &c., mounted or unmounted, io aoy quantity; also a few fine specimen plants.

J. RODWAY, Demerara.

BEECH, Strong, transplanted, 6 to 8 feet, for planted, cheap. Apply to permission, Apply to W. Jackson Apply to permission, Apply to pe

Gentlemen baving Waste or Unprofitable Land

PAMPHLET on NUT TREES, Mr. COOPER, F.R.H.S., Calcot Gardens, Reading, Berks,

DWARF ROSES, on Manetti, 24s. per 100,

WARY ROSES, OII Mailetti, 249. per 1009.

MANETI STOCKS, file, 25. per 1000.

ASPARAGUS, 3.yr. Connover's Colossal, 155. per 1000 in 2-yr. ditto, 100. per 10.0 in 3.yr. ditto, 100. per 1

TWENTY-FIVE STOVE and GREENBOUSE FERNS, tor. 6d. A most select collection of
as distinct, rare, and beautiful sorts in 3 the pots, fit for s'inch
at once, and will make fine specimens by the summer. Hamper
gratis for cash. Over 100 sorts at same rate
J. H. LEV, Royal Nursery, Woodside Green, S.E.

CLEMATIS COCCINEA.—Perfectly hardy Climber, free blooming. Flower sich Coral-red. For prices of this and many other Roots for present Plaoting see our General Seed CATALOGUE free on application. WATKINS AND SIMPSON, Seed Metchants, Exeter Street, Strand, W.C.

POSES IN POTS.—All the best New and Old English and Foreign sorts, from 18r. to 36r. per dozeo. These world-famed Roses cannot fail to give the greatest satisfaction. Descriptive LISTS on application.

RICHARD SMITH AND CO., Worcester.

LILIUM AURATUM, Japanese MAPLES, CYPRIPEDIUM JAPONICUM, &c.—If any of our Customers bave not received our New Special LIST, No. 65, we shall be glad to forward it to them upon application.
"THE NEW PLANT and BULE COMPANY, Lion Walk,

PEACH and NECTARINE TREES.-A fine lot of well-grown, dwarf-trained, healthy trees. Apply to Mr. COOPER, F.R.H.S., Calcot Gardens, Reading, Berks.

GRAPE VINES.—A fine stock in leading varieties, Planting and Fruiting Canes. Apply to FRANCIS R. KINGHORN, Nurseryman, Richmond.

STRAWBERRY PLANTS of V. H. de Thury, President, Rivers Eliza, and others, at 10s, per 1000. Sample box of plants by parcels post, 3d. Pampblet on Straw-berry Growing, 6d.

berry Growing, 6d.
W. LOVEL AND SON, Strawberry Growers, Driffield.

To the Trade.

To the Trade.

EAKALE, for Planting, 30s. per 1000.

Dwar maiden PEACHES, NECTARINES,
CHERRIES, PLUMS, DAMSONS, and APPLES, Obonts
will. TAYLER, Oborn Nursery, Hampton, Middlesex.

SALES BY AUCTION.

Tuesday Next.

ODONTOGLOSSUM ALEXANDRÆ, from the celebrated "Pacho" district. Imported and Established ORCHIOS.

MESSKS. PROTHEROE AND MORRIS
are instructed by Messrs. Fred. Horsman & Co., of Colchester, to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on TUESDAY NEXT,
A splendid importation of ODONTOGLOSSUM ALEXANDRÆ, from the celebrated "Pacho" district. These abound in beautifully spotted forms.
Also about 150 lots of CHOICE ESTABLISHED ORCHIDS from virtual collections, together with a quantity
On view morning of Sale. Catalogues had at the Rooms, and 8, New Broad Street, E.C.

Expiration of Lease. CLEARANCE SALE.

Expiration of Lease. CLEARANCE SALE.

ESSRS. PROTHEROE AND MORRIS
are instructed by Mr. Whitle to SELL by AUCTION, on the Frenises. The Eachol Nursery, Walham Green,
The whole of the well, grown NIVESERY STOCK, including
a large assortment of CONIFERS and EVERGREENS,
ORNAMENTAL TREES in variety, large quantities of
LAURELS, AUCUBAS, and HOLLIES, EUONYMUS
TAUDELOAK SERVILLED, OUTS, ENGINCTILES, &c.
TRADE, LOAK SERVILLES, &c.
TRADE, LOAK SERVILLED, OUTS, ENGINCTILES, &c.

Wednesday Next.

HIGH CLASS POULTRY and PIGEONS.

MESSRS PROTHEROE AND MORRIS

will SELL by AUCTION, at their central Sale
Rooms, 67 and 68, Cheapside, E.C., on WEDNESDY
NEXT, at half-past 12 o'Clock precisely, nearly 300 lots of
high-class POULTRY and PIGEONS, including uirds from
some of the principal and most successful breeders and exhibitors in the country, Sale. Catalogues had at the Rooms, and
8, New Broad Street, E. C.

N.B. These Sales take place every Wednesday, and entries
should be made at least seven days previously.

Eaton Nurseries, near Nowich, GREAT CLEARANCE SALE. Fourth portion of the beautifully grown NURSERY STOCK, by order of Messrs, Ewing & Co., who are giving up their Business.

Business.

MESSRS. PROTHEROE AND MORRIS

Are instructed to SELL by AUCTION, on the Premises, the old established Numeries at Eaton, cear Norwich, on WEDClock precisely each day, the Fourth portion of the valuable NURSERY STOCK, comprising
Several Thousand thriving young FRUIT TREES, well grown and trained for Pyramids, Bushes, Walls, &c.; to,coo Currants and Gooseberries; 2000 Kitcheel Gardee Roots, such as Seakele, Rhubarb, Asparagus, Raspberry Canes, &c.; 5000.

Nits and Filbert and large STANDARD ORNAMENTAL TREES, many times transplanted, and exceedingly well rooted, suitable for timediate effect.

2000 Standard and Dwarf ROSES of choicest sorts of H. P./s, Tess, &c. s, see.

acoo Sindard and Dwarf RUSES or concess
acoo Sindard and Dwarf RUSES or concess
A large quantity of Decidnous Flowering and Variegated
A large quantity of Decidnous Flowering and Variegated
Several thousand FOREST TREES of various sorts and
sizes, including a large quantity of WILLOWS, POPLARS,
ELMS, LIMES, and Several CHESTANS, COM FERS, &c.
The Lots will be so arranged as to suit both large sod small
buvers.

buyers.
May be viewed. Catalogues on the Premises, and of the
Auctioneers and Yaluers, 67 and 68, Cheapside, and 8, New
Broad Street, E.C.

Thursday Next.

Thursday Next.

BULES and ROSES.

MESSRS. PROTHEROE AND MORRIS
67 and 68. Chespaste, E. C., on THURSDAY NEXT, at halfsecond the second secon

Friday Next.

MAGNIFICENT NEW AERIDES, A. ROHANEAN

MAGNIFICENT NEW AERIDES, A. ROHANEANA.

MESSRS. PROTHEROE AND MORRIS

are favoured with instructions from Mr. F. Sander to
SELL the above by AUCTION, at their Central Sale Rooms,
or and 68, Cheapside, E.C., on FRIDAY NEXT, February 2,
at half-past 12 o'Clock precisely.

"This is a grand new
Frolessor Recitembach save as Reichenbachianum, but its
very long inflorescence is much denser.

The individual flowers are 1½ inch is diameter, and fifty
or more borne on the spikes. It combioes the good quality of
easy, fice and vigcous growth with beauty of colouring and
size of flowers, and a great diversity of colour in the varieties.
The lip is sulphur colour to defending the resy-violet, and
purple-violet, The importation came bome five weeks ago, and
purple-violet, The importation came bome five weeks ago, and
purple-violet, The importation will be offered, and annoy
them is a mass of immense proportion. See drawings.
On view morning of Sale. Catalogues had at the Kooms, and
8, New Brood Street, E.C.

Special Sale of Orchids in Flower.

8, New Broad Street, E. C.

Special Sale of Orchids in Flower.

MESSRS, PROTHEROE AND MORRIS
beg to anconnec that their next SPECIAL SALE of
ORCHIDS in FLOWER, will take place at their Central Sale
Rooms, 67 and 68, Cheapside, E. C., or TUESDAY, February
26, at half-past 12 o'Clock precisely.
Gentlemen desirous of including lots are requested to forward
a List by MONDAY morning, the 18th inst.
As the graph of the Monday of the Control of the control of the cample of LYCASTE SKINNERI ALBA,
example of LYCASTE SKINNERI ALBA,
for and 68, Cheapside, E.C.

Sunbury, Middlesex.

Only 16 miles from London.

By Order of the Executors of the late Mr. R. N. Osborn.

IMPORTANT to FLORISTS, NURSERYMEN,

BUILDERS, and OTHERS.

MESSRS. PROTHEROE AND MORRIS
Will SELL by AUCTION, at their Central Auction
Rooms, 67 and 68. Cheapside, E.C., on THURSDAY, March at 20 Clock precisely (unless an acceptable offer be made in the

at 2 o'Lock precisely (uoless an acceptable ofter be made in the contamine)—
Lot 1. The important FREEHOLD ESTATE known as Osborn's Old Nursery, Susbury, about ten minutes, walk from the contamination of the contaminati

Particulars with Plan may be had of Messrs, WALKER, BELWARD, AND WHITFIELD, Solicitors, 5, Southampton Street, Bloomsbury, London, W.C., and of the Auctioneers and Surveyors, 67 and 68, Cheapside, and 8, New Broad Street, E.C.

Monday Next.-(Sale No. 6594.)

Monday Next.—(Sale No. 6594)

5000 LILIUM AURATUM from Japan, &c.

M.R. J. C. STEVENS will SELL by AUCGarden, W.C., on MONDAY NEXT, February 18, at halfpast 12 o'Clock precisely:—
5000 LILIUM AURATUM from Japan, in fine condition.
Good bulbs of LILIUM NEILGHERRENSE, L. POLYPHYLLUM, and L. WALLICHIANUM.
2000 Tuberous-rooted BEGONIAS from Belgium.
A consignment of GLADIOLI from Frace.

1500 African TUBEROSES.

Liported ROOTS and BULBS from Mexico and other places, &c. On view morning of Sale, and Catalogues bad.

Wednesday Next .- (Sale No. 6596.)

ESTABLISHED and IMPORTED OROHIDS, &c.

NR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38. King Street, Covent
Barden, W.C., on WEDNESDAY NEXT, February 20, and past 12 of Clock precisely, the COLLECTION of
ORCHIDS formed by E. H. Moss, Esq., of Ravenscroft,
including—

ORCHIDS formed by E. H. Moss, Esq., of Ravenscroft, including—
CATTLEYA MENDELI Jand. C. MOSSIZ, in quantity;
CATTLEYA MENDELI JANG. C. MOSSIZ, in quantity;
CATTLEYA MENDELI JANG. C. MOSSIZ, in quantity;
CATTLEYA MENDELI JANG. C. MOWING, A. C. DOWING, A. C. DOWING, A. C. DOWING, C. MOSTLEY, DENDROBIUM JAMESIANUM, A. C. JOHNAL, A. C. DOWING, A. C. TRIANZ, SPECIAL OF THE CONTROL OF THE PRICE OF THE CONTROL OF THE CONTRO

On view morning of Sale, and Catalogues had.

Thursday Next .- (Sale No. 6597.) CHOICE IMPORTED BURMESE ORCHIDS. DENDROBIUM BRYMERIANUM.

DENDROBIUM BRYMERIANUM.

N. J. C. STEVENS will SELL by AUCTION, at his Great Recons, 35. King Street, and the Covent Garden, W.C., on THURS, which was a street of the Covent Garden, W.C., on THURS, which was a grand lot, in the control of the Covent of Messar. Hugh the control of the Covent of Messar. Hugh the covent of the Covent of Messar. Hugh the Covent of the

On view morning of Sale, and Catalogues had.

Thursday Next.-(Sale No. 6579.) CHOICE ORCHIDS in Flower

CHOICE ORCHIDS in Flower.

M.R. J. C. STEVEVENS will include in his Sreet, Coven beautiful to the Step of the State by AUCTION, at his Great Rooms, 38, King, Freet, Coven beautiful to lots of choice varieties of ODONTO-CHOOSUM ALEXANDRÆ And Hybrids; CYPRIPEDIUM DAYANUM (va. gigantum), grand varieties of CATTLEYA TRIANÆ, ODONTOGLÖSSUM FHALÆNOPSIS, with ninety Eulist, DENDROBIUM NOBILE ELEGANS, and other fine things.

On view morning of Sale, and Catalogues bad.

On view morning of Sale, and Catalogues bad.

Important Sale of 3000 First-class Roses. MR. J. C. STEVENS will SELL by AUC-TION, at his Great Rooms, 38, King Street, Covect Garden, W.C., on SATURDAY, February 23, at half-past 12 o'Clock precisely,

o'Clock precisely,
2006 first-least ROSES! rom Mr. B. R. Cant, of Colchester.
They comprise a valuable assortment of the neewest and
choicest varieties, Standard, Half-standard, Short-standard,
Dwarf, Climbing and Pillar Rose, all true to came.
On view morning of Sale, and Catalogues had.

New White Lælia anceps.

MR. J. C. STEVENS has received instructions from Mr. F. Suder, to SELL by JUCTION, at his Great Rooms, 38, King Street, Covent Garden, W. G., a superbingottation of a new white form of LÆLIA ANCEPS, of great beauty: the flowers are white and 5 inches in diameter, petals broad, and the inner part of lip is deeply veiened, on each side a crimton-put of lip is deeply veiened, on each side a crimton-put of the control of the contro

The Auctioneer, South Croydoo, and woking, Surrey.

Pareham, Hants.

M.R. F. W. ABRAHAM will SELL by
AUCTION, on MONDAY, February 18, at 2 o'Clock
precisely, at the Bugle Rooms, High Street, Fareham,
in choice variety. ROSES, FRUIT TREES,
PARING THE TREES, CONIFERS,
Catalogues of Mr. FITT, at the "Bugle" Hotel; or of the
Auctioneer, South Croydoo, and Woking, Surrey.

Corp Exchange, Winchester, Hants.

NR. F. W. ABRAHAM will SELL by AUCTION, in the Large Hall, as above, on SATUK-DAV, February 23, at 2 o'Clock precisely, and without any reserve, a choice and fine collection of NURSERY STOCK.

ROSES, CONIFERS, EVENGREENS, FRUIT and FOREST TREES, RHO

Bournemouth.

IMPORTANT TWO DAYS' SALE.

M.R. F. W. ABRAHAM will SELL by
AUCTION, o WEDNESDAY and THURSDAY,
February 27 and 28, at 2 o'Clock proupt each day at the
"Tregowell Arms," a magnificent collection of RHODD
ENDRONS, RUSES, CONIFERS (Deciment), EPOCGREEN in great variety.

Special attention is directed to this Sale, as the plants are all
healthy fine specimens, and all carfolly selected.
Catalogues at the "Tregowell Arms;" or of the Auctioneer,
Croydon, and Woking, Surrey.

TO BE SOLD, a capital large GARDEN of 2 Acres, quite heyond the size of those allowed to most moderate sized bouses in the district, the Residence, which has seven Bedooms, Dre-simple Breakfast-room, large Hall, who will be the size of the size o

WAIR, 80, Cheapade, E.C. (37/294)

Unusually good eportunity.—In the Liquidation of Clement L. Tall, of Sheffield, Handsworth, and Rotherham.

TO BE DISPOSED OF, by Private Tender, the whole of the Brate of this Debtor, consisting of about \$\frac{\psi}{\psi}\$ Acres of FLORAL and HORTICULTURAL LAND, in full enlibration. The stock consists of Ferns, Stephanolis, Orchids, Pelargoniums, Geraniums, Roses, Ornamental Leaf Plants, and a large assortment of Fruit Trees, Scheduled of the entire stock may be seen on application to the Joint Trustees.

Trustees.

Also a well-fitted and modern SEEDSMAN and FLORICULTURIST SALESHOP, situate in Exchange Street,
Shtefield, in a most momanding position, with all the Fixtures,
Stocked-ride, and Exchange Street,
Stocked-ride, and Exchange Street,
House Street, as they now are co the Fremises.
THOS. EARLE, Alliance Chambers, George Street, Sheffield;
or THOMAS WATKIN, Howard Chambers, Rotherham, the
Joint Trustees.

Nursery and Seed Business to be Disposed of.
TO BE DISPOSED OF, in consequence of
failing health of the Proprieto, the old-established
NURSERY and SEED BUSINESS carried on usoder the
style of Joseph Tremble & Soo, Pennith, Cumberland,
For paticulars apply to Mr. RUGH G. FATTINSON,
Crecofield Planes, Pennith.

CAPITAL GARDEN, with Lease, consisting of about 6 ares, with two Greenhouses, Stables, Lofts, &c., and Pleaty of Water, suitable for a Nurseryman or Market Gardeners, or both, in a splendid position in the town of Folkestone. Sure fortuce to an enterprising man.

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TO BE LET, three Acres of GROUND, or less, in the best part of North Kensington, suitable for a Florist or Horicultural purposes, Lawn Teanis or Pleasure Ground.

For terms, apply to J. F. CAREW, Surveyor, 22, Surrey Street, Strand, W.C.

TO BE LET, and may be entered upon on May 13 next, all that MARKET GARDEN, with stilled, &c., cow in the occupation of Mrs. Mitcheson, and situated in Pelaw Leazes, on the south side of Gilesgate, in the City of Durham. For further information apply to Mr. WILLIAM FORSTER, Surveyor, Leedenderry Offices, Seaham Harbour.

FRIDAY NEXT.

MAGNIFICENT NEW AERIDES.

AERIDES ROHANEANA.

M ESSRS. PROTHEROE AND MORRIS are favoured with instructions IVI from Mr. F. Sander to SELL the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY NEXT, February 22, at half-past 12 o'Clock precisely.

Professor Reichenbach says: - "This is a grand new Aërides. It ranks near the rare A. Reichenbach-

ianum, but its very long inflorescence is much denser."

The individual flowers are 11/2 inch in diameter, and fifty or more borne on the spikes. It combines the good quality of easy, free, and vigorous growth with beauty of colouring and size of flowers, and a great diversity of colour in the varieties. The lip is sulphur colour to deep orange, the sepals and petals purple, crimson, violet, white, often tipped rosy-violet and purple-violet. The importation came home five weeks ago, and the plants may be looked upon as perfectly safe. They are simply in superb order, with fine roots and sound healthy leaves. The entire importation will be offered, and among them is a mass of immense proportions. (See Drawings.)

On view Morning of Sale. Catalogues had at the Rooms, and 8, New Broad Street, E.C.

HURST & SON'S NOVELTIES for 1884.

PEA-DUKE OF ALBANY (Abbott's).

This splendid new Pea has proved to be the finest yet introduced, either for exhibition or for table, and undustled as a main crop wriokled variety. It is very productive, bearing a profusion of extra large, well-filled pods, borne in pairs, which, being dark green in colour, are very handsome, and contain from nine to twelve fine Peas each. The flavour and quality are also excellent. It grows about 5 feet high, is of a vigorous and branching habit, and should, therefore, be sown thinly. In Sealed Haif-Pint Packets, 2s. each.

WILTSHIRE GIANT SCARLET RUNNER.

A vigorous grower and heavy cropper. The pods are of a large size, very fleshy, deep green in colour, and of excellent quality. The best variety for exhibition.

Per Quart, 2s. 6d.; Per Pint, 1s. 6d

SWEET PEA-PRINCESS BEATRICE.

Awarded a First-class Certificate by the Royal Horticultural Society as New Carmine Rose, August 14, 1883.

Sioce the introduction of the Inviacible Scarlet nothing has been offered as a novelty in Sweet Peas equal in merit to this charming variety. The colour of the flower is a rich and beautiful carmine-rose, slightly shaded with lighter and darker tints, entirely distinct from any other kind. They are of remarkable subnease, similar in this respect to Violet Queen, but the plant has a much more robust and free-blooming habit than the latter—It is perfectly constant, and the perfune is remarkably sweet, more so than in any other sort.

It will undoubtedly become one of the leading varieties of this useful and popular annual, and can be recommended as one of the very best of hardy flowers for cutting purposes.

Fer Packet, 1s. 6d.

MYOSOTIS SYLVATICA COMPACTA AUREA.

The merit of the Old Cliveden Blue Forget-me-Not, particularly as a spring bedding plant, is so universally recognised, that this new golden-leaved variety cannot fail to become a popular favourite. It is similar in habit and colour of foliage to the Golden Pyrethrum; the flowers are of the same clear bright blue as its prototype, and their contrast to the golden-yellow of the foliage is one of its chief merits. As its name implies, it is of peculiarly dwarf compact habit, and as a spring bedder it is destined to occupy a most conspicuous place.

PERIOR OF APPLICATION

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PRICE TO THE TRADE ON APPLICATION.

HURST & SON, 152, Houndsditch, LONDON, E.

"I sowed your 'Little Queen' Cos Lettuce last February, in gentle heat, and was cutting them outside before I transplanted any spring sown.

JEFFERIES' LITTLE QUEEN COS LETTUCE.

1s. per packet.

VERY EARLY, VERY HEAVY, VERY SMALL.

JNO. JEFFERIES & SONS, CIRENCESTER.

PROTHEROE AND MORRIS, HORTICUL-TURAL, MARKET GARDEN AND ESTATE AUCTIONEERS and VALUERS, 3, New Broad Street, E.C., and at Leyton-stone, E. Monthly Horticultural Register had on application.

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THE FORMATION of NEW, RENOVATION or ADDITION to existing GARDENS, PLEASURE GROUNDS, and ESTATE IMPROVEMENTS generally, carefully executed, by Contract or other-

wise. WILLIAM DINNES, 30, Richford Street, Hammersmith,

T. MILLINGTON AND CO., ENGLISH and FOREIGN SHEET and PLATE GLASS, WHITE LEAD, MILLED LEAD, OILS, and COLOUR MERCHANTS, 43, Commercial Street, E.

SOLIHULL,

1st January, 1884.

I beg leave to inform you that I have this day Sold the Business of a Nurseryman and Seedsman hitherto carried on by me at Solihull and Birmingham to

Messrs. C. W. FALCON & J. F. L. EVANS, by whom the Business will in future be carried on, under the Firm of

"THOMAS HEWITT & CO."

The new Firm have authority to receive on my behalf all Debts due to me to date. Yours obediently,

THOMAS HEWITT.

Tottenham.—Season 1884.

CATALOGUE of CHOICEST MISCELLANEOUS FLOWER SEEDS.—This most useful and
interesting Catalogue, which should be possessed by every one,
is now ready, and contains a specially choice selection of the
most showy Hardy Perennials, and such as come freely from
seed, choice Hardy and Half-bardy Florists Flowers, the leading and most useful Hardy Annuals, and an extraordinary fine
before been offered, and which, in the ordinary course, cannot
be procured. Copies may be had gratis and post-free, by
applying to be procured. Copies may be may grant and properlying to THOS. S. WARE, Hale Farm Nurseries, Tottendam, London.

CARRIAGE PAID. — Strong autumn-sown CAULIFLOWER PLANTS, September sown samples, 60, 11. 9d; 12.0, 31. CABBAGE, KALE, or BORECOLE, BRUSSELS SPROUTS, ONION, LETTUCE, ENDIVE, & 6c., 60, 9d; 120, 12. 3d. HERRS, twenty best varieties, 30, 21. 6d., 120, 72. Any quantity supplied. Write Grapetal quantities, or or aid or carriage paid. LIST

free. EDWARD LEIGH, Wrotham Farm, Dunsfold, Godalming.

EED POTATOS.—Potatos to grow for Exhibition! Potatos for the Garden! Potatos for the Garden! Potatos for the Field! A change of seed always pays. All the best and newest sorts at reasonable prices. Collections of 12, 24, 45, or 75 varieties made up. If you want to buy a peck, bushel, hundredweight, or ton, or a small quantity of one or many of the dedweight, or ton, or a small quantity of one or many of the list of nearly eighty of the leading sorts.

J. WATKINS, Fruit and Potato Grower, Pomona Farm, Withington, near Hereford.

To T H E TRADE. SEEDS.
SUTTON'S YELLOW INTERMEDIATE MANGEL, 35s.

SUTTON'S YELLOW INTERMEDIATE MANGEL, 35s. BERRSTS, PRIZE VELLOW GLOBE, 35s. per cwt. CHAMPION YELLOW GLOBE, 35s. per cwt. SHARPES TO SHARPES SHOW FOR FOR FOR THE SHARPES SHOW FOR THE SHAPE SHAPE SHAPE SHAPE SHOW FOR THE SHAPE SHAPE

Bast eartwitte, response to the following:

30,000 of excellent stout transplanted LARCII FIR, a4 to 30 inches, ror, per 1000; 18 to 30 inches, 14t, per 1000, 20,000 SCOTCH (fine), at 0.18 inches, 14t, per 1000, 5,000 SCOTCH (fine), at 0.18 inches, 16t, per 1000.

If the whole be stake, carriage paid to London.

CARTER'S TELEPHONE PEAS (true), 7s. per galloo.

Mangel Seed.

JOHN SHARPE is now offering to the Trade the undernamed sorts, of the freest character, his own growing:—Abbey Vellow, Berkshire Prize, Normarton Vellow, Golden Globe, Corning Clobe, Golden Tankard, Long Red Mammoth.

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OYCLAMENS.—Strong Plants in 48-pots, of the finest Whute strain in cultivation, for sale in large or small quantities. Inspection invited by W. WARREN, Worton Gardens, Isleworth, W.

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10 toos MYATT'S EARLY ASHLEAF.

10 toos FARLY ROSE.

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20 tons DALMAHOYS.
10 tons PATERSON'S VICTORIA.
Also CHAMPIONS, DUNBAR REGENTS, and MAGNUM BONUM. For price. &c., apply to
J. SMITH AND SON, Growers, Sipson, near Slough.

OSES (20 acres).—Well-rooted, many shooted, truly named, of matured vigorous growth, and of the best kinds. Bushes, R. S. & Co. S. selection, St. per dozen, for. per 100; packing and carriage free for cash with order. Standards, 151, per dozeo, or 100 free for 1201. These world-famed Roses canoot fail to give the greatest satisfaction Descriptive LIST free on a pipilication.
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Gold Medal Begonias.

AING'S CHOICE HYBRIDISED SEED,
all new and of unequalled quality. Sealed packets, free
by post—single, 12s, 2r 6d. and 5s.; double, 2s. 6d., 3r. 6d. and
5r. TUBERS, mixed seedlings, by Parcels Post, 4r., 6r., 9s.
and upwards per door. The Trade supplied.
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SURPLUS STOCK.—Handsome and Choice Evergreen and Deciduous TREES for Avenues, Parks, Gardens, Streets, &c Very good and cheap. LIST free by post. RICHARD SMITH AND CO., Nurserymen and Seed Merchans, Worcester.

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ACACIA ARMATA, in flower and bud, extra fine, 75s. and

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AZALEA AN EXPA. well budded, 65. per dozen.

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AZALEA INDICA. in variety, finely budded, £5. £6, and [1cr dozen.

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AZALEAIN forward, just opening, and in flower, 15s. 105. CANELILIAS, well but with buds, 21s., and 22s. per dozen.

CANELILIAS, well but with buds, 21s., and 22s. per dozen.

DRACÆNAS, in variety, fine plains, 18s. 10 gar, per dozen.

DEUTZIA GRACILIS, fine for potting for forcing, 21s. and 30s. per 1co.

DEUTZIA GRACILIS, in pots, in flower, 9s. per dozeo, Cos.

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[dozen.

GENINIAS fine, just opening, 12x, 05x, 10x, 12x, and 24x. per dczen, extra fine. [dozen. GENISTAS, fine, just openiog, 8s., 9s., 10s., 12s., and 24s. per LATANIA BORBONICA, well shaped sturdy plaots, 150s.

LAURIUS INUS, French White, well shaped plants, in pots, LAURUSTINUS, French White, well shaped plants, in pots, LAURUSTINUS, French White, well shaped plants, in pots, PALMS, 1997, but does not prove the plants of the provided p

Chplon Mursery, London, E.

CHOICE ST CON IFER Æ.—Abies

Douglasii, 1 to 1½ foot, 244, per 100; 1½ to 2½ feet, 307.
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2½ feet, 807. per doren. Arnauciai imbricata, 2 to 3½ feet, 407.
2½ feet, 807. per doren. Arnauciai imbricata, 2 to 3½ feet, 407.
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EXTRAORDINARY fine stuff, in both Planting and Forcing sizes. Prices on application to

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VEGETABLE and FLOWER SEEDS. Genuine and Select. Quality Unsurpassed. All Garden Requisites.

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Containing a Coloured Plate (natural size) of Eight Leading Market Garden Peas.

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NOVELTY! NOVELTY!!

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ENORMOUS CROPPER.

60 to 100 Pods on each vine.

Sow Seeds 6 inches apart.

HALF-PINT SEALED, 2/6.

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The best in the market : never fails.

Victoria & Paradise Nurserles, Upper Holloway, London, N.

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Has the fellowing varieties of SEED POTATOS to offer:
Rivers' Royal Ashleaf
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Soowlike
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And other leading varieties.

Also a large quantity of JERUSALEM ARTICHOKES. Prices, low, oo application.
1 and 3, York Street, Borough Market, S.E.

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HOOPER'S CATALOGUE, price 4d., which is returned in the first purchase.
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Single, mixed colours, 12. 6d. and 22. 6d. per packet.

Double, mixed colours, very choice, 22. 6d. per packet.

Pull particulars as to soil, manue, position, preparation of round, 6c., with each packet.

RIDGER MECLELLAND & CO., Nurserymen, &c., Newry.

To Market Gardeners, Gentlemen's Gardeners, and OTHERS ABOUT to COMMENCE BUSINESS.

JAMES FARRAR AND CO. have to announce the Publication of their TRADE SEED CATALOGUE, which will be forwarded, post-free, on application. Seed Warehouse, 96, Frimmers St., Bishopspate, London, E.C.

Mitchell's Gooseberry.

Mitchell's Gooseberry.

Mitchell having obtained a Stock of this extraordinary variety of GOOSEBERRY, is now prepared to offer, for the first time, Trees and prepared cuttings for present planting. To all Growers, Salesmen, and Euyers of Fiuti atteoding Covent Garden Market, this fine variety is too well known to oced description, but to others it may be described as the largest, greatest cropper, and earliest for picking when green. 1-yr. Trees, 45; per 10.3; Cuttings, £5 per 1000. Broadlands, Enfield Highway, Middlesex.

A VENUE TREES-

6s. JNO. JEFFERIES AND SONS, irencester.

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AND F. SHARPE are prepared to make a special offers of all the varieties of VEGETABLE and AGRICULTURAL SEEDS they have grown this sent processes selected stocks. The quality of the seeds is excellent, and the prices are very low.

Seed Growing Establishment, Wisbech.

Seed Growing Establishment, Wisbech.

SPECIAL OFFER.—ASH, 2 to 3 feet, 16s.
per 1000; Spanish CHESTNUTS, 2 to 3 feet, 20s. per 1000; ELMS, 2 to 5 feet, 20s. per 1000; ELMS, 2 to 5 feet, 45s. per 1000; LARCH, 17s to 2 feet, 1000; SPUCLE FIR, 1 to 1½ foot, to per 1000; 18 to 2 feet, 12s. per 1000; 3 to 3 feet, 14s. per 1000; 18 to 2 feet, 12s. per 1000; 3 to 3 feet, 14s. per 1000; 18 to 2 feet, 12s. per 1000; 18 to 2 feet, 12s. per 1000; 18 to 2 feet, 12s. per 1000; 18 to 3 feet, 14s. per 1000; 18 to 3 feet, 15s. per 1000; 18 to 3 fee

To the Trade.

WINDSOR and LONGPOD BEANS.

AND F. SHARPE have fine samples of
Broad Beans to offer, including Hailington Windsor,
Taylor's Windsor, Green Windor, Monarch, and Green Longpod, and other varieties, all at very low prices, which may be
had with samples on application.

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The following heing on land let for building purposes, and must be cleared by March next, will be given at the following prices. All are offered so long as usuald i.

100,000 transplanted LARCH, stout and clean, 2 to 3 feet,

ios. per 1000. 2-yr. Seedling SCOTCH FIR, Native, 15. 6d.

100,000 transplanted LARCH, Stott and ciean, 2 to 3 cees, 300,000 ayr. Seedling SCOTCH FIR, Native, 11. 6d.
100,000 2-yr. Seedling, 1-yr. transplanted, SCOTCH FIR, Native, 45 per 10.00.
100,000 2-yr. Seedling, 2-yr. transplanted, NORWAY SPRUCE, 61 per 10.00.
100,000 2-yr. Seedling, 2-yr. transplanted, White AMERICAN SPRUCE, 131 per 10.00.
100,000 2-yr. Seedling, 2-yr. transplanted, PINUS LARICIO, 10.000 2-yr. Seedling, 2-yr. transplanted, PINUS MONTANA, 81 per 10.00.
100,000 2-yr. Seedling, 2-yr. transplanted, PINUS MONTANA, 82 per 10.00.
100,000 PINUS MONTANA, 12 to 18 inches, 131. per 100.
100,000 PINUS CEMBRA, 18 to 24 inches, 131. per 100.
100,000 PINUS CEMBRA, 18 to 24 inches, 121. per 100.
100,000 PINUS MENDERS, 18 to 24 inches, 121. per 100.
100,000 PINUS MENDERS, 18 to 12 inches, 121. per 100.
100,000 PINUS MENDERS, 18 to 12 inches, 121. per 100.
100,000 PINUS MENDERS, 18 to 24 inches, 121. per 100.
100,000 PINUS MENDERS, 18 to 12 inches, 121. per 100.
100,000 PINUS MENDERS, 18 to 12 inches, 121. per 100.
100,000 PINUS MENDERS, 18 to 12 inches, 121. per 100.
100,000 PINUS MENDERS, 18 to 12 inches, 121. per 100.

WANTED.

Large Plants of

AZALEA INDICA ALBA OR FIELDER'S WHITE,

F.r Cash or Exchange. Must be well set.

HEATH & SON,

ROYAL EXOTIC NURSERIES, CHELTENHAM.

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JOHN LAING & CO.

Our choice Strains are unequalled.

Primula, white or red, 1s. and as. 6d. per packet.
Begonia, Calceolaria, Cyclamen, 1s. & 2s. 6d., 16.

Gioxinia, Cuneraia, Pansy, 1s. 6d. and 2s. 6d. st., Mignonette, 6d. per or.; Sweet Peas, 4d. per ox. 4sters, Stocks, Dahlia, Petunias, 6d. & 1s. per pk.

Waillowers, Zunnias, Marigolds, 3d. per packet.

Seedsmen, First Etili, S. E.

NEW MELON for 1884. ST. BLAISE.

This splendid green-fleshed Melon was raised by Mr. W. Carmichael, who was for many years Head Gardener to H. R. H. the Prace of Wales. The fruit are handsomely and evenly netted, and of large star, weighing a to 6 pounds each. The flavour and delicate aroma. This variety will be found most valuable during the shooting season, owing to its lateness in ripening, when all other sorts in the house are vere, often carrying its large, handsome, and fine flavoured fruit through to the end of November. Scock very limited.

Price 5s, per packet, to be obtained only of

DANIELS BROS., SEEDEMEN TO H.R.H. the PRINCE OF WALES, NORWICH.

W EARLY RHUBARB, Charles Kershaw's "Paragon." NEW EARLY

This is unquestionably the finest variety of Rhubarb ever offered; in mild seasons it is ready to pull in February. The crowns and stalks are produced in such profusion that more than twice the weight can be pulled from this than from any other sort. The columy is a splendid red, flavour excellent, and it has this qualification over all others, IT NEVER SECO.

PRICE-Per Plant, 1s. 6d.; per Dozen, 15s. Price to the Trade on application.

For Testimonials and all other information, see back page of Gardeners' Chronicle for October 13. May be had of all the principal Nurserymen and Seed Merchants, or direct from

CHARLES KERSHAW, THE SLEAD SYKE NURSERIES, ERIGHOUSE.

WATERER ANTHONY Invites attention to the following LIST of well-grown and properly rooted NURSERY STOCK:—

HOLLIES, Common Green, 3, 4, 5, 6, 7, 8 to laurifolia, dittn. [to feet high. Hodgin s, 3, 4, 5 to 8 feet. myriifolia, ditto. Saw-leaved, dittn.

many thousands.

Saw-leaved, dittn.
Scottica, 3 to 8 feet.
Yellow-berried, altaclarense and others.
Yellow-berried, altaclarense and others.
Yellow-berried, altaclarense and others.
Yellow-berried, altaclarense and others.
Yellow-berried, 3,4,5,6,8 to 10.

"In the second of the second

YEWS, Common, 3, 4, 5, 6, to 10 feet, thousands.

"Golden, of all sizes up to 10 feet. We have many thousands as Pyramids, Globes, Standards, in point of variety and size unequalled.

CUPRESUS EKECTA VIXIDIS, 3, 4, 5, 6, to 8 feet,

"Lawsoniana lutea, 3, 4, and 5 feet, hundreds of beautiful specimes.

n, Lawsoniana lutea, 3, 4, and 5 leet, hundreds in ceautitus
specimes.

THUIOPSIS DOLABRATA, 3, 4, and 5 feet, hundreds.

RHODODENDRONS, many thousands, 3, 4, 5, 6, 7, 8, to
20 feet. The plants are covered with buds.

AZALEAS, Hardy, the finest varieties known, 2, 3, 4, and
5 feet high, thousands,
JUNIFERS, Chiuese, 7, 8, and 10 feet high.

PICEA PINSAPO, 6 to 8 feet.

NORDMANNIANA, 6, 7, and 8 feet.

Knap Hill Nursery, Woking Station, Surrey.

SCARCE GARDEN PEA VANGUARD (Nelson).

An Early Wrinkled Pea, with a moderately An Early Wrinkled Pea, with a moderately vigorous habit of growth, 3 feet to 3½ feet high, producing, in the greatest profusion, well-filled pods containing extraordinary large Peas of a most delicious Marrow flavour — a quality entirely absent in early kinds.

Price, 5s per quart. Cash with order. Post-free.

JOHN LEMAN, Chigwell, Essex, &

WHEELER'S CHOICE SEED

OF EXTRA FINE QUALITY.



DOUBLE GLOUCESTER.—This remarkable variety is one of the most productive Potatos ever introductive Potatos every present in the productive Potatos every productive Potatos every every productive Potatos every every

Price 4s. per peck; 14s. per bushel.

RECORDER (Dean) WHITE KIDNEY,—
First-class Certificate of Merit, International Potato
Committee, 1982. From Success and Woodstock
Kidney, A very fine, second early white Kidney;
tubers loog, flat, smooth, and handsome, a great cropper and excellent quality. A first-rate garden Potato;
very distinct, and a rare acquisition. We hold the entire
stock of this valuable variety. It is excellent not only for
exhibition but of high-class quality for table use.

Price 1s. per pound; half-peck, 6s.; peck, 10s. 6d.

WHEELER'S GLOUCESTERSHIRE KIDNEY maintains its position as one of the earliest and best Potatos in cultivation.

Price 3s. per peck.

J. C. WHEELER & SON.

SEED GROWERS,

GLOUCESTER.



UTBUSH'S MILLTRACK MUSHROOM
TRACK OF TRACK MUSHROOM
SPAWN-To well known to require
description. Once used no other will
be willingly staff, or for, per cake,
Price for, per bushel, nr for, per cake,
None genuine unless in sealed packages and printed cultural directions
eaclosed with our signature attached.
MM. CUTBUSH we so Music

WM. CUTBUSH AND SON (Limited), Highgate Nurseries, London, N.



FROEBEL & CO.

Our NEW ILLIUSTRATED CATALOGUE (No. 99), centaining dell Lats of all our Collections of Hardy Plants, tracky, and will be sent prot-free on application. We would draw social attention to nur fine collection of Home-grown Alpine Plants, the enumeration of which is enriched by theroughly practical

Notes on their successful cultivation,

NOTES OII CHEEL SUCCESSION CULTURATION, as practised for years in our nurseries. With the help of these notes, indicating the proper soil and position for all species, every amateur of Alpine plants may grow them to perfection. To encourage beginners we send out, post-free to any address in the United Kingdom, the following collections:— so different species of hee ALPINE PLANTS of easy cultivation, carefully labelled—to London, zor.; to England, zzr.; to Scotland and Ireland, zzr. (so England, zzr.) to Scotland and Ireland; set, off. (in England, zzr. dot), to Scotland and Ireland; zzr. dot. (in England, zzr. dot). The above collections will be sent immediately on receipt of P.O.O.; smaller collections by sample post,

NEUMUNSTER, ZURICH (Switzerland).

OXFORD



ROSES

GEORGE PRINCE has much pleasure in nffering good Plants of the following 24 varieties for 50¢, packing included. All are grown and budded in the open air, and on the Cultivated Seedling Brier:—

nd on the Cultivated Seedl Alba rosea. Anna Olivier. Catherine Mermet. Comptesse Riza du Parc. Francisca Kruger. Madsme A. Jacquier. Madame Charles. Madame H. Jamain. Marie Van Houtte. Maréchal Niel. ouvenir de Paul Némn

The above 12 varieties, 16s.

Amazone.
Bouquet d'Or.
Climbing Devoniensis
Etoile de Lynn,
Jean Ducher.
Madame Berard,
Madame Chedane.
Madame Lambard,
Marie Guillot.
Perle des Jardins,
Souvenir d'un Ami.
Wm. A. Richardson, The above 12 varieties, 15.

JOHN LAING & CO. Begonia

Lating's | Ollections of a dozen named, our Selection. |
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December 1, B 187, B 187,

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Hold a large stock of superbly grown Plants of the following, and will be pleased to send Samples and Prices on application :-

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RHODODENDRON PONTICUM, 1 to 1½ foot, 1½ to 2 feet, bushy.

choicest named, in 50 to 60 varieties, magnificent plants, grown in sandy loam soil.

LAUREL, Common, 1½ to 2 steet, 2 to 1½ feet, 2½ to 3 feet.

COLCHICA, 1 to 1½ foot, 1½ to 2 feet, 2 in 5 feet.

PORTUGAL, 1 to 1½ foot, 1½ to 2 feet, 2 in 5 feet.

PORTUGAL, 1 to 1½ foot, 1½ to 2 feet, 2 in 5 feet.

ROTUNIFOLIA, 1 to 1½ foot, 1½ to 2 feet, 2 in 5 feet.

CATALOGUES of Roses, Fruit Trees, Conifera. Shrubs, &c., free on application.

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THE TRADE. APPLE LORD SUFFIELD, on Crab, Dwarf Maiden.

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APRICOTS, dwarf trained, 30s. and 36s. per dozen. CHERRIES, in variety, dwarf trained, except May Duke and Morello, 21s. and 24s. per dozen. CHERRIES, Dwarf Maiden, except May Duke and Morello, \$\frac{1}{2}\$ tos. per 100.

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PLUMS, Dwarf Maiden, \$\int_2\$ 10s. per 10o.
ROSES, Standard and Half-standard, \$\int_3\$ to \$\int_4\$ per 10o.

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LARCH, of all sizes, from 1-yr. seedlings to 20 to 16 feet, all the produce of seed collected for them in the Forests in the North of Scotland, and taken out of come on kines within their Nursery Grounds. This is the best guarantee of their Stock being "True Native."

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FRUIT TREES-FRUIT TREES

APPLES, PEARS and CHERRIES. Dwarf-trained, for walls, REAL PLANS FOR AN AUGUST AND AN AUGUST AND AUGUST A

2nd 24s. per dozen. CURRANTS, Red and Black, of sorts to name, 8s., 10s. and

12s. per 10a.
RASPBERRIES, Fillbasket, 6s. per 10a.
ROSES, Dwarf H.P.'s, our selection, 40s. per 10a.
CONIFERS, bushy, for pots, window boxes, &c., 9 to 15 inches,

CONIFERS, DISBNY, use pass, must be seen to see the seen to possible per too.

POPLARS, Lombardy and Ontario, from 5 to 10 feet, 8s. to 55, per 100, 12 to 16 feet, extra fine, for screens, grown in single lines, 15t. per dozen.

SHRUBS, Decidious, 1st. and 1st. per 100, good plants.

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JAS. HOLDER AND SON have to offer the above in strong healthy plants, established in small 60-pots, coasisting of Show, French, and Spotted varieties to aname, 30c, per 10c; also Extra Strong Plants in a8-pots, 9c per dozen, 6cd, per 10c; also Extra Strong Plants in a8-pots, 9c per dozen, 6cd, per 10c; also Double-flowering Tuy-leaved prices. Packing included. Cash with order, Packing included. Cash with order, Packing included. Cash with order.

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A SPARAGUS.—Strong 2 and 3-yr. Connover's Colossal, 2s., and 2s., 6d. per 100, 15s. and 2s., per 100. Extra strong 2 yr. Giant, 2s. 6d. per 100; 18s., per 100. Special quotations to the Trade.

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Frace, the largest and richest in Europe in Giles,
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APPLES, PEARS, PLUMS, CHERRIES, PEACHES, NECTARINES, APRICOTS, &c., as Standards, Dwarfs, Pyramids, Bushes, Cordon and Trained Trees in great variety. Pramids, Bushes, Cordon and Trained Trees in great variety. HOUSE TREES in post, and the various form of the various from the property of the various from t

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RHODODE SMITH STORY,
Bright Standard, named, with good heads
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Dwarf, doo, do, 65 and 67 100. per 100.
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AUREL, Common, I-yr., 185.; 2-yr., 225.; Colchie, 2-yr., 35. per 1000; 2 feet, fine, 105. per 100; 4 to 5 feet, extra bushly, 9.5 per dozen; rounditolia, 2 to 3½ feet, 255. per 100.

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MANETTI STOCKS, strong, 26s. per 1000.
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BALSAMS.—'Henderle & Sons' strain appears to possess all the good qualities of the best type of double flowers. They are of good size, well filled out, and of good substance. The motified purples and mottled reds, the scarlest and pure whites, are in every way first-class.'—Gardners' Chronicle, July 21, 1809.

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APPLES, 3 and 4yr., branched, 5 to 7 feet, 9t. per dozen, 50s.
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SEED POTATOS, grown expressly for seed to Steller Includes all the following visiting and the following visiting visiting the following visiting visiting

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Sandringham Kildery.
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ERFURT GIANT, best and largest kind, 3-yr. cld plaots, at

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CABBAGE PLANTS, 1,000,000 of Early Rainbam and Enfield Market, 22. 6d, per 1000 of 1200; Red Dutch for Pickling, 52, per 1000; all from the very best stock. 3-yr. Connover's Colossal ASPARAGUS ROOTS, fire, 186, per 1000; a-yr. do, fine, 152, per 1000. Best Soverens RHUBARB ROOTS, Earliest in Cultivation, for Planting-out, 22; per dozen. PSNNYROYAL and RUE ROOTS, 51, per 100. The Color of PSNNYROYAL and RUE ROOTS, 51, per 100. The Color of PSNNYROYAL and RUE ROOTS, 51, per 100. The Color of PSNNYROYAL AND REMOVED AND THE COLOR OF THE

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For exhibition and table use. Before ordering send for

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ADIANTUM PEDATUM.
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Frees on application.
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TO FORESTERS and OTHERS. — We bave about 50,000 well grown LARCH to dispose of, part of them 2 to 3 feet high, and the rest 20 to 24 inches bigh, stout and good. Larger LARCH, 182, per reco; lesser LARCH, 183, per reco. Samples seat on application. Also good

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per 1000.
OAK, English, 3 to 4 feet, 90s.; 4 to 5 feet, 130s, per 1000.
NAPLE, English, 2 to 3 feet, 5s.; 3 to 4 feet, 8s.; 4 to 5 feet,

MAPLE, English, 2 to 3 feet, 5s.; 3 to 4 feet, 8s.; 4 to 3 feet, 5p.; 10 feet, 5p.; 10 feet, 5p.; 10 feet, 6s.; 5 to 6 feet, 9ps. per 1000.

PRIVET, Evergreen, extra strong, 3 to 4 feet, 4ps.; 4 to 5 feet, 5ps. per 1000.

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PINE, Weymouth, 7 to 8 feet, 4gs.; 8 to 10 feet, 6ps. p. dozen, FINE, 10 feet, 6ps. p. dozen, from FINE, 10 feet, 6ps. p. dozen, from

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The Finest Second Early White Kidney in Cultivation.

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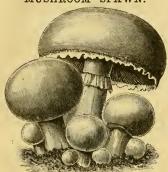
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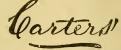
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SUTTON'S LATE, QUEEN BROCCOLI.—"Of the six varieties of Broccoli I have grown bere this season, in exactly the same soil and situation, I find no equal to the above. In this variety we not only have one good quality, so for at least a mooth later, sphendid white compact heads of the very best quality. The habit of the plants is all that can be desired, being as dwarf as it is possible. Many of our other kinds of Broccoli have been killed outright this Chronicle, May 19, 1838. Chronicle, May 19, 1883.

"Your Late Queen Broccoli came remarkably fine; a great number were more than a foot across, very white and close. One measured 19 inches in diameter, of beautiful form and colour."—P. Capon, Esq., Brighton.

form and colout. — CAVON, ESQ. Progaton.

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"SUTTON'S LATE QUEEN BROCCOLI.—In July last you published a sbort account which I sent you respecting the good qualities of this forecoli. This year it respecting the good qualities of this forecoli order that you may test it.—Thos. Oldman, Friera Watch, Finchley. [An excellent Broccoli, quite free from that bitter taste which Covent Garden Broccoli often has.—Eb.]"—Garden, Mny 20, 1882.

FULL PARTICULARS OF SUTTON'S CHOICE NOVELTIES POST-FREE.



THE QUEEN'S SEEDSMEN, READING,



Gardeners' Chronicle.

SATURDAY, FEBRUARY 16, 1884.

OSIERS.

WHEN, as at present, large numbers of those engaged in the cultivation of the land are at their wits' end to decide what can be grown that will give a fair return for the necessary expenditure, it is well not to overlook what may be termed things that appear of small or secondary importance, as compared with the staple crops that our soil and climate are particularly adapted to produce, and which consequently must ever hold the leading place in the consideration of those whom it first concerns. First concerns, we repeat, for to those who look at all below the surface it must be evident that the community collectively is concerns, and that seriously, when, as it has been recently stated on good authority, farms in Suffolk have been let at 5s. per acre. With such a state of matters, the cultivation of Osiers is a subject not unworthy of the attention of the many who have land that is suitable for this kind of crop, or that could easily be made so. Yet, common as the Osier Willows are, so little is known about them by most people engaged in rural pursuits that the prevailing notion anent them is that a swamp, the edge of a stream, or a water-logged piece of ground is alone suitable for growing them.

Neither is their value as a crop any better understood. Yet, so far as the latter very important part of the question is concerned, we may state that it would be difficult to point to anything that will return so much per acre as a well managed crop of these Willows grown on land that suits them; added to which a plantation, when properly managed, quickly comes into bearing, and lasts many years without renewal. The amount of both top and root growth natural to them requires a good deal of moisture to support it; a cool moist subsoil is what they like, where in dry weather the water present below the surface is constantly rising upwards, so as to be available for their thirsty roots.

Land that is subject for any length of time annually to be covered with water, even if ever so little in depth, is by no means so well adapted for Osiers as such as above described, if only on account of the difficulty existing under these conditions of getting on early in spring with whatever hoeing is required to destroy weeds, which must not be permitted to exist if anything like the best results are looked for. This especially relates to Couchgrass, to the presence of which half the failures in Osier growing are due; neither is this to be wondered at, if a little consideration be given to the impoverishing effects of this worst of land exhausters. It often happens that in determining to make a plantation of Osiers the land has been found unsuited to everything else, and is over-run with Couch, the necessity for extirpating which previous to planting is not recognised; hence the crop becomes half smothered from the first, and never has a chance. In place of this the ground should be completely cleared from this and other perennial weeds before planting.

As to annual weeds, after the first year, beyond a good hoeing or two in spring, at a time when the land and weather are dry

enough to kill the weeds, the crop each season, when it gets fairly into growth will take care of itself by smothering weeds of this character. To insure average crops the soil should be of fair quality and depth, as the weight of produce to be looked for annually is heavy, and consequently requires proportionate sustenance. Extra heavy crops can be grown where a brook or small run of water is at hand that can be turned to account so as to irrigate the land when required, especially in the summer time; but the best results of all are obtainable where sewage can be had. There is no crop that can be put in the land that is naturally better adapted for growing with sewage. As is well known to those who have had to do with this kind of liquid in the usual condition it has to be dealt with, it is so much diluted that to afford sufficient manurial elements to the crops It is applied to, more has to be run on the land than the crops will bear; but with Osiers no difficulty of this kind occurs, for if there is enough fall for the water to get away as it passes through the soil it will do no harm, even if applied to the land at short intervals up to saturation point.

On land so light and dry that otherwise it would be unsuited to the purpose, Osiers may be successfully grown; on light peaty soil, where sewage can be used, they do splendidly. One of the most successful instances in the cultivation of this crop with which I am acquainted is on land of this description, not many years ago reclaimed from its primitive condition. It had been badly farmed, and was in a very foul state; but before planting it was well cleaned from Couch, yet it was as full of seeds of most of the worst annual weeds as bad management could make it. There is just enough natural fall in the land to admit of the water passing slowly away; it was ploughed up in beds about 4 yards wide, with moderately deep alleys between the work was done so as to lay the beds tolerably high in the middle, down which a channel was made to convey the water, which, when running on, is dammed at intervals in the usual manner so as to cause it to flow right and left, when, after percolating through the soil it ultimately finds its way to the alleys between the beds and is thus conveyed away. The land was harrowed before planting, the cuttings, made of the thickest portion of strong two-year-old growth, 18 inches long, were put in early in winter, inserting them half their length, quite upright, 15 inches apart in the rows, and the same distance between the rows. The crop the first summer was three or four to a stool, averaging 6 to 7 feet in height, the second season they were in full bearing, the growth was almost as full as a Reed bed, and 8 to 10 feet in height. They are hand-hoed once or twice each spring to get rid of any weeds that appear until the crop gets fairly into growth, when no living plant could exist under them.

On loamy soils where sewage is not available the plants should stand 18 or 20 inches apart each way, or the land will get exhausted, not having anything to compensate for the heavy yearly drain which a crop of this description subjects it to. On such land, at this distance apart, horse-hoeing in the spring is the best and cheapest, but the work should be done with care, not going so deep as to injure the roots. In this way less hand-work is required, only the spaces between the plants in the rows where the implement does not reach requiring the hand-hoe.

It will do no harm to repeat that clean cultivation is the sheet-anchor to be relled on; suitable soil, with or without sewage, even when well prepared at first, will avail little if the work is not well followed up each spring; the cost of this and cutting the crop is not a serious item, as a matter of course varying according to the

character of the land. A plantation of Osiers will last in a profitable state ten or twelve

Of the two species of Osier Willow, Salix rubra, the red Osier, and S. viminalis, the twiggy Osier, the last in most cases is preferable and yields the most remunerative crop.

A matter of importance connected with the subject is, that if the best results are looked for, the work of preparation and planting needs to be done by experienced hands, for, simple as the operations here detailed may seem, those not fully acquainted with them oftener than not fall short in something that turns out to interfere with favourable returns. For instance, if the cuttings are inserted in a slanting position, when the crop comes to be cut the stools are liable to be half wrenched out of the ground. T. B.



AËRIDES ROHANIANUM, n. sp.

THIS is a grand Aërides. It ranks near to the rare Aërides Reichenbachii, Lindl., but its very long in-florescence is much denser, and the horns in the spur are quite peculiar, and unlike anything that has been seen hefore. I have a representation hefore me-an inflorescence with a leaf. I have not seen such a long leaf, but my dried spindles of inflorescences fully match those in the sketch. Then there is a sketch of a few flowers in water colours. The sepals are said to be white or rose, or rose-mauve, always with a white border. The lacinize of the lip are white. There are two purple lines running over the middle. There are also purple blotches. The central lacinia is nearly rhomboid, bilobed at the apex, with some small crenulations, unlike the teeth in Aërides Reichenbachii. The side lacinize are cuneate and retrorse. The spur is bent forwards, sulphur or orange coloured, with numerous small purple spots. I rely chiefly on the fine characters in the spur. There are two horns, those on the anterior side being nearly hammerlike, dilated and retuse at the apex. Under those horns, just in the middle, a keel runs down. I never before saw such curious bodies in any Aërides among the hundreds and hundreds of flowers I have had under my eyes. The horns of Aërides virens and Reichenbachi are acute. No doubt the species comes from Eastern Asia (ask Mr. Sander, who has been lucky enough to introduce it). It will prove a very desirable addition to our collections. I have three dried inflorescences, a dead plant, with the remnants of four long racemes, fresh leaves.

This grand novelty is most respectfully dedicated to His Royal Highness Prince Camille de Rohan, Prince de Guémenée-Rochfort and Montauban, Knight of the Golden Flecce, the possessor of one of the finest gardens and parks of the world, at Sichrow, in Bohemia, and a most enthusiastic lover and connotineur and collector of plants. H. G. Rohb, f.

Oncidium endocharis, n. sp. "

A curious slender racemo of five flowers, smaller than those of Oncidium brachyandrum. Sepals and petals cuneate oblong acute, the petals a little broader, lateral sepals under the lip. Lip ligulate, expanding at the top, into a rhombic emarginate blade, with two larger lamellæ, and three teeth at the base, which are alternating and superposed to the lamellæ, all of a very bright orange. Column with rhomboid wings and large angles to the tabula infrastigmatica, i.e., the base of column under the stigmatic hollow. It appeared with Messrs. H. Low & Co., and I am told it has the pseudobulbs of Oncidium cheirophorum. Its origin is unknown.

It comes nearest to Oncidium hyphæmatleum, but it is far more tiny, and very distinct in its self-coloured lip, as in the column. H. G. Rehb. f.

CLEMATIS JACKMANNI:

M. LAVALLÉE, the President of the Central Horticultural Society of France, and an enthusiastic cultivator and student of hardy trees and shrubs, of which he has a very fine collection at Segree, has just published a splendid monograph of the large-flowered Clematis, in which we find the following account of the plant known as C. Jackmanoi in gardens. As this account differs very materially from that given by Mr. Jackman, the raiser of the plant in question, we have thought it right to add his original statement:—

Clematis hakonensis made its appearance in our gardens about 1860; the first plant cultivated at Segrez was bought at Angers, and was planted there in 1861. I received two other plants in the following year under the names of C. viticella violacea and C. patens rubra. Some time after the species came into fashion, and its varieties received the names, soon widely circulated, of Jackmanni, rubella, purpurea, hybrida, &c.

Horticultural literature welcomed the newcomer with deserved favour; unfortunately, as its history remained unknown, it was stated to have proceeded from cross-breeding hetween C. lanuginosa, C. Hendersoni, and C. viticella var. atrorubens.* It is not necessary to show how unlikely this triple descent is. When a hybrid plant is successfully raised, that is to say, a product the female parent of which belongs to a different species to that which constitutes the male parent, a plant is produced which is generally sterile, or at least only exceptionally fertile, and then very inconstant. It is, therefore, necessary to multiply such plants artificially either by cuttings or by grafts. As to seeds, if some possess the power to grow, the new individuals do not for the most part remain intermediate, but return to one of their parents, or at least show a tendency to revert to the characteristics of their ancestors. C. hakonensis does not do this—far from it; its seeds are always numerous, germinate easily, or reproduce the species almost without variation. If the newcomers present any modifications it is only in the size or colour of the sepals.

This proof, quite experimental, is, therefore, quite unanswerable; but let us for a moment admit the very unlikely hypothesis of the constant fertility of a hybrid which would then behave like a true species: our Clematis is stated to have proceeded from cross-breeding of C. lanuginosa and C. viticella or C. eriostemon (C. Hendersoni). The last of these species must first of all be eliminated, as it belongs to quite a different section; it is not climbing, produces cylindrical tubular flowers, and differs so greatly in all its characters that it is useless to entertain even for a moment the supposition that it could have had a share in the formation of the flower with spreading segments we are considering, and it will be sufficient to remember the researches of M. Naudin to be convinced of the impossibility of such an association.

As to the two other species, C. lanuginosa and C. viticella, considered as the progenitors of C. hakonensis, we must enquire how their characteristics are reproduced in the newcomer. C. hakonensis resembles C. lanuginosa in the shape and size of its flowers, Its hairy leaf-stalks and peduncles, while the violet or ruddy-violet colour, often more or less blue, of the sepals, is sufficiently like that of C. viticella; but that is the limit to the analogy of these Clematis, and the especial characteristics of our plant are reproduced in neither of these two species, which cannot be considered as intermediate. C. hakonensis attains far larger dimensions than the species to which its descent is attributed, the height of which seemed limited. The segments of the leaves differ in shape, size, and texture; the stamens are erect, and surpass the carpels in size; finally, the reniform achenes, each furnished with a long, persistent, generally erect style, remain characteristic of the new species. It seems useless to pursue this comparative examinanation further, whence it results that, with the exception of the shape and colour of the flowers there is nothing in common between C. hakonensis and the species to which its origin was attributed. If it were possible to retain any doubts as to the specific entity of C. hakonensis, and to still consider it as a hybrid product, this may be removed by studying also the habits of the plant, which differ greatly from those of the species considered as its ancestors. The latter are, in fact, natives of cold or tem-

Oncidium endocharis, H. G. Rohb, f. — (Iotegrilabia.)
"Pseudobubis Oncidii cheirophori; "ratemoţeuui paucifloro; sepalis cuneato-oblongis acutis] tepalis suberqualibus paulo latioribus; labello a basi ligulato antice rhamboideo dilaato caraginato, lamellis in basi rhombeis geminis, denticulo utrique apposito, uno minori interposito; colluma slis ascendentibus rhombeis; fabula utrique appulata. H. G. Rehb, A.

[&]quot; Moore and Jackman, Clematis, p. 9.

perate countries, remarkable for a very intense summer heat, and are only met with in dry, warm places; C. lanuginosa, in fact, grows in the North of China,* and C. viticella in Central Europe.† two plants have so long a period of growth that the first frosts of our countries often find them in full C. hakonensis, on the contrary, easily accomplishes in the course of an ordinary season the several severa have to do with a species belonging to the flora of a country in which the variations of temperature are limited, that it has a climate more or less maritime, or at least rather damp, and in which the heat of summer is never excessive? Thus, I had good reason lor supposing C. hakonensis to he a native of the same country as C. patens, which has, in fact, the same habit, and with which, as we have said, it has probably been confounded. "Les Clematis à Grandes Fleurs," par Alphonse Lavallie, 1884, p. 12.—The following is Mr. Jackman's account of the origin of the plant as given in our columns in 1864:—"I feel hound, for the credit of our firm, to at once commence by explaining the origin, sowing, flowering, and working of those varieties, stating and confining myself unrereservedly to facts as they occurred. Batch of seedlings, No. 1: in the summer of t858, when C. lanuginosa and C. viticella, Hendersoni, and atrorubens were in flower, the idea occurred to me that if I could succeed in hybridising the latter varieties with the former, I should get something distinct in colour and shape of flower. I did so, and the seed ripened was gathered and sown in November. 1858. . . . The seeds did not vegetate in the year 1859, but they came up in 1860, and the young plants were potted off in the spring of 1861, . . . and they flowered for the first time in the summer of 1862, when we selected from among them some of the most rare and distinct varieties." G. Jackman, Jun., Gard. Chron., Aug. 13, 1864, p. 773. It may be added that Hendersoni is supposed to be a hybrid form between C. viticella and C. integrifolia, and that C. atro-ruhens is supposed to be a form of C. viticella. The figure given by M. Lavallée of C. hakonensis is undoubtedly such as to suggest C. Jackmanni before it had been improved by cultivation. It seems quite possible that C. hakonensis may have been unconsciously introduced by Fortune.

BODNANT HALL.

THIS recently built mansion, the country residence of Henry Davis Pochin, Esq., J.P., is situated in one of the most pleasant districts of North Wales (see pp. 209, 213), and commands interesting views of a vast extent of country. It is within easy distance of Llandudno Junction, on the line of railway between Chester and Holyhead. The gardens have been laid out, greenhouses, vineries, and forcing-houses built quite recently; but as the estate comprises some 2000 acres, and as the owner is an enthusiast in gardening, with an accurate knowledge of trees, shrubs, and all hardy plants, it is quite likely that the present extent of pleasure grounds will be enlarged considerably. There are many natural advantages, and these have been made the most of. The ground is undulating in its character, and an ex-cellent trout stream flows through it. The banks of the stream are very precipitous in places, and in others the ground slopes gradually, rising to a considerable height. Advantage has been taken of these natural conditions to form a very pleasant walk on either side of the stream, while trees, shrubs, and hardy flowers have been planted wherever it was thought they would add to the beauty or interest of the grounds.

It would take up too much space to give a full account of all that has been done at Bodnant since it came into the hands of Mr. Pochin; but a few details, a mere outline as it were, may be useful and interesting. Attached to the mansion is a handsome conservatory with a fernery. The latter is quite unique; the internal arrangements are of artificial rock, and mirrors have been placed in suitable positions, apparently increasing the extent of the fernery to a wondrous degree, at the same time great care has been taken to provide for the root-growth of the Ferns and other plants. Foliage Begonias and Panieum variegatum have been used to give variety. The Begonias are exceedingly

It is no great distance from here to the kitchen and fruit garden, and the Peach-house first claims attention. Although the fruit had been gathered at the time of my visit last autumn, the excellent condition of the trees hore witness to the fact that the fruit was of more than ordinary quality. From the Peach-house a door leads into a spanroofed greenhouse, well adapted for the culture of plants; and here they are grown extensively for cutting from. The following flowering Begonias are found very useful to supply cut flowers:-B. parviflora, white; B. manicata, pale rose; B. fuchsioides, rich deep red. A door next opens from here into the early vinery, in which Black Hamburgh Grapes are grown of splendid quality. But the fruit in this house is greatly surpassed by that in the Muscat-house; the Vines are all Muscat of Alexandria, and were bearing a full crop, and many bunches weighed from 5 lb. to 6 lb., while colour, flavour, and size of berry were all that can be desired. I was told the bunches were larger last year; some of them weighed 7 lb. The next house is for late Grapes, and is planted with Lady Downe's and Alicante alternately. One rod is Gros Colmar. Bunches of Alicante weighed from 5 lb. to 6 lb. This house is 40 feet long, the other two 30 feet each. The stove is at the end of this vinery, and I was glad to see some of the old useful flowering stove plants, such as Pentas carnea, Justicia speciosa, &c. Behind this range of houses are the sheds, kitchen and fruit

I have already alluded to the excellent quality of the Apples grown on espaliers, but the Peach wall which divides the garden from the park also shows what can be done when the trees are well cared for and planted in the first place in a well prepared border. It is 9 feet high and 65 yards in length, and planted with the following varieties, viz., Early Beatrice, Early Louise—the first a week earlier, but the Early Louise is the best; Alexandra, Noblesse, Bellegarde, and Princess of Wales; Nectarines, Pine-apple, Elruge and Violette Haive. I did not notice Lord Napier, but this is the earliest and best Nectarine, to come in first.

The range of houses parts the fruit and kitchen garden from the dressed grounds, and the first object of interest is a long and wide Laburnum arcade; the trees are arched overhead, and when in flower must form a striking feature. A large bed is filled with Pæonia moutan edged with hardy Heaths, the latter nearly always in flower. Here also was a great mass of Tritoma Uvaria, with flower-heads 18 inches long by 12 inches round on stout stems 6 feet long; and in the immediate vicinity many fine specimens of Coniferæ
--Retinospora pisifera, and Cupressus nutkaensis. Abies Lowiana is a striking tree, whatever view be taken of its hotanical status; Biota elegantissima Juniperus chinensis aurea, a very beautiful and distinct variety of the species; the young growths were of a bright golden colour, and had a beautiful effect amongst the others. Juniperus japonica aurea is also a very desirable plant, the recently formed branches being very distinct and striking, Retinospora ohtusa aurea gracilis was also noted as a desirable coniferous tree; Cupressus Lawsoniana lutea, planted in the form of isolated specimens in a small geometrical flower garden, exhibited this fine form of the species in good condition. These are merely a few of the most interesting of the Conifera in front of the mansion. Amongst them there are many fine flowering plants and shrubs. Here, for instance, are heds of Tropæolum speciosum, T. polyphyllum, and T. Barlowi, growing and flowering profusely; the last-named is not so well known as it ought to be. It has rich crimson-scarlet flowers, while the leaves are of a distinct bronzy shade over the green. Masses of Leycesteria formosa have an excellent effect from the contrast of the white flowers and the purple bracts.

A bed of Gaultheria Shallon is also very pretty. Osmanthus and Pernettyas form a large and distinct group on the margin of the dressed grounds; there are several varieties of the Pernettyas, and the following Osmanthus are the best, viz., O. ilicifolius. aureus, and variegatus. Garrya elliptica has also formed a great mass; while in another position the Escallonias have an excellent effect, the best being E. macrantha and Philippsiana,

There were also beds, or rather clumps, in suitable positions of Kalmia latifolia and various species of Andromeda, such as A. formosa, A. floribunda, and a species that succeeds A. floribunda in its flowering, A. calyculata. Hardy Azaleas and Viburmum suspensum planted in the same bed have an excellent effect,

We have to pass from the well-kept grounds to the wilder portion by what is termed the Miller's Walk, on the steep and undulating sides of which rock gardens have been formed, and planted with an extensive collection of Sedums, Saxifrages, &c. There were also masses of Heath amongst them the golden-leaved form of Erica vulgaris, with paler flowers than usuals This walk leads over the brook by a rustle bridge, and on the right-hand side of the path there is a large space of very damp ground, on which Leycesteria formosa grows with wondrous luxuriance. As we walk along the banks of the rippling stream interesting trees, shrubs, and flowers meet one at every step. Coniferous trees especially are well cared for, and take kindly to the soil and situation. The Douglas Fir, Abies Douglasil, grows more rapidly than any of the others, but it is not the most handsome tree. and A. Nordmanniana are very handsome, while the tree grown here under the names of A. lasiocarpa and A. Lowlana, was in splendid health. A. Veitchii (true) I marked as a very fine tree; while P. Alcoquiana, with its distinct foliage, glaucous on the under-sides, is the best of the Japanese Spruce Firs. [Probably this is P. ajanensis. Ed.] A. Pinsapo glauca is very distinct, and A. Parryana glauca (Picea pungens) is a new and handsome form of this hardy species. Cedrus atlantica (africana), and a form of it with glaucous foliage, grow very freely indeed; while C. Libani also forms a vigorous speci-The Retinosporas are all here, and all do well ; while the various forms of Cupressus Lawsoniana are equal to the task of forming a pinetum themselves.
A handsome specimen of C. Lawsoniana erecta viridis, 9 feet high, places this form in the front rank.

sliding, 9 feet high, places that form in the riorit rank. Skimmia japonica does better here than I ever saw it elsewhere; Mr. Pochin says it requires a moist bottom, partial shade, but not under the dip from trees. This plant with the oblata form, and many sub-shrubby species and varieties of St. John's Wort (Hypericum), are planted amongst the rocks. The various species and varieties of Rubus (Bramble) beat fruit freely, R. laciniatus is the best of them. The very distinct Artbrotaxis selaginoides does well in a sheltered position, and in good alluvial soil.

fruit freely, R. laciniatus is the best of them. The very distinct Arthrotaxis selaginoides does well in a sheltered position, and in good alluvial soil.

After walking a considerable distance up the stream we retrace our steps on the opposite side, and soon find ourselves in the vicinity of extensive works. Mr. Pochin is building a mortuary chapel on the sloping hillside, and to add to the romantic character of the scenery Mr. Fulham, of Broxbourne, has been called in. Enormous masses of rock have been formed and added to the sloping hillside, not only to partly support the walls of the building, but to form a winding and rugged walk, natural and yet picturesque. Mr. Pulham has finished his part of the work in his usual excellent style, and the gardener has not failed to plant suitable plants, trees, and shrubs where they would add to the natural effect of the whole. Agroup of hardy Heaths near the margin of the winding path is remarkably interesting. The individual specimens are wonderfully fine. The most conspicuous examples are E. codonodes, E. mediterranea, the varieties alba and rubra. E. scoparia, E. stricta, E. cinerca, and the following varieties of E. vulgaris, viz., aurea, "Alportii, and Searlii. Coming bath and rubra. E. scoparia, E. stricta, E. cinerca, and the following varieties of E. vulgaris, viz., aurea, "Alportii, and Searlii. Coming bath and rubra. E. scoparia, E. stricta, E. cinerca and a grand bank of golden Hollies, mostly being about 40 feet. There are also more coniferous trees and a grand bank of golden Hollies, mostly being about 40 feet. There are also more coniferous trees and a grand bank of golden Hollies, mostly sould be supposed to the string shrub, with bold foliage, suitable for covering walls, was amongst them, viz., Schizophragma bydrangeoides. Some of the Japanese Maples were doing when a consideration of the string shrub, with bold foliage, suitable for covering walls, was amongst them, viz., Schizophragma bydrangeoides. Some of the Japanese Maples were doing well against

esteemed.

I am deeply indehted to Mr. Pochin for so kindly showing me his beautiful place, in which he evidently takes no common interest, and it is only right to say that everything is very creditable to Mr. Sanderson, who is very careful, as all good gardeners ought to be, to follow out the instructions of his employer, 7. Deuglas, [For illustrations see pp, 209, 213.]

well adapted to cling to walls and rockwork. Many of the Ferns had grown into very handsome specimens, particularly Asplenium fabianum, Microlepia hirta cristata, Adiantum cardiochlænum, and A. concinnum latum, Dicksonias, Lygodium scandens, and a great variety of Lycopodiums.

JENSEN ON THE POTATO DISEASE.*

I BEG to lay before the Scientific Committee some important observations upon the life-history, the means of its diffusion, and of the prevention of the ravages of the Potato disease, which Mr. Jensen has done me the honour of communicating in a series of letters during the last few months. I would only preface these remarks of Mr. Jensen's by saying that my object is mainly that the Committee may have early information of what has been done in this important field of research, which cannot fail to be highly interesting, not only from a scientific, but also from an economic standpoint. Although so much has already been done in elucidating this subject, yet there are many points upon which we are apt to accept what has become current belief without perhaps fully realising what this belief entails. example, we are too ready to say "heat and moisture" are the two conditions favourable to the spread of the disease, without having any definite idea as to what are the limits of this favourable temperature. Again, we speak of the spawn hybernating in the tubers, but I think few of us have any exact knowledge of how this hybernation takes place, or how long the mycelium can exist in a tuber and still retain its vitality. Judging from what we see of the disease in summer and autumn we are apt to think when once it has established itself in a tuber it will continue to invade it until it becomes a mere mass of putridity. But this is a very erroneous view, for Potatos are to be found all through the winter only partially diseased. We know from the observations of De Bary that a diseased tuber if cut across and placed in a damp atmosphere will produce conidia upon its cut surface as long as the mycelium in it is alive, although conidia-bearing hyphæ are but rarely protruded through conton-tearing nypnæ are out rarely protruoca tarouga, the unbroken cuticle. During the past month I cut several diseased tubers and placed them under a bell-glass inverted over a plate containing water, with a view of obtaining fresh conidia. My object, however, was not attained, for not a single tuber produced conidia, for the simple reason that the mycelium or spawn in them was dead. If the mycelium is already dead in the month of January, what must it be in the month of July, when the disease appears upon the foliage with such dire certainty? is the question which naturally presented itself to my mind. The observations of Mr. Jensen refer to this point as well as to the-

I. RAPIDITY WITH WHICH THE DISEASE SPREADS. -Fifty sound and fifty diseased tubers were planted at Neuilly on May 11, 1883, in close proximity to eight rows of healthy tubers planted on April 30. The fifty sound tubers produced fifty healthy plants. The fifty diseased tubers produced twenty-four plants only, of which eighteen were healthy, and six diseased. The plants appeared above-ground at the end of May, One of the diseased shoots was covered by a bell-glass, when it was found that it took six days for the disease to spread from the lowest to the third leaf. Some of the diseased tubers gave sound shoots, but nearly all the plants from them were very small. In many instances, where no plant appeared above-ground, it was found that shoots had been given off from the diseased tubers, but had not sufficient vigour to reach the surface before they died underground, having been killed by the fungus. When, however, these shoots were placed under a bell-glass they produced conidia. Often shoots given off from diseased tubers appear to be healthy for some time after they have appeared above-ground, but after a time they die, because the base of the shoot has been destroyed by the fungus under-ground. It is obvious, therefore, that a diseased tuber near the surface of the ground is more likely to produce conidia-bearing shoots which appear above-ground than one more deeply planted. Thus, of fifty diseased tubers planted 4 inches deep six gave diseased shoots which appeared above ground, while of fifty diseased tubers planted 8 inches deep only one gave a single dlscased shoot, which reached the surface of the ground. The rapidity with which the disease spreads atfer conidia have been produced above-ground upon the foliage and stem is comparatively slow at first, but, of course, becomes exceedingly rapid by geometrical progression afterwards. The following of the experiment just referred to show this very clearly :- Fifty sound and fifty diseased Potatos were

planted at Neuilly, as before stated, on May 11, 1883, in four rows, 5 inches apart; adjoining these had been planted on April 30, eight rows of healthy tubers, as shown in the following diagram:—

				- 6		•
25 Diseased tubers 25 Sound tubers 25 Diseased tubers 25 Sound tubers	k X X	:	•	*	* 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	Planted May 11, 4 inches from row to row.
Eight rows of sound tubers.	1. · · · · · · · · · · · · · · · · · · ·					Planted April 30, in the ordinary way.

The first diseased shoot appeared on May 29, followed by five other diseased shoots—all, in fact, that were produced from the fifty diseased tubers. It was not until June 12 that the first conidia-bearing leaf was found. Eight days later (June 20) the first diseased leaf was found upon the next adjacent healthy plant (i.e., produced from a healthy tuber). Seven days later (June 27) thirteen diseased leaves were found upon these two plants. On June 28 another of the diseased plants had become a centre of infection, which extended to sixteen leaves. On July 2 the disease was still confined to these four experimental rows. It had only spread 3 feet from these two points above mentioned. The other eight rows (see diagram) had no disease upon any of their leaves.

July 3-A few diseased leaves scattered here and there over the whole twelve rows.

July 14—Disease so advanced as to be observable from a distance.

July 31—Only about 4 or 5 per cent. of leaves left. Up to July 23 no disease existed in the surrounding fields, but six days later (July 29) it was pretty general.

During the time this experiment was being carried on the weather was favourable to the spread of the disease.

Thus, it took from May 29 to July 2 for the disease to spread 1 yard—i.e., thirty-four days; but in twelve more it had become so general in these plants as to be observable from a distance; and in seventeen more the plants were practically destroyed. It should be remembered that the disease did not appear at all in the surrounding fields until July 23, and was not general in them until the 26th.

II. EARLY DISEASE A SMALL CROP: LATE DISEASE A LARGE CROP.—This may seem to be so obvious that it is not worth wasting further time about; but it is true, irrespective of the disease in the tubers themselves, and is brought about by the injury done to the foliage, and is not influenced altogether by the rainfall. It would naturally be thought that an early disease year must necessarily produce more diseased tubers, because they are exposed to the conidia while the skins are young and tender; but this is compensated for to some extent by their being placed relatively lower on the ground than is the case after they have attained their free growth. Thus, in 1877 the disease appeared very early in Denmark, and consequently a very small crop only was obtained, while in 1881 the disease did not appear till late, and a large crop was the result. The rainfall in these years during the months of June, July, and August was not very dissimilar:—

			18	77-	1881.		
June				40.7	mm.	32.1 mm,	
July				88.6	at	74-5 ••	
Augus	t			122.2	19	1124 ,,	
				251.5 Or about	mm. 10 inches.	219.0 mm. Or about 9 inches.	

We must consequently look for some other cause for the earlier appearance of the disease than the mere rainfall. This is to be found in the period at which the disease appeared in preceding years respectively, 1876 and 1880. When a tuber is attacked by the Peronospora early in the year the fungus grows in it with great vigour, and in a short space of time completely destroys it. Those Potatos, however, which are attacked later in the season do not fall a prey so rapidly to the parasite, and those which are attacked later still in the autumn, or in the winter, when the temperature is not too low in the graves for the production of the conidia, do not become thus totally annihilated by the "nycelium, but it remains in them

in a state of quiescence, or hibernation. In 1880 the disease appeared early, and, as a consequence, destroyed the Potatos it attacked-annihilated them, in fact-so that few only were left in which the mycelium could hihernate, therefore only few diseased sets were planted, and, as a consequence, the centres of infection were few and far between in 1881, therefore it was late before the disease seriously damaged the On the other hand, in 1876 the dis-Potato plants. ease was very late before it appeared in Denmark, hence after-sickness was very prevalent in the storepits, and, consequently, many more tubers were planted with living mycelium in them in 1877, so that the starting points were many, hence the general outbreak was early. This is shown even more strikingly by comparing 1873 and 1881. In 1872 the disease was late, and in 1873 it was very early, so that the crop was about half that obtained in 1881, yet the rainfall was less in 1873 than it was in 1881.

			1873.	1881.
June		 	33.0 mm.	32.1 mm.
July		 	72.8 ,,	74-5 11
August		 	81.9 ,,	112.4 11
			187.7 mm. Equal about 7½ in.	219.0 mm. Equal about 9 in.

The disease has, therefore, a tendency to alternate between late and early as regards the general outbreak. Thus in 1867 it was early; 1858, late; 1869, early; 1870, late; 1871, early; 1872, late; 1873, early; 1874, late. Of course this tendency in influenced undoubtedly to a considerable extent by the weather, for in a year in which it should be early it may be retarded by want of rain during June and July, but a late year can never be made very early however much rain there may be. The main cause of an early outbreak, or, more correctly speaking, an early general development of the disease, is the greater number of diseased sets planted that spring than is the case in a late year. C. Plowright.

(To be continued.)

COLONIAL NOTES.

SINGAPORE.—We have received the report on the Botanical and Zoological Gardens for 1882, detailing the work of the year, the most important of which was the relabelling of the plants in the garden, a matter that had, it is alleged, been very inefficiently attended to. The sons of H.R.H. the Prince of Wales, each planted a specimen Martinezia caryotifolia on the occasion of their visit to the garden.

Mr. Cantley has also issued, under date July, 1883, his report on the forests of the Straits Settlements, in which attention has been called to the scarcity of forest and forest produce in the Settlements from want of forethought and reckless felling. A description of the island of Singapore and its physical features is given, including some meteorological details, from which it appears that the highest temperature observed is 91°, the lowest 66°, the relative humidity of the atmosphere (counting saturation as 100°) varying only from 78° to 80°, the annual average being 79°.4. The rainfall averages 91.6 inches per annum, as much as 6.25 inches falling within twenty-four hours, and serving to flush out the drains. No forest rules at all exist in Singapore, and indeed, no timber seems to be now available, as all that is used for constructional purposes is imported from Johor and the neighbouring Dutch islands. Most of the fuel used is also derived from the same source.

MALACCA. — The meteorological phenomena are practically the same as those experienced in Singapore. There are still some 40,000 acres of forest land in the hands of the Government, but the forest conservancy is "as meagre as in Singapore."

PENANG is more hilly than the previously mentioned districts, and more subject to drought, though the annual rainfall is still cited at 107.7 inches, and the mean temperature at 88°, the mean minimum being no lower than 75°.

PROVINCE WELLESLEY, an island separated from Penang by a narrow strait, has a somewhat cooler climate, the temperature having been registered as low as 65° Fahr., though the mean is still 79° Fahr. Mr. Cantley makes suggestions as to the creation of forest reserves, the enactment of a proper system of

^{*} Paper read at the meeting of the Scientific Committee on February τz .

conservancy, and adds a list of the species still remaining in the districts visited by him. The list of timber trees given in one of the appendices is interesting, but unfortunately the number of species, enumerated only by their Malay names, is very large. A Forest Flora would, therefore, seem to be a desideratum.

Çhe Kosery.

A Rose House,—Out of the many glass-houses in the gardens of The Wilderness, Reading, none seem to be of more interest or useful than is a

through the ventilators, which reach from top to bottom of the roof. The heating power is obtained by connecting the pipes with the general system, and, as the area expused to the external air is so small, and the pipes are near the glass, the cost of heating is of the most infinitesimal kind. Specially valuable has the house proved for the storing of a large number of zonal Pelargoniums of many kinds that not only have been blooming finely all the winter, but were a beautiful sight for the time of year when we saw them the other day. The combination of Roses planted out and zonal Pelargoniums in pots for winter blooming is a happy idea, and, indeed, it is somewhat uncommon to find both these summer blooming plants in flower at the

needed, except where in the winter months the water comes near the surface. If the house was of considerable length it might be divided into compartments, with Roses or other climbers throughout, but with the sides filled with Ferns and mosses in one case, with Pelargoniums in another, with Chinese Primroses, Cinerarias, Cyclamens, &c., in another, and so on, thus giving variety in each compartment, and affording a pleasant promenade. The entire absence in such a house of all staging and ordinary fittings would render its enjoyment as a promenade all the greater.

ROSE MERVEILLE DE LYON.—The Florist, in the January number, gives a coloured figure of this beautiful variety, which was introduced by M. Pernet, of Lyons, in 1832-3. Its habit is like that of Baroness



Fig. 38.—Bodnant Hall, eglwysbach, north wales, the residence of H. D. Pocilin, Esq. (see P. 207.)

low span-roof structure that Mr, Lees had put up by a local carpenter from his own plan, and which is chiefly devoted to the growth of Roses. The house is at the base about 10 feet in width, and, there being no sides, the span-roof rises direct from the earth level. To give ample head room the soil has been excavated in the centre to a depth of 2 feet, and a neat pebbled path formed. On either side some stout woodwork, faced with Hazel, forms lower and upper beds; the latter, being some 18 inches wide, are planted with Roses, and the lower ones with various suitable plants, or, as we saw the other day, utilised as stages for numerous plants. The house is ventilated by means of long lights, something on the Paxton principle, so that ample air is admitted when needed. Roses do remarkably well here, as they are trained up the sloping roof on either side, and may be well watered, not only from within, but also

same time in the month of February; for several of the Roses were in good bloom. Tree Carnations being always somewhat lanky in growth also do admirably in this house, for, stood amongst other plants on the lower bed, the blooms come up near the glass, and are good and rich in colour. Lapagerias, both white and red, are doing well in this very temperate house, and so also are other fairly hardy climbers. Mr. Lees finds this simple and cheap house to be of the greatest possible service, and at all times, being some 50 feet in length, it forms an agreeable promenade, but specially so at this time of the year. There are few gardens where such a house might not be found of exceeding service, and it might be even longer, if required, though the width is, for all ordinary purposes, ample. Whilst simple in structure, by dispensing with glass sides, very much of the ordinary cost is saved. Of course, with a floor 2 feet below the surface, care must be taken that the house is well drained, but that precaution is not

Rothschild, and the flowers are nearly white, very large, moderately full, but nearly scentless.

ROSE COLONEL FELIX BRETON, Schwartz, Journal des Roses, January, 1884.—A Rose raised by M. Schwartz, of Lyons. It is a hybrid perpetual with the habit of Charles Lefevre, the flowers large, full, of good form, petals regularly imbricate, velvety crimson, with a violet tinge on the outer surface.

TEA ROSE JEAN PERNET (Fournal des Roses, December).—A seedling from Devoniensis, but with flowers of a clear pale yellow.

HAZEL NUTS, which form an important article of export from Trebizond, are stated in a recent report to be produced in Kerassond of a superior quality to those grown in any other parts of the vilayet. The values of the exports of nuts to Great Britain during the second part of the decade exceed by nearly £9000 those in the former years.

Prehid Notes and Hleanings.

ORCHIDS AT STAMFORD HILL .- The destructive effects of the fogs which prevailed at the end of the year on the advancing buds of Orchids is apparent in Mr. Bockett's collection, which contains a particularly fine lot of well-managed Phalænopsis, a genera that those acquainted with Orchids know to be amongst the first to suffer by these disagreeable atmospheric visitations. There are few Orchids in which the plants feel the weakening effects of bearing a crop of flowers so much as Phalænopsis, hence the loss of the huds has one redeeming feature. Many of the plants are now pushing new buds. Much of the sphagnum is moved from about their roots during the winter, so that there may be less moisture-holding material in contact with them-a precaution that is found to answer at a season when the drying influence of the sun and circulation of the air are at the lowest. The rare P. intermedia Portei was in flower. A row of Odontoglossum Roezlii on a shelf in the same house close to the glass show by their thriving robust condition that light and heat is what they want. The house containing the principal stock of Coelogyne cristata, comprising different forms, which almost fill the centre stage, will soon be a sheet of bloom; many of the plants are very large, and bristling with flower-spikes; they, however, exhibit a good deal of difference in the freeflowering disposition of the different forms. This fine old Orchid is one of the best for winter-blooming, and deserves to be grown in quantity by all who have a cool stove, as it does not like too much heat, and succeeds as well, if not better, amongst ordinary stove plants, where it receives more air than is usually given to Orchids. Nothing could possibly exemplify the better condition in which imported Orchids now reach this country than in time past than a lot of Cattleya Trianæ here, comprising about a hundred plants, which arrived last summer, and have done splendidly; many of the plants are flowering or coming on to flower, with the bulbs and old leaves as fresh and plump as if grown in this country. Mr. Ebbage attaches them to pieces of wood, and as soon as they begin to move hangs them up near the glass; this is a better and safer course with imported Cat tleyas and many other Orchids than putting them in pots. The points of the growing roots of Orchids-are as sensitive as the sight of the eye, and the least movement of the pots or the plants in them endangers the roots which the plants in their first efforts at growth make; when securely fastened to a bit of hard wood the roots attach themselves to it without danger of being chafed or moved about, There is equally less chance of the first roots, which are of such vital importance, being molested with insects when hung up in this way. After the first season's growth the plants, with the wood to which they have fixed themselves, can be put in pots. Amongst the large and beautifully grown lot of Odontoglossums there was an unusually fine variety just opening of O. Andersonianum with the brightest yellow ground in the flowers. The collection of Odontoglossums will shortly be a sight; the size, strength, and condition of the plants is such as to insure their flowering pro-The same holds good with the Masdevallias, the collection of which is extensive and io excellent condition. T. B.

THE NEW HALL HEY COLLECTION .- There were a few weeks ago many things of a most interesting character, either in flower or showing well for bloom, in the Orchid-houses at the gardens of G. W. Law-Schofield, Esq., New Hall Hey, Rawtenstall, Lan-It cannot be said that the Orchid-houses in this establishment, or, for the matter of that, the whole garden itself, is situated in the most advantageous position for the growth and culture of floral varieties. Doubtless years ago the whole neighbourhood could boast of clear skies and pleasant breezes, and if the air was sharp it was free from the coal dust and sooty deposits that are now carried along, and too often left on the roofs of the glasshouses, robbing them of much of the light that is so needful to the growth of all things under glass. In spite, however, of local surroundings, such as tall chimney-shafts, a busy railway station, and trains continually passing within 200 yards of the houses in which some of the plants are stood, the Orchids all through look well, are

healthy and vigorous; and if the flowering of them is the true lest of culture, then we must certainly con-gratulate Mr. Schofield, and his energetic gardener, Mr. T. Wise, on their success. Passing by the early and late vineries, conservatory, Peach-house, and Rose house, we pass into the square where, bit by bit, the present Orchid-houses have been erected. First, a range of low span-roofed houses in three compart-ments were put up, and in due time filled with plants; then two larger span-roofed houses were put up chiefly for Cattleyas; next a low pit was taken for Odontoglossums; and just recently another span-roofed house has been finished, where these latter can receive more light and air than could be obtained in receive more ign, and air man about to consider in the low range of pits. When I say that the floor of this last house is just about level with the roof of the sunk-pit, it will be seen at once that inequalities of surface sometimes have an influence on one's building operations; it will also be admitted that the position now chosen is likely to secure those two most important essentials to the successful culture of this class of plants—light and air. Say what we may about the building of Odontoglossum-houses on the north side of walls in the central and southern counties of Feedand in those localities it way he processory. of England, in those localities it may be necessary, and in some situations success can only thus be achieved; but the Irwell Valley is another district altogether, and there we must endeavour to remove every obstruction to light, and make the most of what we get, for in truth sometimes it is but little. Since the Odontoglossums have been removed to their new the Odontoglossums have been removed to their new quarters they have improved very much, and now are in the way to become strong and sturdy plants, producing, as many have already done, those stiff spikes and round plump buds we all so like to see, In this house I noticed a strong plant of Dendrobium infundibulum with many bulbs 18 inches to 2 feet in length growing as free as any D. nobile, and promising well for bloom. In the Cattleya-house are many fine specimens of such things as Ledia purpurata elegans. Cattleya cripta. Wesrie, also rata, elegans, Cattleya crispa, Warneri, Mossie, also excellent masses of Trianæ, some just opening their flowers. C. Percivaliana was blooming also. A mass of C. Gaskelliana was just breaking with twenty-seven leads, likely to be fine in a short time, Sanderiana and gigas varieties were strong pieces, deriana and gigas varieties were strong pieces, having made fine growths; at present, however, they are resting. The rare C. Schofieldiana, figured and described in the Orchid Album, is here in capital condition, and will soon be breaking. The rare Oncidium hæmatochilum, figured likewise in the same work, is looking well grown in a basket. Some excellent plants of Lælia autumnalis, albida, and anceps were flowering, the Barkeriana variety of the latter being very dark and fine. The chaste L. anceps Hilliana was also flowering. This is here pure white, with a yellow throat, and a light purple lip, with white margin—certainly a nice and pleasing variety, white margin—certainly a nice and pleasing variety, Several Oncidium Forbesii were in flower, so, too, was Sophronitis grandifora on a block, with fifteen of its showy scarlet blooms. Several D. Ainswere in excellent health; and the same may be said of many other of the Dendrobiums. The neat japonicum, with its pure white flowers, and sweetlycented withal, was very interesting. Another rare cendrobe in flower was Veitchianum (macrophyllum scented withal, was very interesting. Another rare Dendrobe in flower was Veitchianum (macrophyllum as it is now designated). This is a very distinct species, bearing erect spikes of flower, which are of a greenish-yellow; the lip, too, is of the same colour streaked with purple. The stem of the bloom and the back of the sepals are covered with numerous the country of the same that he are the spike a singular than the spike a spik the back of the sepals are covered with numerous fleshy hairs, which give the entire spike a singular and distinct appearance. D. crassinode and D. Wardianum have made strong bulbs, and soon will be clothed with their rich and showy blooms. Of D. moniliforme there is one of the finest plants to be seen anywhere; it has been in flower just a month, and has lost a little of its freshness, and though some blooms have been taken off, it is now a mass of flower. There are over thirty flowerine bulbs. mass of flower. There are over thirty flowering bulbs, some having twenty and twenty-two flowers on them. some having twenty and twenty-two flowers on them, The whole display of 400 blooms is quite a picture, and one that is calculated to give a thrill of pleasure to all true lovers of Orchids. The D, devonianums promise to be equally good. One plant has thirty-five flowering bulbs just showing the flower-buds; another has fifteen flowering bulbs, 2 to 4 feet long; whilst a strong plant, less in bulk, has seven new bulbs just over 4 feet in length, and stout in proportion. These in about two months' time will be worth going to see. Cymbidium Lowii was in good health, showing Cymbidium Lowii was in good health, showing flower. Saccolabium violaceum was flowering well This is a most desirable winter Orchid, retaining its This is a most destrable winter Orchid, retaining its flowers quite fresh for a long period: eight to ten weeks is not at all an unusual length. An imported V. Sanderiana has recently been added to the collection, and though at present it is not making any new roots, it has improved in colour, and looks hopeful and promising. Phalenopsis on cylinders are just starting away—several plants of P. Stuartiana were in flower. The many forms of Cypripediums were looking well, and Odontoglosum Roezlii and O. vexillarium in a warm division were growing freely, and already a few were showing flower. W. Swan,

The Fitchen Garden.

SEED SOWING, &c .- The Onion crop, as a rule, succeeds Celery, therefore no time should now be lost in taking up the latter and laying it in as deep as before in another border, alter which the ground should be well dug, and if necessary, manured. The ground should be trodden closely all over when sufficiently dry to prevent its adhering to the feet, raked and made level with a wooden rake, and then rolled with a light roller and again raked, this time and subsequently with an iron rake, the ground having first received a good surface-dressing of dry soot and wood-ashes, after which the drills can be drawn I inch deep and I foot apart, and the seed be sown thinly and evenly in the drills. The soil should then be closed in over the seed with the feet, and again trodden over each individual row and rolled, and finally raked over in the same direction as the drills, so that the bed when finished may present a fine, firm, and even surface. As to varieties, of which I gave a list at p. of the current volume, I would remark that the keeping varieties and those which are grown chiefly on account of their fine size and for autumn use, should be sown in proportion to their keeping qualities, and a few rows of the Queen or Early White Naples should be got in to succeed the autumn-sown ones. A few beds of the silver-skin variety, for picklers, should also be sown thickly broadcast on a poor, dry, and shallow soil, to prevent them growing too large. Carrots and Parsnips should also be sown as soon as the condition of the ground will permit of the work being done in the same manner as recommended for Onions, except that the rows should be further apart-that, is from 15 to 18 inches apart. It will be advisable to make two sowings of Parsnips (of which the Hollow Crown and Maltese are good varieties), one at the end of this month and the other about the end of April. Another sowing of Early Nantes Horn Carrot and Turnips (Early Purple-top Munich and Early Snowball) should be made adjoining those previously sown. A small sowing should also be made in a sunny horder of the following seeds, namely:—Wheeler's Imperial Cabbage (or any other good early variety), Early Ulm Savoy, Brussels Sprouts, Leek (Carenton or Musselburgh), Green and White Paris Cos Lettuce, and Grand Admiral Cabbage Lettuce, round-leaved Spinach (a row between the early Peas), and Early White and Scarlet Turnip-rooted Radishes the latter under a south wall between the trees. soon as the Cauliflower and Lettuce plants, which should now (excepting those intended for early use) be all planted out as recommended in a previous Calendar, the cold pits these occupied should be got ready for and planted with some of the early Kidneys, taking care that the young shoots are not broken off in the operation. In favourable weather plant out Shallots, Garlic, and Chives, in beds 4 feet wide, with an alley between each bed, in rows 9 inches apart and 6 inches in the row, which will give five rows in each bed. The surface of the beds should be even and firm, over which some woodashes should be strewn, and then be patted down with the back of the spade, and the Shallot bulbs planted by pressing them barely under the surface, and the Garlic and Chives 2 inches deep; the bottom of the alley (which should be neatly cut) should then be made level.

RHUBARB, SEAKALE, AND JERUSALEM ARTI-CHOKES .- Where large quantities of Rhubarb roots are taken up annually for forcing it will be necessary to make fresh plantations every year, by dividing the roots and planting the divisions with the buds a couple of inches under the surface in rich deeply trenched ground—the soil being rather light than otherwise-in order to maintain an adequate supply of good established roots for the purpose; thereforeadvantage should be taken of the present open weather to get this done, together with the overhauling and replanting of the herb borders, and any other operation that will be as well done now as a month later. In covering Rhubarb and Seakale crowns place a number of Rhuharh pots over some of the hest established plants of a good early variety, in the case of the latter, and, if necessary, cover them with stable litter, a little of which should also be shaken over the remaining crowns, to protect them from possible injury by frost. We cover rows of Seakale

with boxes 8 feet long, 9 inches deep, and of about the same width, which are made as follows:—Two boards, of the dimensions above given, and two end pieces—the latter an inch higher than the sides, to keep the lid in its place—are nailed together, and a board of the proper length and breadth placed upon the top as a lid. These boxes are then covered over, and the space hetween them filled with decayed leaves, so as to exclude light and air from the interior of the boxes. We thus are able to obtain Kale of the best description—short, thick, and crisp. Plant Jerusalem Artichokes in rows 2 feet asunder and 1 foot in the row, in good ground, having an open situation. A field is the best place for this crop.

FORCING DEPARTMENT.—Sow in pots any kinds of Capsicums, placing the pots in a warm frame near the glass, and pot them off singly into small pots as soon as they are large enough to handle, returning them to the frame when done. Celery plants, too, when large enough, should be pricked out in rich finely-sifted soil 4 or 5 inches apart in a frame near the glass or in pots and boxes. If the latter are more convenient and placed in a similar position, and then watered through a fine rose to settle the soil about the roots of the plants, the plants must be shaded from the mid-day sun for a few days until they have rooted, and sufficient air be admitted to the frame to prevent the plants making a weakly growth. As the plants increase in growth so also should the ventilation be increased, and subsequently the sashes should be titled up at eight preparatory to the plants being planted in the treaches in due time. Seed of the Trophy Tomato should be sown at the eod of the present month for outdoor culture, as also Marjoram and Basil. H. W. Ward, Longford Caule, Wills.

FRUITS UNDER GLASS.

PINES.-The winter season so far has been a most propitious one to the Pine grower; recourse to hard firing, which causes an unhealthy parched atmosphere, and fluctuations of hottom-heat, has not been requisite, so that it has not been an arduous task to preserve the plants in the best possible state. Young plants rooted last autumn should now be shifted into fruiting-pots of 12 inches in diameter efficiently drained. In potting place a layer of dry moss coated with soot over the drainage, and use the soil recommended in a former Calendar io a warm, rather dry, and moderately rough state; remove the bottom leaves from the plants, as well as the inert soil from the surface of the balls, place the plants sufficiently deep in the pots to insure their firmness, and as the best results are derived from firm potting give particular attention to this by well ramming the soil. As the work proceeds a second mao should receive and plunge the plants 2 feet apart each way if space admits, keeping the pots perfectly level, and closing the material tightly around them. Maintain a hottom-heat of 85° to 90°, and a night temperature of 65°, with corresponding warmth and humidity during the day; endeavour to secure a sturdy growth by carefully ventilating on every favourable opportunity, and, above all things, guard against over-watering the plants. Suckers of Smooth Cayenne and Charlotte Rothschild on the winter fruiters and old stools that are large enough should be potted into 6 or 7-inch pots, and, if allowed a brisk hottom-heat and a warm moist atmosphere, they will root freely, and soon become fit for their fruitingpots. The plants in the early house will he commencing to show their fruits; the temperature should, therefore, be increased, that for the night to 70°, with about 5° more in the day from artificial means; admit air on sunny days when it reaches 80°, and close early with a high temperature, which will cause the plants to raise their fruits well out of the foliage, at the same time damp with tepid rain-water hetween the plants and among their bottom leaves. While using moisture in moderation, see that it does not rest around the young fruits. Water regularly as required, employing Peruvian guano and sheep manure-liquid alternately, of moderate strength, and at a temperature of 85°. Voung fruits intended to ripen their fruits next winter should receive liberal treatment to induce strong growth. A second house may be started the end of this month, which, if composed of the varieties recommended in the issue of January 5, will give a lengthened succession of fruits,

VINES,—Where Vines are to be planted this spring the borders may now be prepared for them. Perfect drainage being one of the primary essentials to success, it should receive thorough consideration; and another matter of first importance is the compost, and for this nothing is better than tolerably heavy turfy soil stacked long enough for its verdure to have decayed. This should then be mixed with a fair sprinkling of charred wood, hones, and old mortar well reduced to a moderately fine state; these ingredients, however, are not absolutely necessary. Our horders have no hones in them, and are all either entirely inside or outside—the early and late Vines being confined to the former, the mid-season ones to the latter. In wet, cold districts, where a heavy soil (the best for Vines) is employed, I would especially recommend this practice, and that of planting for all purposes in side, providing sufficient water and labour are at command to meet all requirements. Internal horders may be advantageously made 3½ feet deep, but for outside ones shallow ones are certainly best. In forming them the piecemeal principle should always be adopted, the soil should be dry and coarse, and made firm by treading each layer from the bottom to the surface. The present is likewise a good time for making additions to incompleted borders of Vines that are now at rest. Late houses containing such kinds as the Alicante and Almwick Seedling, also the Lady Downe's house, should be closed towards the end of this month, in order to have their fruit well impened and wood matured early in the autumn. Another successional-house, comprising Hamburghs, Foster's Seedling, and others, should also be closed at the same time. Gentle fire-heat should be allowed where fermenting material is not used, the rods regularly damped over with chilled water several times daily, and where there are young ones bring them into a horizontal position, and in doing so see that the rows of huds are level with each other, as when one is over the other the uppermost buds break first and strongest, to the detriment of the others. Moisten internal borders, if dry, with tepid water; those that are outside should have been protected with thisk, fram coatings of leaves and covered with shutters in the autumn.

STRAUMERRIES.—The forcing of these should be still followed in a mild form, for however satisfactory other conditions are, the Strawberry in its early growth with undue haste is not followed by good results. With correct treatment the blossoms and leaves advance simultaneously and closely, and when not it may be concluded that excessive heat has been employed. Afford plants in all stages as much light as possible by keeping them near the glass, which should be kept clean; and for those in blossom such treatment as will ensure them being dry for some time in the middle of the day, so that successful impregnation may occur. When the blossoms fall, thin the fluits, reserving the best for the crop, and move the fluits, reserving the best for the crop, and move the fluits, reserving the best for the crop, and move the front ventilators, and increase it from the back sashes early on favourable days, and make the most of sunny weather by closing early and well syringing the plants. Arrange the plants on shelves without crowding, with their fruits supported, and fully exposed to the sun, and place a thin, porous turf under each pot; this is a satisfactory old practice, as the roots readily seize on the turves, and greatly support the plants. Attend closely to watering, using tepid liquid manure, made of sheep's dung and soot, in a mild state, alternately with that of guano. Put successional batches of plaots in quantities as required, into heat, using up the early varieties first. Furnificate on the first appearance of greenfly; kept independent of the sun more of the syringe, and look out for worms in the pots, applying lime-water to dislodge them. Thos. Coomber, Hendre Gardens, Monmouth.

Plants und thein Sultune.

REPOTTING STOVE PLANTS .- It will be necessary to proceed with this work now, without much longer delay, in all cases where an average stove temperature is maintained. In the event of the stove plants being kept at the lowest possible point in temperature, with due regard to safety, this indispensable operation of every spring can with advantage he deferred a few weeks longer, when, from the greater influence of the sun and the lengthening days, vegetation will be more active. No pains should be spared in the preparation of the soil suitable for the several sections of plants that are cultivated. Due regard to this important point will greatly facilitate future successful culture. All peat of a close, adhesive character should be discarded, the small quantity of fibre in such as this will rapidly decompose after a few waterings, leaving the mass of soil both sour and inert; in this the roots cannot be expected to thrive. Just when the plant is reasonably expected to be making progress in the new soil the vitality of this latter is all but exhausted. As with peat, so also with loam, of which, if any doubts

are entertained in regard to its suitability, it had better be laid aside for more common uses. We prefer loam of a friable character, not too light not too heavy, but with a good amount of fibre. The top spit of a good pasture that does not retain an excessive amount of moisture, will be found the best. As we cannot obtain just what we should like at all times, it is advisable to have a bag of charcoal at hand, which, with the assistance of some crocks broken up small, will greatly aid in keeping the soil open and sweet. The charcoal will absorb impuritise healthe being a most effective fetiliser.

open and sweet. The charactan will assorb impurities, hesides being a most effective feitiliser.

A good stock of leaf soil is a valuable axistance to the cultivator, when it can be obtained from such deciduous trees as the Oak and Beech. In the case of a miscellaneous collection of decomposed leaves from shrubberies, it is necessary to be somewhat cautious. When the leaf soil is not to be relied on, it will be a better plan to use a greater quantity of peat. Some spent Mushroom bed maoure, when tairly dry, will be suitable for mixing with the soil for Caladiums and other rapid growing plants—any plants in fact that are annually divested of the soil in which they have been grown will succeed better with the addition of such-like materials. The object being to extract as much plant food as possible during the one season, necessitates the mixtures of soil being made accordingly. Where convenience of storage under cover exists, it is much the best plan to keep a good stock of each requisite, so protected. The soil will handle better if a little on the dry side, besides being more congenial to fresh root-action. We prefer to do the greater part of the reporting of stove plants in the house, rather than removing them to the potting-shed at this season of the year. Should the same, however, join the stove it is not of so much importance; better still if the shed is heated with hot water, then all syringing and cleaning can be done herein without causing any obstruction in the house itself. This work should be expedited as much as possible when once taken in hand, therefore have a good number of flower-pots prepared with drainage that has been once taken in hand, therefore have a good number of flower-pots prepared with drainage that has been once taken in hand, therefore have a good number of flower-pots prepared with drainage that have been once taken in hand, therefore have a good number of flower-pots prepared with drainage that have been once taken in hand, therefore have a good number of flower-pots prepared wit

pared. Any modifications that are used to proceeds.

Firm potting is to be recommended in the majority of cases; the growth made at first may not be so rapid, but more permanent results will ensue as the season advances. Do not pot plants just for the sake of potting them airesh if they do not require it; better pass them over for a time. Any plant that has seen its best days had better be consigned to the rubbish-heap to make room for vigorous young stock. In the case of plants that are easily grown, it is a waste of time to nurse up old, decreptid specimens, Of course this does not refer to large stools of such as the Eucharis and Anthurium Scherzerianum, which can be broken up for stock when of great size. About a year ago we shook out some of the former that had been standing for some years in the same pots. They were divested of nearly all their soil, what few roots remained clinging to each bulb were preserved; and theo, after an assortment into different sizes had been made, we repotted all that were worth keeping, thereby gaining several pots to our stock. The bulbs having become excessively crowded had no further room to develope themselves, being packed one on top of the other; the shaking-out process was therefore the best thing to do. Each of this stock is now in full vigour again, having also yielded an abundant supply of flower-spikes. Those who have any Eucharist that have become unhealthy had better proceed in a somewhat similar manner. The addition of bottom-heat would be of service to encourage fresh root-growth when plants are not in good health. In poting Palms use soil chiefly composed of turfy loam, with a little peat mixed with it. In the case of large specimens a little bone-meal or half-linch bones is of great assistance. With specimen Crotons also the loam may predominate, but, on the other hand, the Marantas thrive best in a compost of nearly all peat; Loras and Dipladenias prefer peat alone. Whilst the potting operations are about, the woodwork and plants, and slightly raise the day

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY, Feb. 18 Sale oil lilium auratum Bulbs, at Stevens' RTUESDAY, Feb. 10 Sale of Nursery Stock at Whittle's Nursery, Wallsam Green, by Frothero & Morris Sale of Nursery Stock at Ewing's Nursery, Stock at Ewing's Nursery, Stock of Nursery Stock at Ewing's Nursery, Stock of Nursery Stock at Ewing's Nursery, Stock of Imported and Established Orchids, at Stevens's Nooms.

La Sevene Toome.

A Sevene Toome.

Linean Society meets at 8 R.M. Papers to be read:—1, "West African Cyperace."

H. N. Ridde, 2, "Penetration of Ani-H. N. Ridde, 2, "Penetration of Ani-H. N. Ridde, 2, "Penetration of Ani-H. S. O. Ridde, "Carrain on Structure of Coral," S. O. Ridde, "Carrain in Structure of Coral," S. O. Ridde, "Carrain on Structure of Coral," S. O. Ridde, "S. O. Ridde, "S.

A SUBSTANTIAL balance in hand is such an unusual feature to be announced at the ANNUAL MEETING of the ROYAL HORTI-CULTURAL SOCIETY that it might be held to cover a multitude of defects. The explanation of the circumstances under which this result has been obtained is, however, not quite so satisfactory as could be wished. It arises almost entirely from the successful results of the Fisheries Exhibition last year—a result which was sufficiently surprising to those who remember the ill-success of the former annual exhibitions, and who look forward somewhat doubtfully as to the repetition of the experiment this year. While gratified at the fact that the Society not only starts free from debt, but with a substantial balance in hand, the Fellows may well look to the future with some apprehension. We do not much heed the interruption of some disappointed debenture - holder who asked a disagreeable question at the meeting, because it is by no means clear that the Society was even morally responsible to the debentureholders, and indeed the law courts have in substance decided that it was not. On the other hand it is certainly to the credit of the Society that they should have fought the battle of the debenture-holders and not only been mulcted in the sum of some nine hundred pounds for their pains, but actually deprived of all the property upon which the debentureholders could fairly rely for the satisfaction of their claims. Under the circumstances the President was quite justified in considering the debenture-holders as defunct, though that statement is a little inconsistent with the fact that the Society has succeeded in obtaining privileges for that body to which it appears they have no legal right whatever. Letting that matter pass, however, it can scarcely be said that the position of the Society is a satisfactory one : but now that, as we ventured to prognosticate last year, the Society has passed its lowest ebb and is at any rate in a better financial position than for many years past, we may trust that the Council will take heart of grace, and do their utmost to put the Society in a more satisfactory state. They hold their present cramped position at South Kensington on sufferance, and have not even a corner which they can call their own. It may be well for the present to make the best of circumstances as they are, particularly as they involve no payment for rent, but the Council will not be doing their duty if they do not look forward, and do their utmost in the direction hinted at by Lord ABERDARE of procuring a suitable habitation for the Society. A convenient office for business purposes, a meeting-place for the committees, a locality for the larger exhibitions (for which Kensington is perhaps the best available), a home for the library, and a readingroom for the Fellows, are all desiderata of the greatest urgency. The present arrangements, if possibly the best that can be attained under existing circumstances, are all so thoroughly bad and inefficient, that no effort should be left untried to ameliorate them when opportunity offers.

The evening meetings, upon which so much stress was laid in the report, furnished at least an indication that public support would not be wanting were a resolute attempt made to carry on the Society's proper work in a fitting local habitation. It is abundantly clear that the Society can still command the willing services of the best practical gardeners and the leading scientific men. The material is to hand; the defect appears to be in the spirit to turn the material to account. We regret to see at present no effort made to secure the support and co-operation of that vast body of horticulturists in the provinces who still look up to the parent Society, and who would assuredly respond to its call were it made in no uncertain manner. The proof of this was furnished by the unprecedented success of the Apple "Congress," and by the universal feeling of approbation of what is done at Chiswick.

Not one word was said in the report or at the meeting as to the suspension of the publications of the Society, and, indeed, it must be admitted that the want of interest taken by the Fellows when the Journal was issued with less or more regularity is not very encouraging. Still, we cannot but think that were the Fournal put upon a proper footing, the reputation of the Society would be greatly enhanced. reports of the trials at Chiswick, and the proceedings of the practical committees, have hitherto lost their value from the irregularity and tardiness of their publication. Again, the subjects brought before the Scientific Committee, from their number, variety, and importance, would alone suffice to keep a society afloat, but under the present arrangements they command the respect only of the limited few who are in position to judge of their value, and are to those who, from want of knowledge of what is really done, little more than subjects of jest-jest that is really unfounded we grant, but which is quite natural under the circum-

Among matters of first-rate importance which the Society has the means now to elucidate we may mention three-the report on the effects of the severe winters of 1879-1880, and 1880-1881; on the Apple Congress; and on the Jensenian method of protecting Potatos from disease. We might mention many others, but these three will suffice for our purpose. The report on the effects of the severe winters was obtained by inquiries made throughout the country, and a vast body of information was collected which, if properly digested, would be of incalculable service. In the meantime, not only is it lying dead, but those who were good enough to furnish the desired information are naturally irritated that their services should be held in so little esteem. Supposing that in future any similar inquisition should be desirable, what chance is there that gardeners and others would be found willing to contribute their experience? The report of the Apple Congress is, we believe, in the hands of Mr. BARRON, and no more competent could be found; but what encouragement is there to go on with such a laborious undertaking? Still, it is one of so much general interest that we cannot imagine the Council allowing it to suffer the fate of the report on the effects of the frost, Third on the list come the questions connected with the spread of the Potato disease, and the alleged methods of preventing its ravages. What more important and practical subject agitates the minds of cultivators at this moment? What subject is there that could be more fittingly tested than by means of the members of the Scientific Committee, and the practical tests that could be so readily carried out at Chis-

Verily, in the face of such matters as these, the award of unnumbered Certificates to new Pelargoniums, trifling varieties of Odontoglossum crispum, and the like, seem very petty

We are far from denying their value; but there is a sense of proportion which neither Fellows at large nor Council seem at present adequately to recognise. The Society is, it is said, in a transition state; let us hope that the transition will be towards the realisation, not of individual commercial advantages and personal fancies, however innocent and attractive, but of those larger national interests which the Society was established to promote.

- EXTRAORDINARY TITHES. -At a large meeting of Hop, fruit and market gardeners, held at the Bridge House, London Bridge, on Monday, Mr. BOLTON in the chair, it was unanimously resolved:— "That the Government be urgently solicited to redeem the promise made by Sir W. HARCOURT in the House of Commons last session, by bringing before Parliament a measure to abolish extraordinary tithes as soon as posssible."

M. RODIGAS. - The Government of Venezuela has conferred on our confrere the decoration of Chevalier of the Order of the Liberator. M. Rodi-GAS amply deserves every recognition for his industry and zealous devotion to horticulture and natural

— MR. M. SAUL is, we regret to hear, leaving Stourton Park, Knaresborough, where he has been Gardener for the long period of thirty-seven years.

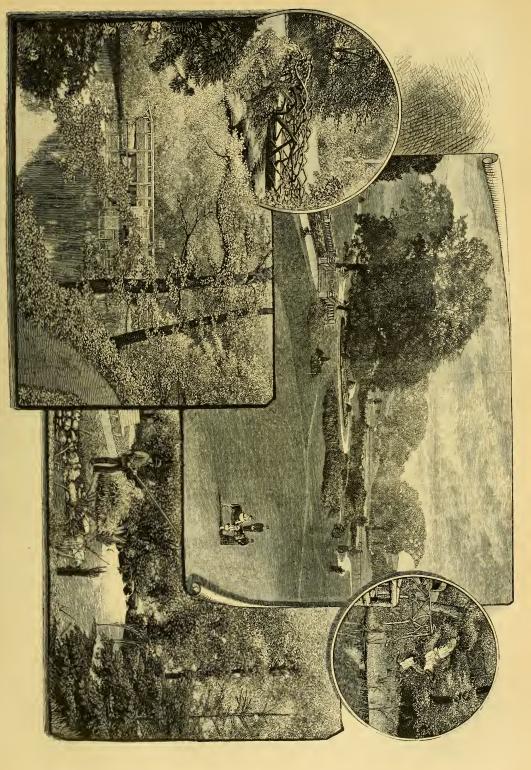
"THE FLORA OF BRITISH INDIA."—We are glad to be able to announce the publication of the eleventh part of this very useful and important publication. The present part includes the remainder of the Scrophulariaceæ and the Orobanchaceæ, by Sir JOSEPH HOOKER; the Lentibulariaceæ, Gesperaceæ, Bignoniaceæ, Pedaliaceæ, and Acanthaceæ, by Mr. C. B. CLARKE. It will thus be seen that the work is making substantial progress, and its utility is such that we trust every means may be taken to advance its completion. We are now within measurable distance of the Orchids, and we need not say how serviceable an authentic descriptive catalogue of those plants will be.

- Double Hellebore, -Mr. Koeppen, gardener to OTTO FORSTER, Esq., kindly forwards us a semi-double flower of Helleborus niger, which he found wild in the neighbourhood of Scheibbs, Lower Austria. The stamens are replaced by white petallike bodies, and there are various changes between stamens and nectaries which necessitate further examination.

THERMOMETERS .- The Council of the Royal Meteorological Society have arranged to hold at 25, Great George Street, S.W., on the evening of March 19 next, an exhibition of thermometers, and invite the co-operation of makers and others, that as large a collection as possible of such instruments may be exhibited. The committee will also be glad to show any new meteorological apparatus invented or first constructed since last March, as well as photographs and drawings possessing meteorological

- New Commercial Plants and Drugs. Mr. Christy, 155, Fenchurch Street, has published the seventh part of his periodical under the above title. Among the plants mentioned in this number are Cinchona Ledgeriana, Theobroma Cacao, Acacia arabica, Siam benzoin, Pepper, Nutmeg, Indiarubber, Menthol (Mentha arvensis var. piperascens), Liberian Coffee, Conocephalus niveus (the tough fibre of which is used in Ceylon for fishing lines), Boehmeria nivea (Rhea). The object of the publication is to diffuse information and stimulate inquiry as to plants useful in agriculture or commerce in all countries.

- ALLIUM OVIFLORUM .- This is a remarkable bulbless species, with very narrow, Leek-like leaves, surrounding a central angular scape, which hears at the summit an umbel of small, dark lilac, bell-shaped, nodding flowers, each rather less than half-an-inch in length. The stamens are filiform, longer than the perianth; the lobes of the ovary have two tooth-like projections at the upper edge. This species was in-troduced by Mr. ELWES from the Chumb range, between Tibet and Sikkim, and was described for the first time by Dr. REGEL in the Gartenflora, t. 1133.



- THEY ARE COMING !- Messrs. BARR & SON sent us last week the advance guard of the army of Narcissus, which they marshal before us every year. The first is a Daffodil with very pale segments and a light primrose-coloured crown of equal length; or it might be said that while the crown was sulphurcoloured the segments were the colour of flowers of sulphur! It is a very refined-looking flower, and the earliest of its race to bloom. It is, we are informed, not yet in commerce, and we hope before it gets into the catalogue Messrs. BARR will be good enough to relieve it of some, at least, of the four or five appellations under which they send it to us. the case of garden varieties like this an English name would be preferable. The other forerunner of spring is the beautiful Narcissus monophyllus, with its elegant white flowers, which have had merely the protection of a light to preserve them from being soiled by rain.

—— ROYAL METEOROLOGICAL SOCIETY.—At the ordinary meeting of the Society, to be held at 25, Great George Street, Westminster, on Wednesday, the 20th inst., at 7 F.M., the following papers will be read:—"The Great Storm of January 26, 1884." By WILLIAM MARKIOTT, F.R.Met.Soc. "The Height of the Neutral Plane of Pressure, and Depth of Monsoon Currents in Iodia." By Professor E. D. ARCHIBALD, M.A., F.R.Met.Soc. "On the Sunrises and Sunsets of November and December, 1883, and January, 1884." By the Hon. F. A. ROLLO RUSSELL, M.A., F.R.Met.Soc.

- THE OXFORD PROFESSORSHIP OF BOTANY .-Dr. BAYLEY BALFOUR was on Saturday last appointed Sherardian Professor of Botany. In 1879 Dr. BAL-FOUR was elected Crown Professor of Botany in the University of Glasgow, and is son of the Regius Professor of Medicine and Botany in the University of Edinburgh (whose death, only a day or so after the election of his son at Oxford, we regret to have to announce in another column). Dr. BAYLEY BALFOUR Doctor of Medicine and Gold Medallist of the University of Edinburgh; be took first-class honours in botany, and has had practical direction of the affairs of the Glasgow Botanic Gardens and Herbarium. Io 1874 Dr. Balfour was appointed by the Royal Society Botanist and Geologist to the Transit Expedition to Rodriguez, and in 1880 he made a scientific exploration of the island of Socotra. There were six candidates, and the electors were Sir John LUBBOCK, Professor BABINGTON, the President of Magdalen, Professor BARTHOLOMEW PRICE, Professor MOSELEY, the Bishop of WINCHESTER, and Sir JOSEPH HOOKER. The duty of the Professor is to lecture and give iostruction in botany. He will also have charge and supervision of the Botanical Gardens and of the botanical collections belonging to the University, and it will be part of his duty to make the gardens and collections accessible to and available for the instruction of students attending his lectures. A Fellowship in Magdalen College is attached to the Professorship. The Professor will be entitled to the emoluments derived from the benefaction of W. SHERRARD, Doctor of Civil Law, and assigned to the Professorship, and also to the emoluments appropriated to the Professorship by the statutes of College. The combined emoluments of the offices from these sources will be £500 a-year. The Professor will be subject to the statutes of the University in regard to the Professorship, and to the statutes of Magdalen College in regard to the Fellowsbip. The Professor will also receive £200 a-year out of the Common University Fund, provided that he conform to the particular regulations to which the Professors are subject. A residence is provided for the Professor in the garden, rent free.

—— UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.—The annual meeting of this Society, which was established in 1865, took place at the Caledonian Hotel, Adelphi, on Monday evening last, Mr. RICHARD DEAN, of Ealing, in the chair, when there was a numerous attendance of members. The report of the committee and balance-sheet was most satisfactory, the Secretary stating that if it were necessary to bring the operations of the Society to a close, and every penny due to the members was paid, there would remain a sum of £150 over and above what was required, leaving the benefit fund, which amounts to over £1000, untouched. There is now invested in Consols the sum of £269 12s. 6d., in cluding stock to the value of £216 15s. 5d. purchased

during the past year. The Secretary stated that when he was first elected to this office in 1872 there were but sixty-six members connected with the Society, that in December, 1883, the number had risen to ninety-two, and there are now 150 members, a considerable accession having recently taken place owing to the publicity given to the operations of the Society. The Society has been working quietly for years past and certainly prospering; but it has not made itself sufficiently known. It is now proposed to remedy this by issuing a number of copies of the annual report and balance-sheet to gardeners eligible to become members. The Hon. Treasurer is Mr. James Hudson, The Gardens, Gunnersbury House, Acton; and the Hon. Secretary Mr. J. F. McElroy, The Gardens, Moray Lodge, Campden Hill, Kensington, of whom all necessary information can be obtained.

- BROMELIADS .- The zeal with which Bromeliads are cultivated on the Continent is exemplified by the publication of which we have now the first part before us—Allas zur Phylo-Iconografhie der Bromeliaceen des K. K. Hofburggartens, von Franz Antoine (Vienna: Gerold). It is a folio work, to be devoted to the illustration and description of the plants of this order grown in the Emperor's garden at Vienna. The author is Herr Antoine, whose competence in the matter has long been beyond dispute. The Imperial Court Garden contains one of the richest collections of these plants in existence, and during the last ten years Herr ANTOINE has been collecting drawings of all the species as they flowered. Only fifty copies are to be put into publication. The plants are lithographed of life-size from drawings by the author, the flowers and portions of the foliage being coloured, the remainder uncoloured. The plates will be accom-panied by a text in quarto size. The introduction comprises an account in the German language of the conformation, affinities, geographical distribution, principles of cultivation, and literature of the order Bromeliaceæ. The plants figured in the present part are Vriesia Wawranea, Antoine, a night-flowering species; V. conferta, of GAUDICHAUD; and V. paraibica, the two latter Brazilian species; V. psittacina var. decolor, of WAWRA. The publication is got up with the finish that previous Viennese botanical works have led us to expect, and its use in defining and fixing the nomenclature will be very great. A full description in German of each plant is given; but we trust that, for the benefit of other nationalities, Herr Director ANTOINE will presently add a synopsis of the species described in the Latin tongue, and thus increase the obligations under which botanists must be to him.

— THE FLORISTS' SOCIETIES.—At a committee meeting held at South Kensington on Tuesday it was decided that the annual exhibition of the National Auricula Society should be held on April 22, and that of the National Caroation and Picotee Society on July 22, under the anspieres of the Royal Horticultural Society, and in the large conservatory. At both exhibitions a Veitch Memorial Medal and \(\mathcal{L} \)5 will be awarded in competitions open to amateurs and gentlemen's gardeners:—1, For the best twelve dissimilar show Auriculas; and, 2, For the best twelve Carnations (selfs and fancies excluded), and six Picotees.

- DUTCH BULBS AND PHYLLOXERA .- Dr. WAKKER, at the instigation of the Dutch Minister of Commerce, has published a note, in which he shows that the Phylloxera cannot live on any other plant than the Vine; and (2) that it has never been found on bulbs, either in Haarlem or elsewhere. WAKKER does but confirm—with regard to bulbs—what is true for all other plants (except the Vine), that nothing in the history of the insect justifies the measures taken by the several Governments to prohibit the introduction of living plants, and that such measures can only cause great losses to the merchants, without offering in compensation the slighest protection against the invasion of Phylloxera. It may be safely said that where the conditions (climate, food, &c.) are favourable to the spread of the Phylloxera no power in the world can prevent its entrance. But all this has been dinned into the ears of the Governments concerned without the slightest effect for years pastthe Phylloxera itself spreading in defiance of the Convention, and for aught we know being rather amused than otherwise at the impotence of the measures taken against it! — KETELEERIA FORTUNEI.—We learn from the Revue Horticole that this interesting tree has produced fertile cones in the nursery of MM. ROVELLI at Pallanza. The tree is about twenty-five years old, and measures 14 metres in height by 2 metres in circumference; the spread of the branches is about 10 metres; the bark is spongy, like that of the Colk tree. MM. ROVELLI say of it that in none of its characters does it resemble the Silver Firs (Abies of the Continent), nor the Hemlock Spruces (Tsuga), nor the Douglas (Pseudo-Tsuga), except perhaps in the cones, which are somewhat like those of the Tsugas; but while the cones of the Tsugas are peadulous, those of the Keteleeria are erect. The tree has more of the appearance of a Torreya or of Podocarpus totara as to the foliage, but the habit is different, and much more slender.

- THE EXHIBITION AT NICE. - Mr. II. RENTON MEIN, of the firm of STUART & MEIN, of Kelso, writing from Nice on the 9th inst., says :-"At the exhibition now being held here there are exhibited in the department devoted to the productions of Nice the woods of Eucalyptus globulus, Cupressus mexicana, Laurus regina and Glypto-strobus pendulus, or Taxodium sinense pendulum. These are the trucks of the first specimeos of each of the above trees planted in France, all baving been introduced by Mr. C. HUBER, who had then (1857), and has now, nurseries in Nice. In February, 1857, Mr. HUBER received a packet of six grains of Eucalyptus globulus; four of these germinated, and three trees still exist. The Eucalyptus is now found everywhere in the south here, and the wood is very highly prized on account of its durability; it is, however, very hard, and thus difficult to cut and work. It is said the French Government endeavoured, eight years ago, to utilise it, but found it was necessary to soak it in water for two years before it was sufficiently soft for workmen's tools. The English department is not large, and the only seed house represented is that of SUTTON & SONS, Reading, who have a very tastefully arranged exhibit of wax models of vegetables and seeds in tins."

- CAMELLIAS .- Were it not for Messrs, WIL-LIAM PAUL & SON, of Waltham Cross, the visitors to the meetings of the Royal Horticultural Society would seldom look upon a good representative series of cut Camellias, such as that produced on the 12th inst. Looking over the collection of blooms, Mathottiana was undoubtedly the finest dark variety to be seen, and it is remarkable alike for its depth of colour and massiveness of petal. Marchioness of Exeter, crimson-rose; Corallina, bright deep crimson; Eximia, rich crimson, fine form; Fatima, pale crimson-rose, with white bars; Leeana superba, crimson, much banded with white; L'Incaspitata, pale rose, barred with white; Fimbriata, pure white, extra fine; Eugénie Massina, delicate rosy-pink, margined with white, charming, and very distinct; Imbricata, crimson; and Montironi, pure white, were the gems of the collection; but this list does not exhaust all the fine varieties contained in this interesting exhibit, which consisted of some forty or so distinct varieties.

— PINUS PINEA, GOLDEN-LEAVED VARIETY,—Messrs. DAMMANN & CO., of Portici, Naples, send us specimens of the Italian Stone Pine, some of the leaves of which are of a bright golden hue, Sometimes one leaf only of each pair, at other times both, are thus affected, and it is evident that the tree when seen in the bright sunlight must be very effective.

--- PRIMROSES, -- Of all the floral features that went to make up the show seen in the Conservatory at South Kensington on Tuesday last, few collections excelled in interest — though, perhaps, some in effect—the truly beautiful lot of Primroses sent up from Knap Hill by Mr. ANTHONY WATERER. Perhaps it is not quite exact to describe them as Primroses, because that term is generally applied to the Primula acaulis only, and not to the Primula veris, with which Bagshot plants are most associated. Some term them Polyanthus Primroses, others hybrid Primroses, but all familiar with the beautiful strains of fancy Polyanthuses now so plentiful know that these produce plants which, as a rule, send up true Primrose flowers first, and to those follow umbels of flowers borne on stout stems that continue the bloom late into the spring. Of this peculiar habit were the

majority of Mr. WATERER's plants — robust, free blooming, early, and very varied in colours and marking, many of the blooms of great size, and all singularly beautiful. It says much for the diversity of the flowers of identical hues. Pin-eyes and thrum-eyes were in nearly equal proportion, though of even the latter, lew, beautiful as they were, would fully satisfy the exactions of the strict florist. That, however, is of little moment. Here was the interesting fact, that this fine lot of beautiful flowers, all in 48-sized pots, had been liftled from the open ground but a few days previously, and had been placed under glass to enable the blooms to be shown clean and fresh. It is impossible that exact descriptions of the colours or markings can be fully given. They were varied and beautiful beyond compare, and prettily set up behind an edging of hardy Heaths of various colours.

- THE NEW ORLEANS EXHIBITION.—We learn from a REUTER telegram to the Daily News that arrangements have been completed for the embellishment of the Exhibition grounds, which embrace 247 acres. The plan includes the formation of four lakes and the construction of a railway connecting all parts of the grounds, special separate gardens for the rarest trees and plants from Mexico, Central America, and Florida, and reserved spaces for foreign countries and the States of America. construction of the Horticultural Hall has begun, This will be the largest conservatory ever erected, being 600 feet long, and 184 feet wide in the centre. A Special Commissioner has been appointed to confer with the principal horticulturists of Europe, with a view to securing the co-operation of various European societies, of many of which he is a member, and also to secure the interest of foreign Governments in the display of fruit and plants, which is expected to be the largest and most interesting international collection ever made. Special Commissioners are already engaged in Mexico, Central America, and Florida, where they are being actively assisted by the Govern-ment. The collective Mexican exhibit will be of a very extensive character. The Exhibition opens in December next.

— LATE CHRYSANTHEMURS.—We were not a tittle surprised at the end of last week, on entering the old greenhouse at Heckfield, to see a couple of strong plants of the yellow Japanese Chrysanthemum grandiflorum in good bloom, the flowers, if not large, at least young and fresh, and the plants covered with robust healthy leafage. This is, indeed, lengthening out the Chrysanthemum season of blooming, for as it now begins in August, we get a period of six months, such as the one named Ethel, Meg Merrilles, &c., are more accommodating for late blooming than others there can be no doubt, but care must be taken to keep the atmosphere of the house fairly dry, not ounduly force them. Further, the plants must be well established in their pots, and not have been fresh lifted from the ground, as with all such the season of bloom is short, if an abundant one.

THYESACANTHUS RUTILANS.—A number of specimens of this rich scarlet-flowered plant are blooming superbly in a warm house at The Wilderness, Reading, giving at this dull time of the year an appearance of unwonted brightness. Mr. Lers, in preference to crowding the plants in amongst many others, by which the long pendent spikes of flowers come into contact with the foliage and soon decay, has suspended them by means of stout wire from the rafters of the house, and thus elevated above the other things they looked remarkably effective and beautiful. This style of house decoration is one that may well be adopted with many things of similar habit of growth, care being taken that the pols are suspended evenly.

MYOSOTIS DISSITIFLORA ALBA. — This charming hardy novelty ought to become very popular as a market plant. We have seen some plants of it in the regulation 48's, which had been lifted in good clumps from the open ground, potted and put into a gentle warmth for three weeks, that were full of bloom of the purest hue, and the entire plants not more than 6 inches in height. It is naturally very hardy and very early, and keeps very true, although originating in a sport. It is a mistake to keep this Forget-menot and its blue congener in pots all the winter. The exceeding susceptibility to damp when in a frame or

greenhouse militates against early potting. It is best, therefore, to lift and pot as fast as required.

WINTER-BLOOMING PLANTS AT MAIDEN ERLEIGH .- In the houses at this place, where the requirements of the family render an abundance of cut flowers at this time of the year imperative, that valuable winter Orchid, Coelogyne cristata alba, is largely grown, the plants giving an abundance of flowers that are specially valuable for feminine decoration. The bulbs are strong and clean, and show excellent cultivation. That curious Acacia platyptera, which has tall erect growth not unlike that of the Stag's-horn Fern, and blooms like those of Acacia armata is represented by some tall plants that would attract by their novel appearance even if not in bloom. They grow freely and are easy of cultivation. Centropogon Lucianus is not a common plant, but Mr. TURTON grows it largely for its rich deep red-coloured flowers. These, not unlike those of the Salvia, are borne in racemes and thrown out on the upper side of the drooping blooming wood. It is a striking thing for bouse decoration under artificial light, and like the even richer flowered Thyrsacanthus rutilans, seems to bloom as freely in the winter as can be desired. Erica persoluta alba is represented by several stout dwarf bushy plants just bursting into abundant bloom. Of ordinary forcing kinds it is perhaps one of the most floriferous and bushy, and merits wide cultivation. Of exceeding value, too, in a greenhouse temperature, are a number of plants of Salvia gesneriflora, blooming superbly. Small spikes of these are charming in bouquets as button-holes and large ones in vases. The plants average 5 leet in height; were struck in spring, planted out in the open air and in the summer, and in the autumn lilted into 9-inch pots. By pushing on some early and keeping others cool it sible to have this Salvia in abundant bloom for three or four months. Its culture is of the easiest.

- THE PHYLLOXERA LAWS .- Since the meeting on the 6th inst, the following letter has been received from an eminent Belgian nurseryman. It is to be regretted that the letter did not arrive in time to be read at the meeting :- " I think that the English nurserymen, and the English Government as well, have much exaggerated the difficulties which the execution of the Berne Convention would raise, and that they are mistaken about the expenses the same would entail. The starting point of view being wrong, the conclusions are affected with the same disease. On the other hand, I confess that in a country where commercial liberty and free trade are the prime objects, there would be but little chance to see the Berne Convention, with its restrictions in commercial matters, adopted with sympathy, however small these restrictions might be. In Belgium we thought at first in the same way as you do; consequently, we are not in the least astonished at your opinions and ideas, We in Belgium simply consider it as a mere formality. In England you have also, without knowing it, partially submitted to its rules, seeing that you forward with the plants you send to the Continent a cer-But it should be borne in mind that your certificates are not drawn up in conformity with the stipulations of the Convention, and that it is only on sufferance that our Custom-house officers consider them as sufficient. Some day they may be refused, and then difficulties will commence. All that the Convention now requires of the adhering countries is that they should send consignments of plants with some precautions, and when it is proved that the plants originate from establishments where no Vines are grown, or from a place distant not less than 20 metres (30 yards) from any Vine, plants are allowed to enter into any country without inconvenience, The official experts scarcely cost anything to our Government. These officials are appointed in every horticultural centre, pay a visit once to every nursery in their district, and declare to the local authority, who is entitled to deliver certificates, that the nursery is or is not in the desired condition. This is what is meant by the "Déclaration de l'expert officiel." These officials are selected by the Government amongst State, county, or city officers, and they receive no particular payment for this supplementary work. When a nurseryman wishes to have his place visited and be declared in good condition for exportation business, he pays a trifle to the official to cover it is well understood that no expenses, and further formality is required after this visit to obtain certificates. It is not necessary that every package should be examined by an official; this is a mistake,

When your name is included in the list drawn up by the local authority as in right order, you are entitled to a certificate for every consignment, and that is all that is wanted. The official need not be a scientific man, as long as he is in a position to determine that an establishment contains no Vines, or is situated at 20 meters from any Vine, or separated from the same by an obstacle which he considers sufficient to prevent the roots of the plants coming into connection with those of the Vines (such as a ditch, a road, a wall, &c.). In France all the gardes champêtres (rural policemen) are "experts officiels." In England police inspectors or clerks of some Board might do the work. To export plants into the adhering countries it suffices to send with them a declaration of the sender and an attestation of the local authorities-in other words, a certificate such as you do now; only your certificate must be in proper form. the importation of plants you would have to claim the same formality—viz., the certificate—from the senders. A difficulty arises when plants arrive from non-adhering countries : then it is necessary to employ some more competent officials to examine the goods. It was precisely to avoid this difficulty that the wish was expressed at our international meeting last spring that every country should join the Convention. Here, again, the Government does not pay those special officials. It is the nurseryman who calls for special officials. It is the nurseryman who caus for his services who has to pay them, (We pay five francs.) When all countries have joined the Convention, all the difficulties will be reduced to the mere addi-tion of a supplementary paper to the documents already wanted for exporting."

— Indigofera Gerardiana.—This handsome and very free-flowering Himalayan shrub is known in gardens under a number of names. It was long ago figured in the Botanical Register under the name of I. Dosua dvol. xxviii., tab. 57), the true I. Dosua being a totally different species. Besides this name, which is still perpetuated in some nurseries, the species is to be met with as I. coronilizefolia and I. foribunda. I. Getardiana makes a beautiful wall plant, and produces a profusion of its racemes of purplish-red flowers during the summer months; it also succeeds well in the ordinary shrubbery border, and it is only in severe winters that it sustains any injury—as a rule it soon springs up again, even after being severely cut back by frost.

THE WEATHER.—General remarks on the temperature, rainfall, and duration of bright sunshine, for agricultural and sanitary purposes, during the week ending Feb. 11, 1834, issued by the Meteories of the carlier part of the period was generally fair, but subsequently became very dull and squally, with rain, hail, or sleet showers. In the north-west and southeast some thunderstorms were experienced. The temperature has been about equal to the mean in the "Channel Islands," but above it elsewhere, the excess varying from t° to 3". The maxima were registered in most places on the 9th, and ranged from 50° in "Scotland, W.," to 55° in "Ireland, S.," The minima, which were recorded either on the 7th, 3th, or 17th, ranged between 27° in "Scotland, E.," 32° in "Ireland, N.," 32° in the westerly parts of England, and 38° in the "Channel Islands," The rainfall has been about equal to the mean in "England, S.," and "Ireland, N.," and rather more in "England, N.W.," and 7 in "Ireland, S.," but in all other districts the fall has been less than its normal value. Bright sunshine shows a slight increase generally, the percentages of possible duration varying from 6 in "England, N.W.," and 7 in Tengland, N.L.," to 23 in "Scotland, E.," and "Ireland, N.," and 25 in the Channel Islands. Depressions observed.—During the first few days of this period pressure over the greater part of our islands and France was comparatively uniform and the changes unimportant. As the week advanced, however, some large and deep depressions skirted our western and northern coasts, and travelled on in Scandinavia, causing the barometer in the United Kingdom to oscillate considerably. The wind, which had previously been light, or moderate, and generally W. or S.W., consequently backed to the S., and increased greatly in force of our coasts.

—— Gardening Appointments.—Mr. William Lawrence, from the Vale Royal Gardens, Cheshire, as Gardener to R. J. Pillings, Esq., Crimble Hall, Rochdale.—Mr. G. H. Richards, lately Gardener at Chetwynd Park, Newport, Salop, has succeeded Mr. Buchanan, as Gardener to Lady Stemens, Sherwood Park, Tuodridge Wells.—Mr. J. Hill, as Gardener to J. J. D. Paul, Esq., The Lawos, Eaton, Norwich.

INSECT ENEMIES.

SCALE INSECTS.—Dr. Riley, in his annual reports to the American Department of Agriculture, gives the result of numerous further experiments with paraffin oil emulsions for the destruction of the insects and their eggs. The following is a formula which has proved useful in practice :- Kerosene, 2 gallons = 67 per cent.; common soap or whale-oil soap, ½ lb. = 33 per cent.; water, 1 gallon. Dissolve the soap in boiling water, and add, while still boiling hot, the kerosene; churn or stir the mixture very thoroughly for five or ten minutes. The emulsion, when properly made, forms a thick cream, which adheres without oiliness to the surface of glass. When required for use, one part of the emulsion should be diluted with nine parts of cold water. The above formula gives 3 gallons of emulsion, and makes, when diluted, 30 gallons of wash. The proportion of kerosene may be increased, but cannot be diminished with advantage. In any case, a preliminary trial should be made, so as to secure the right strength. The emulsion should be used with a fine strength. Ine transfor with considerable force—the aim being to reach and thoroughly wet every portion of an infested tree. An ordinary garden syringe is declared to be practically useless, nothing less effective than a force-pump with a nozzle giving a finely atomised spray should be used attached to a length of flexible hose so as to allow of the introduction of the nozzle into the top of a tree. The orifice of the nozzle should be directed at right angles to the hose, the jet of spray may thus be directed upwards or downwards and brought into contact with all parts of the foliage from beneath as well as from the upper side. The cost (retail) of the emulsion is given at 45 cents. per gallon. The dilute wash costs (wholesale) 1½ cent per gallon.

THE CABBAGE WORMS .- Such was the destruction effected by the larvæ of the white Cabbage butterflies (Pieris) in the United States, in 1881, that large quantities of Cabhage were imported from Europe in 1881-82. Some of the insects were introduced from Eogland, others are indigenous. Dr. Riley makes them the subject of a report to the American Department of Agriculture, giving full particulars as to the natural history of the several insects. Preventive measures are of course the best, and this may be effected, on a small scale, by spreading a white net with meshes two-thirds of an inch in diameter, at a height of about I foot above the plants. The hutterflies alight on this net, but do not pass through it, and consequently lay no eggs on the leaves. Other preventive measures consist of hand-picking, allowing the access of poultry, or netting the flies. Among the more readily available remedies, hot water (130° F. = 55° C.) poured over the leaves will kill the insects without injuring the plant if proper care be used and a few experiments made beforehand. Pyrethrum powder, in the proportion of 200 grains to 2 gals. of cold water, kept stirred, may he syringed on to the plants with excellent effect. Kerosene emulsions are also recommended.

CYCLAMEN PERSICUM.

WHEN looking through Mr. H. B. Smith's fine collection of Cyclamen at his new Hanwell nursery a few days since we were struck with the pro-portions of some of the flowers. There were to be seen petals measuring 11 inch across, and some from 2 to 24 inches in length; and these were not on plants that had any special culture bestowed upon them, but were simply representatives of an ordinary large flowering strain, of which there were hundreds of specimens. The broadest and longest petals appeared to be found among the white varieties, those of the pink-flowered and pale rose flowers were very massive also. The richer coloured flowers have the smallest petals, but they are heiog gradually enlarged by the process of selection. Two varieties of the largeflowered section, both pure white, showed a remarkable distinctness of character. One named Baroness Burdett Coutts has very massive, smooth, flat, finelyrounded petals, broad and very striking-a truly superb variety; the other, Dame Blanche, has long, tall, somewhat spiral-shaped petals, narrower than those of the preceding variety. These are both very fine indeed, and they possess the strikingly marked foliage and freedom of flowering that are characteristic of Mr. Smith's selected strain.

Home Correspondence.

Pelargonium Dresden China.—My first sight of this singular Pelargonium was at the meeting of the Royal Horticultural Society on April 24 last, when it was named "Dresden China" (Turner, he gardening papers which noticed it at the time alluded to it as Mr. Turner's Dresden China, and also when shown subsequently at the May exhibition of the Royal Botanic Society. It was Certificated at the Crystal Palace show on May 19 as Turner's Dresden China. At the Pelargonium Society's Exhibition on July 25 it was staged as Dresden China (Turner), but it did not receive a Certificated from that body. In the list of flowers Certificated from that body. In the list of flowers Certificated from that body. In the list of flowers Certificated from that body. In the list of flowers Certificated from that body. In the list of flowers Certificated from that body. In the list of flowers Certificated from that body. In the list of flowers Certificated in 1883, which appears in the Gardeners' Year-Book for 1884, it is noticed as "Dresden China" (C. Turner, In never saw any raiser's name put to it other than that of Mr. Turner, and I naturally enough concluded that it was one of Mr. Turner's own productions. R. D.

Sisyrinchium grandiflorum.—This is one of the earliest and most beautiful of spring flowers. Its red-

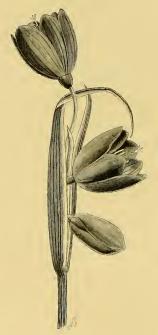


FIG. 40.-SISVRINCHIUM GRANDIFLORUM.

dish-purple bell-like flowers associate well with the larger Snowdrops. Botanically it is closely allied to the Crocuses, having but three stamens. Its grass-like foliage, too, is not unlike that of the Crocuses, but longer. Our illustration (fig. 40) is taken from unusually fine specimens sent to us from Messrs. Rodger, McClel-land & Co., of Newry, and show what good cultivation can do. Generally speaking the flower is not much more than half the size of the one now figured. The white variety is much less common, but is very chaste in appearance. The plant is a native of the United States,

The Eucharis Lily.—A gardening friend said to me a few days ago, "'llawe you seen Mr. Riall's Eucharis amazonica in bloom?" I had not, and be added, "'It is a sight worth going ten miles to see, I went to-day, and must agree with the observation just quoted. Let me try and give your readers an idea of it—there were several, but I am now referring to the largest. It was situated in the stove, and growing in an 18 or zo-inch pot, with a rich brown maiden loam for the major part of the compost, while the foliage was of that dark rich green that indicates rude health. Now, as to the blooms. I counted thirty-one flower-stems, and from five to seven perfect flowers to each, making a total of

upwards of 180, and most of the individual blooms from $3\frac{1}{2}$ to 4 inches in diameter, of the most peerless purity. IV. J. M., Clonnel.

Canker in Fruit Trees.—Mysterious at all times, and if Mr. H. Weir's assertion of insect agency should prove to be well founded, and an antidote invented, we should be well on the way towards stamping it out. Mr. C. J. Nicholson, a large fruit grower at Loughgall, near Armagh, and a most persevering and observant man besides, and who has suffered much loss from time to time through canker, tells me that he has quite got rid of it by never making holes when planting his trees. He simply spreads the roots out upon the surface, no matter how hard it may be, and places new soil over them. He also states that in the case of established trees he has got rid of it by double grafting. Some sorts are much more liable to canker than others, say, for instance, you have a large tree of some comparatively worthless variety. You head it down and graft it with another, which becomes cankered at once; whereas, if you place another kind between it and the stock, no canker ensues. A resumé of his experience would be most interesting and instructive to your readers, but the misguided man does not read the Gardeners' Chronicle! T. Smith.

Brussels Sprouts.—In the neighbourhood of Reading there is grown a strain of Brussels Sprouts known as the Reading Exhibition. The stems are very short, ranging in height, according to quality of soil and time of planting out, from 13 to 30 inches, and from top to bottom are thickly covered with large solid Sprouts. We saw grand samples of this kind the other day at Heckfield, the earlier plantings having been pretty well stripped, whilst the later ones gave stiff erect plants covered in the most perfect form with solid Sprouts. Actual size in these is, of course, even with this strain, much governed by cultivation, as in another garden in poorer soil the plants were estill as perfect in character, but the densely studded Sprouts were about half the size of those seen at Heckfield. For field culture, where the soil is never too deep or rich, this strain would be well suited, as there the Sprouts would prove just such as to satisfy the most exacting. X.

Lilacs Flowering Twice.—It is a well known fact that many deciduous shrubs and trees, if more or less denuded of their leaves, either by storms or otherwise, will often produce in the same season a second crop of leaves and flowers. A correspondent of the Revue Harticale, writing on Eastern gardening, calls attention in a recent number to the practical value of this secondary season of flowering with regard to the Lilac. The writer says:—"M. Davillon's observations, that the plants which flowered best were those which had most suffered from the storm—that is to say, those from which the leaves had been almost stripped—are perfectly correct. Here, and particularly at Smyrna, my native place, the experience is a very common one. From my childhood I amused myself by picking off the leaves of the Lilacs immediately after they had flowered in spring, in order to have them in flower in August; sometimes we only experimented on one half of a tree, in order to have them in flower in fact, our method of forcing Lilacs. If Lilac flowers are required in August and September, it is necessary, after the spring flowering, to keep the bushes without water for some days; the leaves are then removed, water is administered, and at the end of some weeks the plants are covered with bloom."

American Potatos,—We had thought that the days of dear Potatos had passed, and that reasonable prices were ruling, It is true we hear no more of 125, per pound, and never shall again; but our American friends are not without sufficient confidence in the value of their own raisings as still to ask a dollar the pound for a new variety that, under the name of Dakota Red, hears a remarkable resemblance to our large-tubered old acquaintance, Late Rose. In our own country, where Potato raising has of late made rapid strides, raisers start with 15, to 15, 6d, per pound, and are content with these simple prices that of course can be main-tained only one season, and then when the stocks are small. The new American is credited with being disease resisting, but so are many of our kinds more or less, and the past two years have shown them to be more than less, so that we have nothing to gain in spending our dollars; whilst, in the matter of cropping, our new kinds are equal, and in the important one of quality, we are beating all foreigners out of the field. We shall hardly hear much of the Dakota Red in this country at present, or probably at any time. Y.

Seedling Hepaticas.—On p. 175, at the end of an interesting note on growing Hepaticas in pots, I observe that "R. D." asks for information about their coming up from seed. Hepaticas are amongst those plants of which the seed will not germinate if

dried and stored, but which come up freely from the self-sown seed, if the conditions are favourable. After the flowering is over the crown of the plant should he sprinkled with fine peat soil, or some equivalent, until the base of the leaf-stalks is covered. Into this the seeds fall, and about the time that active growth commences in the parent plant in autumn they germinate, producing a pair of leaves simultaneously with the growth of the new leaves on the old plant. When the leaves are fully developed the seedlings may be removed. Some flower the next year. They generally follow the colour of their parent, though pink seedlings occasionally come from blue plants. Shades of colour vary a little. I have over tried crossing them. I find that seedlings of H, Barlowi come tolerably true to colour. "K. D." is quite right in saying that Hepaticas want a deep rich, very well drained sandy loam, and cannot stand being dried up in summer; but they are not always satisfied with these conditions. They do well wherever Christmas Roses do well. I should state that more seedlings come up amongst the leaves than outside them. C. Wolley Dod, Llanducho, Ftb. 11.

Iris reticulata cyanea—I. histrio.—The very interesting note on this plant given by Professor Foster in the Gardeners' Chronicle of January 26 last was read by me with much pleasure, and I return him my best those for it. I immediately requested Messrs. Haage & Schmidt to seed me a couple of flowers of their variety, and they had the kindness to do so; and now I must say I perfectly agree with Dr. Foster, that we have here doubtless a variation of Iris Krelagei. It is very probable that this is the same variety which seems to be found in a wild state at Tiffis, but it might be a garden seedling. Various cultivators have obtained seedlings both of the typical form of Iris reticulata and of Iris Krelagei, more or less varying in a darker or paler direction. So there



Fig. 41.-BULB OF IRIS RETICULATA.

have been obtained reddish or purple seedlings from I. reticulata typica, and more in the blue colours from I. Krelagei. If these varieties, which seem to be not very easy to grow, are true, multiplied, and offered to the trade, there may be expected fine collections of both forms. As for Iris histiro, this is quite a different thing, and this Iris, in my opinion, is as to delicate and elegant coloration superior to all the forms of the two other sorts. As Dr. Regel, without any doubt, has described this Iris as I, reticulata cyanea, this name ought not to be given to any other form; and Messrs. Haage & Schmidt's variety, therefore, would certainly be much better called I. Krelagei curulea. If more varieties, however, of these Irises are coming into the trade it will not do to designate them only by their colours, and ti will be preferable to give them vernacular names, as to other collections of florists' flowers. As to the earliness of the different sorts, the reports concerning them are variable. At present in my grounds Iris Krelagei is in bloom, and the I. (typical) reticulata will flower only some time later on. Others here say Iris Krelagei is alter than the type (Album Van Eoden, text of plate 30). As for beauty, very good growers give the preference to the varieties of the type, while others prefer the Krelagei form. There is also some difference in the form of the bulbs of the three sorts. Then these Irises, like other sorts of the Xiphium section, vary much in height, so that they become dwarfer, and sometimes by change of soil again taller. This, for example, may be observed especially with the varieties of Iris Xiphium. The reticulata group, too, have the same properties. For years I classified my very extensive collections of Iris Xiphium for bedding purposes into the everage height, and among the dwarf ones; although less frequently, single tall-

growing plants have to be taken away. Finally, as to the confusion in the names of Iris histrio and this Iris reticulate cyanea, it originates from the circumstance that the variety first offered by Messrs. Haage & Schmidt in their catalogue of 1881 was there noted as Iris reticulata cyanea (Iris histrio), in the lists of 1882 and 1883 the designation Iris histrio was not given; but I must express, by the way, that it was stated in 1881 to be the same plant, and this is



FIG. 42.-BULB OF IRIS KRELAGEL

the reason my attention was not formerly fixed upon it. Had the plant been obtained in 1881 as different from I, histrio I should doubtless have tried to get it, as I like to keep my Iris collection as complete as possible. J. H. Krelage, Haarlem, Feb. 5.

FORESTRY.

CONIFERS IN THE BELGIAN CAMPINE. — Travellers through Belgium from Antwerp towards Rotterdam will have noticed the sandy plains covered



Fig. 43.—IRIS RETICULATA.

in many places with young Conifers. It appears from a lecture of M. de Smet, reported in the Revue de PHorticulture Belge, that the sorts most grown are Pinus silvestris (Scotch Pine), Pious Pioaster, Picea excelsa (Spruce), Abies pecticata (Silver Fir), and A. Douglasii. The Scotch is the favourite, owing to its hardihood and accommodating habit. It is used in a small state for Hop-poles, telegraph poles, for charcoal-making, or for firewood. However poor the soil, the Scotch yields a revenue of from 2000 fr. to

3000 fr. per hectare (£40 to £60 per acre and upwards) when the trees are thirty years old. The Pinaster has lost the reputation it formerly possessed, the trees having been almost all killed in the winter of 1879-80; nevertheless it is recommended for culture on heaths that are broken up. Sown in a well-trenched soil the Pinaster grows rapidly. When eight to ten years old the trees yield faggots, and by their dense growth prevent the spread of the under-growth so difficult to extirpate. Land upon which the Pinaster has grown for ten years is as well pre-pared to receive a plantation of Scotch Fir as if it had been well manured for crops of Rye, Wheat, Potatos, &c. The Spruce does well on damp but not wet soils. At first it grows slowly, but after the sixth year its growth equals that of the Scotch Fir. It grows as well isolated as in groups. The Silver Fir is a valuable tree on good soil. It grows rapidly, and its wood is much esteemed. In Holland it is koown as Vuurnhout. Of the Douglas Fir a large quantity have been planted, and in a rich open soil grow at the rate of 75 centimetres a year. They were not hurt in the winter of 1879-80. In some parts of France this tree was not hurt by a temperature of -25° or -26° C. (-13° F.), though it was killed in Alsace and Champagne by a temperature of -28° C. (-18° F.). The trees should not be planted to closely together. When planted in avenues they produce a fine effect,

INTERNATIONAL FORESTRY EXHIBITION. — At the meeting of the Executive Committee, held on the 6th inst., a communication from the Secretary of



FIG. 44.—BULB OF IRIS RBTICULATA.

State for the Colonies was read with much satisfaction. In it, among other matters of importance in connection with the Exhibition, it was stated that the Government of Gambia would require at least 100 square feet of space for its exhibits, Governor Havelock taking an active interest in getting up a very complete collection of the forest products of the British Settlements in West Africa. It was also stated that among the contributions of some of the native chiefs of Iodia to the Exhibition now open at Calcutta, "the Maharajah of Travancore has on loan a beautiful collection of ivory carvings; one of these, representing a fair girl seated, is particularly spirited; and there is a fine ivory tankard of great size on a silver stand. The decorations on the latter are simple, thoroughly Eastern, and in excellent taste. It is understood that the whole collection of these articles is to be sent to the Forestry Exhibition in Edioburgh." The committee had before them a large number of applications from exhibitors for space, which were mostly approved.

A LARGE CORSICAN PINE.—Probably the largest Pious Laricio ever felled in Britain was yesterday sent to our sawmill to be cut into boarding. The cut end was 32 ioches in diameter, and at 9 feet it measured 6 feet 2 ioches io circumference. Eighteen feet in length of the cut end was free of branches, and as straight as an arrow, and contained exactly 30 cubic feet of timber. The wood appeared of excellent quality, resembling very closely the red deal of commerce, and contained a great quantity of resin. This tree was growing on almost pure gravel, and but for an accident would never have been removed from the position it so nobly filled.

A peculiarity of this Pine, which unfortunately was left out in my notes, is the narrow spread of branches in proportion to the tree's height—one of the most valuable qualities we are acquainted with in a forest tree. A. D. Webster.

EFFECTS OF THE LATE GALE.—Recently thinned plantations have suffered somewhat severely from the effects of the late storm, and many fine trees in the park have also been uprooted. One or two of our largest Austrians have unfortunately been heeled over, and in less number Cedar of Lebanon, Abies Douglasii and Pinus Laricio. Several hardwood, such as Oak, Ash, Beech, Spanish Chestnut, and Elm, have also been blown down, and branches broken and twisted in all directions. Vegetation has, however, received little or no check, indeed to-day I noticed several Thorns, young Sycamore, and Honeysuckle in almost full leaf. A. D. Webster, Penrhyn Castle, North Wales, Feb. 7.

THE PROPAGATOR.

THE PROPAGATION AND CULTURE OF ACHI-MENES: 1. From Cuttings .- A great number of plants should be set apart and grown for cutting purposes. When they have reached the height of 6 inches the plants should be cut down, leaving, however, one or two tiers of leaves. That portion of the plant which has been cut away must be divided into as many cuttings as possible, care being taken to leave an inch of the stem below the leaf on each cutting. It is not necessary to sever the cutting at a joint of the plant if the stem is buried in the soil up to its junction with the leaf. Well drained 48-sized pots will best receive the cuttings. They should be filled with soil composed of three-fourths peat and onefourth sand, which had previously been subbed through a 4-inch sieve and well mixed together. The soil should be pressed firmly into the pots, and a layer of sand a quarter of an inch in depth spread upon the surface. In order that the soil may be firmer, and thus better suited to receive the cuttings, it will be found advisable to well water the cutting-pots and allow the soil to settle. This will make the surface level. A dozen cuttings should be arranged around the outer edge of the pot and six in the centre. The holes made on putting the cuttings in should be filled up with dry sand. After they have been well watered, to make the surface level, and each sort properly labelled, they are ready to be placed in a cutting-frame,

2. Propagation from Leaves.—Only a few simple intentions are necessary as a guide to the propagation of the leaves. The "hard" or well-developed leaves of the plants should be severed with a sharp koife close to the main stem. They should be put into cutting-pots, arranged on a similar plan to those for the cuttings—eighteen leaf cuttings to form the outer row, and twelve in the centre. The leaf should be placed in an upright position in the pot, and the whole of the leaf-stalk should be beneath the soll. The surface of the soil, with the cuttings in, should be well watered to make it level, when the pots will be ready to be placed in the cutting-frame.

3. From Corms, or Bulbs.—A fruitful method of increasing Achimenes is from the corms, or bulbs. The largest and ripest bulbs should be selected and laid in an empty pan. After two or three days have elapsed the process of "scaling" must be commenced. This is done by rubbing the bulb gently in the palm of the hand until it is separated into many scale-like pieces; or, if this will not separate the particles, the bulbs should be rubbed between the finger and thumb. These scale-like particles should be sown like seeds in shallow pans upon the surface of the soil. The soil must be sandy, and should be gently sprinkled over the particles, havely covering them. They are now ready to be placed in the cutting-frame. As soon as the shoots which spring from the particles are 1,-inch in height they must be pricked off and placed in shallow pans, each t inch from the other. After they have been replaced in the cutting-frame for two or three days, they should be put upon a warm shelf until they are large and strong enough to be potted into separate pots.

4. From Secat.—Several well-drained shallow pans should be filled with soil composed of equal proportions of sand and peat, adding a small quantity of loam after the whole has been sifted through a fine sieve. The soil in the pots should be watered to make it firm and level. The seeds should be sprinkled on the surface of the soil, but care should be taken to see that they are not covered by it. The pans are now ready to be placed on a warm shelf. The shelf should be covered with river-sand an inch deep. Many young seedlings may be spoilt if they are not protected from the occasional drip of water from the root. In order to guard against this four thumb-pots should be placed on the shelf so as to form the correst of a square, and a plate of ordinary glass placed upon the top of them, the pan being placed between the thumb-pots and under the piece of glass. When the seeds spring up the seedlings should be pricked off and put into "thimble" pots, these little pots being sunk into an inch of river-sand, which should always be kept moist. In proportion as the seedlings increase in size and strength they must be potted and repotted into larger pots until they arrive at maturity.

The Culture of Achimenes. — The bulbs should be potted in 60-sized pots, four bulbs forming the outer circle and one in the centre. They should be gently pressed down and covered with the soil, which should consist of half peat, one-tibrid loam, and one-fourth sand, well mixed together, and the pots should be filled to an inch below the top. Having potted the bulbs they should be placed on a shelf close to the glass, and the greatest care must be taken not to allow them to become dry from the time the bulbs are potted to the time the plants droop and die down. When the bulbs send out shoots 2 or 3 inches in height they should each be potted into large 48-sized pots and removed to a front platform in the house. The Achimenes are naturally weakly-growing plants, and therefore they do not require a very high temperature; that ranging from 55° to 65° is most suitable, though plenty of moisture should be kept on the floor of the house and round about the pots. When the plants commence to flower they can be removed to the greenhouse or conservatory.

Hybrid Achiments.—Of late years few new hybrid varieties of excellence or celebrity have been produced, and therefore this department of Achimenes culture affords a good opening for gardeners. It will be found a good plan to select six good varieties—say, Grandiflora, Mauve Queen, Mauve Perfection, Loogi-flora alba, Ambroses Verschaffelt, and Williamsti—and to hybridise the dark flowers with the light ones, and vice verse. By this means you will obtain, as it were, a "double cross," and will certainly produce good varieties. Much may also be done by inter-crossing with true species, even though they may not be in themselves showy. Each flower that has been hybridised should have a piece of white worsted tied round its stem, attaching thereto the name of the variety with which it has been hybridised. These plants should be placed upon a warm airy shelf, or upon the front platform of the house. All the flowers and buds which have not been hybridised should be removed from the plant as fast as they appear. Thus all the strength will be concentrated in the hybridised seed-pods. The seed-pods of the Achimenes take a considerable time to ripen—indeed, not until the polant has withered. They should be gathered so soon as they are ripe, but the seeds should remain in the pods until the time arrives for sowing them, which is the first week in January.

In concluding our remarks upon this subject it

In concluding our remarks upon this subject it will, we think, be well to say a few words respecting the best and easiest method of wintering a large stock of Achimenes where the space is limited. The requisite number of 48-sized pots should be prepared, and some pieces of pot placed flat side downwards over the holes, and a piece of green moss rammed tightly into the pot, upon which a layer of sand an inch in depth should be spread. Having shaken out the bulbs, and freed them from soil, they should be placed in the pots on he sand, by which also they should be covered to a height of 1½ inch. Each pot should be rotered to a height of 1½ inch. Each pot should be rotered to a height of 1½ inch. Each pot should be ladeled. The pots should be placed on a shelf or front platform, and covered, in a temperature of over 50° to 55° Fahr. with three sheets of paper, in order to prevent the water which drips from the roof reaching the bulbs; or they may be placed in a cool dry shed or sectorom. By this plan a large stock can be wintered in an incredibly small space. So wintered the corms are ready for potting, after turning them into a fine sieve, and picking out the green moss and pieces of pot, thus leaving the corms separate, after having given the sieve a twist round to sift off the sand, Tr. O.

PIFTANTHUS NEPALENSIS. — Perhaps the safest place for this beautiful Himalayan shrub is against a wall, and it is well worth that protection. Except ln unusually severe winters the handsome dark glossy green trifoliolate leaves are retained uninjured; the rich yellow flowers, similar to, but much larger than those of the common Laburnum, open in May and June.

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CYCLAMENS AT SOUTH KENSINGTON, - The meeting of the Royal Horticultural Society last Tuesday brought so many and fine collections of Cyclamens that a kind of Cyclamen festival resulted. Most of the leading growers were represented, foremost being a really splendid collection from Mr. H. B. Smith, of Ealing Dean, whose plants and flowers were noticeable for their fine culture and large size. Of the new varieties staged by Mr. Smith, one, named Dame Blanche, received a First-class Certificate of Merit. It must be regarded as the finest pure white Cyclamen yet seen, being characterised by great smoothness and solidity of petal, large in size, and charmingly displayed. It belongs to the giganteum section. Two other whites were also shown on this occasion-viz., Baroness Burdett Coutts and Mont Blanc, which, like the foregoing, were true white selfs, without a taint of colour, and both highly valuable. Rose Perfection is a very fine variety, remarkable for the size of its flowers, which are of a pleasing pale pinkish-rose, and having a crimson base. Crimson King, a rich coloured variety, was also shown in fine form, and there were other fine varieties also, but unnamed. Mr. J. Wiggins, gardener to W. Clay, Esq., Kingston-on-Thames, had a large collection, but many of the plants looked as if they had suffered from travelling. His new varieties comprised Una, pure white; Vesuvius, bright crimson; Albert Victor, white, with crimson base; Eastern Queen, white with purple base; and a very large specimen of a pure white variety named General Gordon, really a splendid plant, finely grown and bloomed. Then Mr. Clarke, of Twickenham, had an extensive collection, also of Twickenham, had an extensive collection, also including several new varieties, such as Cardinal, very deep crimson; Rose Queen, bright rose, with crimson base; and King of Roses, delicate blush, with pale purple base. Messrs. Veitch & Sons, E. S. Williams, and others also had collections, and it is long since we looked upon so many plants at one meeting of the Society.

PRIMULA SINENSIS AT SOUTH KENSINGTON. -A very large number of these were to be seen at the meeting of the Royal Horticultural Society on Tuesday, and, as in the case of the Cyclamen, several well known growers had collections. For thoroughly well-grown plants none could excel those shown by Messrs. Veitch & Sons. It is true the collection contained little of novelty, but the older types were seen to great advantage. Messrs. Carter & Co. staged a collection of comparatively new varieties, but they were not presented in good condition; and if the blue variety, Holborn Gem, had a little more of the brilliancy of colour depicted in catalogues it would perhaps be more valued. But it is no doubt capable of higher development, which will appear in course of time. The group from Messrs. H. Cannell & Sons, of Swanley, possessed the greatest amount of novelty, and to one of the Swanley novelties, named Emperor, a First-class Certificate of Merit was awarded. It is a very fine salmon-carmine coloured variety, intense in hue, and with a pip of great size and substance. Swanley Giant, very large, pale-purple; Mammoth, large lilac-purple; and the Queen, very large, pale blush, are all of great size; but, as too often happens in the case of very large flowers, the petals are apt to reflex on the edges, and they take on an inelegant appearance. The best deep coloured variety we saw was Swanley Red; a selected form of Chiswick Red; a variety that maintains its colours well, and which is also of good habit, displaying the flowers well above the foliage. But there was a marked absence of the pretty shaped varieties Messrs. Windebank & Kingsbury used to raise at Southampton years ago.

FERNS IN THE LARE COUNTRY.—We learn from the Mancheter City News that Mr. Hodgson, lecturing recently at Carlisle on the Flora of the English Lake District, entered a protest against the ruthless and indiscriminate way in which Ferns were being rooted up and exterminated. In the Keswick neighbourhood, once famous for its Royal Ferns, the Osmunda in its wild state was extinct. Other rare Ferns were undergoing the same fate. A Fern new to the district had recently been discovered, the precise location of which he would not make public.

Reports of Societies.

Royal Horticultural : Feb. 12.

SCIENTIFIC COMMITTEE.—Sir J. D. Hooker, K.C.S.I., in the chair. Present:—Messrs. Berkeley, Boscawen, Houston, Smee, Loder, Masters, Wilson, Boulger, Bennett, Pascoe, W. G. Smith, Murray, Mangles, Ridley, and Lowe.

Scedling Plants of Dodder .- Mr. W. G. Smith showed seedling plants of Cuscuta trifolii, raised from seed taken from siftings of imported Clover seeds. The seeds vary greatly in the length of time required

for germination—some springing up in four days, others requiring two months.

Mushroom Growing.—A paper on this subject, relating to the culture of Mushrooms in disused retaining to the culture or mustinous in Gussace, stone-quaries near Bath, was read by Mr. Bennett, and referred to Mr. Berkeley. The necessity for watering the beds with warm water after letting the bed get thoroughly dry was insisted on.

Electric Light and Palato Culture.—Mr. Boulger

Electric Light and Polital Country, and Bodget drew attention to the negative experiments of Mr. Cross with reference to the culture of Potatos under the electric light. When the light was employed exclusively no chlorophyll was produced. These negative experiments, however, are of less moment than those which show that chlorophyll can be produced the influence of the light.

duced under the influence of the light.

Crocus Imperati.—Mr. Loder showed the white form of this species, which led Dr. Lowe to remark that he had found the variety wild within 30 miles of Naples.

Crocus Balansæ,-Mr. Loder also showed flowers

of this rare Crocus, the outer segments of which are of a rich velvety-bronze colour.

Missa Ensete.—Mr. Loder also exhibited a small plant of this species in flower, although the seed had

only been sown during the last summer.

Snowdrops.—From the same gentleman came a series of specimens, representing most of the varieties

d species in cultivation,

Hyacinths Grown in the Dark,—Mr. Smee showed bulbs of Hyacinths which had been allowed to remain unheeded in a cellar since 1882; the plants were now growing at the expense of the bulbs, which had even

thrown off small secondary bulbs.

Stanhopeas and Frost.—The Hon. and Rev. J. T.
Boscawen alluded to the case of a Stanhopea which
he had turned out of a hothouse into an open shed, where it was subjected to 13° of frost without injury

even to the young growth.

Pear Branch.—From Lord John Manners came a branch of Pear tree growing on a wall, and presenting large oval patches of dead bark. The cause of death

large oval patches of dead bark. The cause of death was probably sun-burn, acting on wet bark. Thebrous Species of Solanton.—Sir Joseph Hooker showed drawings of S. Maglia and S. Jamesi, to species alluded to in Mr. Baker's recent paper. The Filtering Power of Sand.—Mr. Plowright sent a paper, with illustrative tubes, to show that and in tubes to which spore-laden water is added in drops does arrest the passage, not only of fine inor-ganic matter, such as red-lead and lamp-black, but also of fungus spores. The experiments corroborated Mr. Jensen's views, that a sandy soil does prevent the access of spores.

access of spores,

Root-Hairs,—A drawing was shown of the roothairs of Poa pratensis growing in water, and which
were coiled up spirally as if they were the subject of
greatory movements; similar phenomena had been
witnessed in the case of pollen tubes,

(The Outer Towney,—A fine specimen of this

The Oyster Fungus.—A fine specimen of this fungus, Trametes gibbosa, was exhibited by Mr. Sidney Ford, gr., Leonardslee, Horsham.

FLORAL CONMITTER.—Present:—Section A. John Fraser, Esq., in the chair; Messrs. G. F. Wilson, E. Hill, J. O'Brien, J. Dominy, H. Ballantine, J. Hudson, J. Woodbridge, H. Herbert, H. Williams, J. Moore, Dr. Masters, and the Rev. G. Henslow.—Section B. Shirley Hibberd, Esq., in the chair; Messrs. H. Bennett, W. Bealby, J. D. T. Llewelyn, I. Douglas, J. James, J. Child, G. Duffield, D. C. Latibury, H. Turner, W. B. Kellock, and H. Cannell. Quite a dazzling display was made to-day by several exhibitors with collections of Cyclamen, of which were fine examples of skilled uclture and careful which were fine examples of skilful culture and careful hybridisation. Mr. R. Clarke, Twickenham, was awarded a Silver Banksian Medal for a collection consisting of plants ranging from the purest white to red, and white and red flowers, some of them being red, and white and red flowers, some of them being of more than ordinary merit, viz., Cardinal, King of Persicums, Rose Queen, and Compactum. A Silverill Banksian Medal was awarded to Mr. Wiggins, cr. to W. Clay, Esq., Grove House, Kingston-on-Thames, for a finely-bloomed collection of Cyclamen persicum, possessing a most robust habit with excellent foliage, Mr. H. B., Smith, nurseryman, Hanwell, obtained a Silver Banksian Medal for a grand group of seedling

Cyclamens; and for one named Dame Blanche, a very fine white, a First-class Certificate was at the same time awarded. The only one exhibit of Hyacioths, fortyfive in number, was that of Mr. B. S. Williams, Victoria Nurseries, Holloway, which was awarded a Silver Eanksian Medal, the spikes being exceedingly good, as forced bulbs, the plants showing also careful good, as forced bulbs, the plants showing also careful management. Some of the best were those of well-known kinds, such as Lord Derby, Baronesse Van Thuyl, Grandeur à Merveille, Grand Lilas, Rubra Maxima, Lord Macaulay, Charles Dickens, Von Schiller, &c. Mr. Williams also contributed specimens of his fine strains of Cyclamens and Primulas. Mr. A. Waterer, nurseryman, Knap Hill, received a Silver Banksian Medal for a pretty collection of Polyanthuses, which showed a great diversity of colour, well developed blooms, and healthy foliage—a proof of how valuable these easily grown hardy plants are for winter decorative work and for cutting for table and other bouquets. An excellent collection of Camellia blooms was shown by Messrs. W. Paul & Son, Waltham Cross, and which most deservedly was awarded a Silver Banksian Medal. Messrs, W. Paul & Son, Waltham Cross, and which most deservedly was awarded a Silver Eanksian Meddl. A recognition of these beautiful flowers, which are apt to drop into the background at present, is of much value. There were about twenty-four varieties in all, amongst them being fine examples of Annette Franchetti, a pure rose, with a white stripe in the petal, and reflexed; Monteroni, a good reflexed white, the bold-looking rosy-scarlet incurved Marchioness of Exeter, a pretty bouquet reflexed flower in Eximia, scarlet; Princess Charlotte, a fine white; Ecany of Hornsey, a rose-coloured variety; Fatima, a good pink, having a white stripe; Fannie Sanchioli, a fine opaque-white, with a blotch of faintest rose on the centre petals; Lucrezia Gazzarini is another pale rose, with a white stripe in the middle of the petals; and with a white stripe in the middle of the petals; and Monteroni Vera, a very pretty white faintly suffused with rose colour. A First-class Certificate was awarded to a bunch of flowering shoots of the rare hardy tree Parottla persica, valuable in early spring for the colour displayed by the bunches of dark red inconspicuous flower-buds, but more especially for the magnificent coloration assumed by ally for the magnificent coloration assumed by the leaves in autumn. The pretty Saxifraga Burseriana was shown by Messrs. Carter & Co., Burseriana was shown by Messrs. Carter & Co., of Holborn, and for which they were awarded a First-class Certificate, Messrs. Veitch & Sons received First-class Certificates for Epacrises Diadem (deep rose) and The Premier (flesh-pink)—good examples of these somewhat neglected plaots. Mr. James, Farnham Royal, was a warded First-class Certificates for two distinct seedling Cinerarias, named Lottie Williams, dark maroon, with a violet ring round the grey disc; and Great Eastern, violet-rose, a flower 3 inches across. From R. P. Percival, Esq., Southport, came a cut bloom of the rare white variety of Cattleya Percivaliana; and Major Lendy, Sunbury, had a nice specimen of another variety of the same species named citrioa, in which the lines on the lip are orange-coloured, instead of yellow. Lalia lip are orange-coloured, instead of yellow. Lælia anceps Williamsiana, showo by Messrs. Sander & Co., is a lovely waxy-white flower, with beautiful markings is a lovely waxy-winte hower, with beautiful markings on the wings of the labellum. The same firm also had in Oncidium anthocrene a species much resembling O. fuscatum, the flowers being chocolate-brown, barred with yellow, and the lip white. Mr. H. M. Pollett showed a very pretty supposed hybrid Odontoglot named Pollettianum, the flowers of which are of a flesh tinted ground colour spotted with crimson, and which might be taken by some as an extra fine form of O. Ruckerianum. With this came one or two nice of O. Ruckerianum. forms of O. Rossi majus, including Mr. Day's original

plant of the variety erubescens.

Votes of thanks were given, amongst others, to Mr. A. Waterer, Knap Hill, for a finely-flowered plant of Andromeda (Pieris) japonica, a subject no one possessing an American garden should be with-out; to Messis, Veitch & Sons for Violet Comte de Brazza and Freesia refracta alba, the latter a useful decorative bulbous plant; to Mr. James, Farnham Royal, for a collection of Primula sinensis; to Mr. Royal, for a collection of Primula sinensis; to Mr. Walker, nurseryman, Thame, for a plant of Fuchsia procumbens, carrying a few fruits. Votes of thanks were further awarded to Mesrss. Cannell & Sons, Swanley, for Primula sinensis of new varieties, some of them having particularly vivid colours and regular outline; and also for a boxful of Cineraria blooms; to Mr. Hodges, gr. to Edwin Wright, Esq., Gravelly Hill, Birmingham, for cut blooms of Lælia albida, Calanthe vestita alba major, and Odontoglosum Alexandræ luteum. A plant of Vanda Cathcarti, carryiog eleven of its neculiarly barred blooms, came Calanthe vestita alba major, and Odontoglosum Alexandre luteum. A plant of Vanda Cathcarti, carrying eleven of its peculiarly barred blooms, came from the garden of G. Heriot, Esq., Choinuley Park, Highgate; and Mr. James O'Brien exhibited a pretty specimen of a Japanese Fern, several grotesquely trained examples of which were illustrated in our last volume at p. 461. The plant as shown was a good form of Davallia Mariesii, and is certainly not a form of D. hullata. as hay recently been groneously stated. of D. bullata, as has recently been erroneously stated.
Messrs, Stuart & Mein showed a plant of Spirae contusa, which is of some decorative value, but it was not improved in appearance by the way it had been trained.

The awards made were :-

FIRST-CLASS CERTIFICATES.

Section A.

To H. M. Pollett, Esq., for Odontoglossum Pollett-

ianum. To Messrs, F. Sander & Co., for Lælia anceps Wil-

To Messrs. F. Sander & Co., for Oncidium antho-To Messrs. James Veitch & Sons, for Epacris The

Premier.

To Messrs. James Veitch & Sons, for Epacris Diadem,
To Messrs. James Carter & Co., for Saxifraga Bur-

seriana. To F. A. Philbrick, Esq., Q.C., for Odontoglossum

ispum aureum. Paul Respondent de la respectación de la respondent de la re

To Messrs. Barr & Son, for Narcissus pallidus major. Section B.

To Messrs. Canoell & Sons, for Primula sinensis Emperor.
To Mr. C. Edmunds, for Cyclamen giganteum deli-

tum. To Mr. H. B. Smith, for Cyclamen Dame Blanche, To Mr. J. James, for Cineraria Lottie Williamson. To Mr. J. James, for Cineraria Great Eastern.

CULTURAL COMMENDATIONS.

To Major Lendy, for Cattleya Percivaliana citrina. To Mr. Wiggins, for Cyclamen General Gordon. To Mr. R. Aldons, for Vanda Cathcarti.

FRUIT COMMITTEE .- Beyond collections of Apples FRUIT COMMITTEE.—Beyong concentros of appropriate there was no other varieties of fruit shown, and of these Messrs. Lane & Son, Great Berkhampstead, showed a fine selection, some of the varieties being apparently in prime condition. We noticed Forge, these Messrs, Lane & Son, Great Berkhampstead, showed a fine selection, some of the varieties being apparently in prime condition. We noticed Forge, Galloway, Watham Abbey Seedling, Annie Elizabeth, Queen Caroline, Lucombe's Seedling, Adams' Pearmain, Baumann's Red Winter Reinette, Dutch Mignonoe, Kirk's Fame, Selwood Reinette, Belle Boone, Prince Albert (this last looking quite the best in the collection), Bedfordshire Foundling, and Sturmer Pippin. Mr. G. Goldsmith, Hollanden, Tonbridge, showed almost as large a collection, in which we remarked good examples of Hall Door, Golden Knob, Winter Queening, Herefordshire Pearmain, Fearn's Pippin, Dumelow's Seedling, Golden Noble, Cox's Orange, Warner's King, Lincoln Pippin, Royal Russet, Lord Derby, Gloria Mundi, Hollandbury, and Reinete du Canada. Mr. Robert Doe, The Gardens, Rufford Abbey, Ollerton, a seedling, Apple; and various sorts came from Dr. Bull, Hereford; Mr. Divers, Maidstone; the Cranston Nursery Company, and from the Royal Horticultural Society's Gardens, Chiswick. A quantity of fine Schoolmaster Potatos were shown by Mr. Turner, Slough; some enormous Onions, by Mr. Walker, of Thame, of a kind named The Exhibition, seemingly a good variety for late use.

THE ANNUAL GENERAL MEETING was held the THE ANNUAL GENERAL MEETING was held the same day in the gallery attached to the large conservatory, at which but few Fellows attended. The President, Lord Aberdare, took the chair, the other members of the Council present being Sir Trevor Lawrence, Bart, M.P., William Lee, Esq., G. F. Wilson, Esq., E. G. Loder, Esq., Dr. Hogg, W. Haughton, Esq., Treasurer, and Major Mason, Esq., Secretary. The minutes of the last annual meeting having been read and confirmed. Dr. Masters W. Hanghton, Esci., Treasurer, and Major Mason, Esq., Secretary. The minutes of the last annual meeting having been read and confirmed, Dr. Masters and Mr. Charles Noble were appointed scrutineers of the ballot. The President called upon Mr. Haughton to explain the reason for altering the bye-law (No. 96) which unnecessarily compelled him to write his name on about a thousand blank subscription receipt forms every January, and which with proper safeguards could be just as well done by the clerks in the office, as the receipts were duly checked. The alteration was unanimously agreed to.

tion was unanimously agreed to.

The report having been taken as read, Lord Aberdare, in moving the adoption of the report and balance-sheet, said that the fact of the meeting being held where it was, was suggestive of the transitional held where it was, was suggestive of the tradistional position of the Society at that moment, and as a result of such uncertainty in their position he had to regret the fact that the number of resignations had increased, and that there was also a falling off in the number of persons seeking election. In 1882 124 Fellows resigned and 147 were elected, while last year the number of resignations was nearly 150, and the number elected was only 135. The connection of the Society with those gardens had in former years brought a great accession of members, and now that the connection was virtually terminated, inasmuch as it was now only a tenant on sufferance, it was natural that nection was virtually terminated, masmuch as it was now only a tenant on sufferance, it was natural that many Fellows should cease to care about member-stip, and that fewer candidates should seek admis-sion. His only surprise was that there had not been more resignations, but he was glad to know that the Society had not lost many of the Fellows who joined it solely on ancount of its horticultural status. As to the financial position of the Society he was glad to be able to say that for the first time in five years they had a balance in their favour, the general result of

the year's working being a balance to the good of £1864. The Council had availed themselves of their present flourishing position to wipe off all doubtful assets, and after making a clean sweep of all their liabilities they had still about \$800 in hand, and they assets, and after making a clean sweep of all their liabilities they had still about £800 in hand, and they looked forward to their financial position being still further enhanced during the present year. They had secured for the Fellows, from the authorities of the Health Exhibition, the same advantages as they had enjoyed last year, and against their loss of members they could well put their better financial position, and the increased interest which their present members took in the scientific character of the Society. Their present transitional position pointed out to them the necessity of making arrangements for obtaining a better lodging, and he was not without hope that at some future date the Society might attain to the digoity of those learned societies that were lodged at the public expense in Burlington House. There was one change in contemplation which he had to announce, though the final arrangements had not been completed, and that was that as they did not propose to hold a summer show themselves a proposition had been made to them that, in addition to the usual fortnightly meetings, monthly fruit and flower shows should be held in a building to be erected for that purpose in connection with the Society, but at the expense of the Health Exhibition authorities. He was sanguine that this proposal would be carried out in a liberal way, and houge the Fellows would derive

expense of the Health Exhibition authorities. He was sanguine that this proposal would be carried out in a liberal way, and hoped the Fellows would derive as much pleasure under this arrangement as they obtained through the large show.

Mr. Shirley Hibberd, who seconded the resolution, was gratified to know that the Society was in a sound financial position; but they should not forget that that was entirely due to their having got some of the mooce by an accident. As regards the management of the Society, he could not help stating that for some months past a feeling of distribut had arisen among practical men that the best interests of horticulture were not being developed by the Council; some months past a feeling of distrust had arisen among practical men that the best interests of horticulture were not being developed by the Council; their arrangements for the season were made so late that the growers of some things had no time to get them ready for the shows, and on that account the proposed monthly shows would not be so good as they might have heen. There was a danger, too, of the fortnightly meetings being starved out of existence, so little is the sum of money expended on them; but while the meetings suited the nurserymen as an advertising medium, something must be done to encourage the practical gardeners, or they would soon have nothing but trade groups, and the place would become but a branch of Covent Gardeo Market. On behalf of the International Potato Show Committee, he thanked the Council for the good service done to the committee by the facilities placed at their disposal at Chiswick, and paid a well deserved tribute to Mr. Barron and his staff for the most satisfactory manner in which the garden is maintained. Complaints having been made by one or two Fellows about the closing of some of the entrances, Lord Aberdare replied, and the motion was adopted without a dissentient.

without a dissentient.

The result of the ballot showed that the following The result of the ballot showed that the following elections had been carried unanimously:—Viscount Enfield, Professor Michael Foster, F.R.S., and F. Du Cane Godman, Esq., F.R.S., as members of the Council; Lord Aberdare as President; W. Haughton, Esq., as Treasurer; Major F. Mason as Serelary; and Messrs, John Lee, James F. West, and William Richards as Auditors.

A vote of thanks to the Chairman brought the meeting to a close.

meeting to a close.

Obituary.

PROFESSOR BALFOUR. — How many students in successive annual generations have taken their botanical nourishment from Balfour's Manual, or Class Book, it would be difficult to say, for though it might be easy for the registrar to give the numbers of those who attended the Professor's classes, first in Glasgow, then in Edinburgh, it would assuredly be a difficult, if not impossible, task to enumerate who indirectly claim Balfour as their teacher. Writing nearly ten years ago, we said of Balfour that he was a pre-eminently successful teacher-one whose zeal inspires, whose energy maintains, whose lucid style facilitates, the progress of his students. This was written not long before failing health induced the Professor to retire from the more active duties of his office. In our Edinburgh Supplement, which was published in September, 1875, we gave a full account of the Botanic Garden then under the directorship of Professor Balfour, and the Curatorship of Mr. MacNab. In that account we were naturally led to allude to the work done by the Professor-work which it was evident even then was in excess of his strength.

John Hutton Balfour, for long the most prominent

member of the medical faculty in the University of Edinburgh, was born in 1808, and in 1845 succeeded Dr. (afterwards Sir William) Hooker in the Chair of Botany in Glasgow. He was the friend and associate of Wight, of Falconer, of Dickson, of Greville, and a host of memorable men, most of whom have passed away before him, but who were knit together by the common bond of sympathy in the shape of a love for plants. Their excursions mid moor and mountain were fruitful, as a glance into many a berbarium testifies, and they formed the precursor of that series of herborising expeditions undertaken year by year by the Professor and his students with such zeal and with such advantage to the pupils. In 1845 the Chair of Botany in Edinburgh fell vacant, and Dr. Balfour was appointed to the office and to the Regius-keepership of the Royal Botanic Garden. The Professorship of Medicine was more nominal than real, so far as teaching was concerned; but, as Dean of the Medical Faculty, Balfour was brought into connection with his brother Professors and generation after generation of students. His powers of work and organisation and his sympathetic manner contributed largely to the advance that has been made in the progress of the University. seconded by Mr. MacNab and Mr. Sadler, both of whom predeceased him, Dr. Balfour brought the Edinburgh garden to a high standard of perfection, and especially of practical utility. New Palm-houses, museums, rockeries, all bear testimony to his zeal. The Edinburgh Botanic Society also profited largely by his example and constant aid. Some few years since, from failing health, Dr. Balfour resigned the active duties of the Professorship, being nominated Emeritus Professor. After some time his health improved, so that, to some extent, his death on Monday morning last, was unexpected.

The Meather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON, FOR THE WEEK ENDING WEDNESDAY, FEBRUARY 13, 1884.

MONTH AND DAY.	BARON	ieter.	т	EMP T	ERAT HE A	URE LIR,	OF	duc fi Gla Tab	rome- tions om isher's les 6th ition.	WIND.	RAINFALL	
	Mean Reading Reduced to 32° Fahr.	Departure from Average of 18 years.	Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 50 years,	Dew Point.	Degree of Humdity. Sat. = 100.	Average Direction.		
Feb.	In,	In.									In.	
7	29.92	+0.15	44.5	33+5	11.0	38.9	- 0.2	37-5	98	E.N.E.	0.00	
8	29.69	-0.08	45.2	37 - 5	7.7	41.7	+ 2.6	39-5	92	E.	0.00	
9	29.33	-0.44	51.0	42.5	8.5	47 ·S	+ 8.4	45.6	94 {	S.W.: W.S.W	0.05	
10	29.42						+ 3.6		87 {	S.W.: S.S.W.	0 14	
11	20,61		1				+ 1.0			S. S. W.	0,14	
12	29.79						+ 4.9			S.; S.S.W.	0.00	
13	20,80	i	1				+10.9			S.S.W.	0.03	
		,5.00	50.5	7-13	-4.0	49.0	, 1019	43.7				
Mean	29.65	-0.13	49.2	37.9	11.3	43.5	+ 4.5	41.0	92	S.	0.36	

Feb. 7.—Fine day and night; overcast.

8.—Dense log io morning; fine, dull afternoon and night. The maximum temperature of this day took plack at midnight.

9.—Look plack at midnight.

10.—Fine bright morning till 10.70 a.84.; showers of rain till 4.30 F.M. Fine clear night.

11.—Fine bright morning, deep blue sky; wet afternoon.
Fine clear night from 5 F.M.;

12.—Fine bright day and night.

13.—Fine bright day, deep blue sky. Rain at 10 F.M.; fine afterwards.

LONDON: Atmospheric Pressure.—During the week ending February 9, the reading of the barometer at the level of the sea increased from 30.33 inches at the beginning of the week to 30.49 inches by 9 A.M. on the 3d, decreased to 30.43 inches by midnight on the same day, increased to 30.45 inches by midnight on the 4th, and was 29.40 inches by the end of the

week.

The mean reading for the week at the level of the sea was 30.14 inches, being 0.44 inch higher than last week, and 0.20 inch above the average of the

Temperature. - The highest temperature in the shade in the week was 51°, on February 9; the highest reached on the 3d was 41°.2. The mean of the seven high day temperatures was 46°.5.

The lowest temperature was 29°, on the 3d; on

the 9th the lowest temperature was 42°.5. The mean of the seven low night temperatures was 37°.4.

The greatest range of temperature in one day was 12°.2, on the 3d; the smallest was 6°.3, on the 5th. The mean of the seven daily ranges was 9°.1.

The mean temperatures were — on the 3d, 36°; on the 6th, 45°.5; on the 6th, 45°.5; on the 6th, 41°.4; and they for the 5th, 41°.7; and these were all above their averages (excepting the 3d and 7th), which were 2°.8 and 0°.2 below) by 6°.4, 6°.5, 2°.3, 2°.6, and 8°.4 respectively.

The mean temperature was 42°.3, being 1°.4 lower than last week, and 3°.3 below the average of

The highest reading of a thermometer with blackened bulb in vacuo placed in the full rays of the sun was 70°.5, on the 7th. The mean of the seven

The lowest reading of a thermometer with its bulb placed on grass and fully exposed to the sky was 22°, on the 3d. The mean of the seven readings was 30°,2.

Rain fell on the 9th to the amount of 0.05 inch.

ENGLAND: Temperature,—During the week ending February 9 the highest temperatures were 53°,2 at Cambridge, 53° at Turo and Sunderland; the highest at Preston was 49°, at Bolton 49°,4, and at Bradford 49°,5. The general mean was 51°,2.
The lowest temperatures in the week were 24°,3 at Wolverhampton, 26° at Truro, 26°,4 at Nottiogham; the lowest at Liverpool was 35°,5, and at Bradford, Leeds, and Preston 30°. The general mean was 28°,5.

Leeds, and Preston 30°. The geoeral mean was 28°.5.

The greatest ranges were 27° at Truro, 26°.1 at Wolverhampton, 25°.2 at Cambridge; the smallest ranges were 17°.2 at Liverpool, 19° at Preston, and 19°.5 at Bradford. The general mean was 22°.7.

The mean of the seven high day temperatures was highest at Truro, 50°.7, at Sheffield 49°, at Liverpool 48°.7; and was lowest at Leicester, Bolton, and Bradford, 46°. The general mean was 47°.3.

The mean of the seven low night temperatures was highest at Sunderland, 40°.3, at Liverpool 40°.2, at Leeds 39°.4, and was lowest at Wolverhampton, 33°.5, at Truro 35°, and at Nottingham 35°.2. The general mean was 37°.3.

The mean daily range was greatest at Truro, 15°.7, at Wolverhampton 12°.6, at, Sheffield 11°.5; and was least at Bradford, 7°.1, at Treston 7°.5, and at Sunderland 7°.7. The general mean was 10°.

Sunderland 7°.7. The general mean was 10°. The mean temperature was highest at Liverpool, 44°, at Sunderland 43°.7, at Leeds 43°.2; and was lowest at Wolverhampton, 30°.4, at Bolton 40°.3, and at Nottingham 40°.5. The general mean was 42°. Rain.—The largest fail was 0.84 inch at Bolton, 0.63 inch at Truto, 0.55 inch at Sheffield; the smallest fail was 0.04 inch at Phymouth, and 0.05 inch at Bristol, Blackheath, and Cambridge. The general mean fail was 0.27 inch.

SCOTLAND: Temperature.—During the week ending February 9, the highest temperature was 53°.8, at Leith; at Greenock and Paisley the highest in the week was 49°.5. The general mean was 51°.6. The lowest temperature in the week was 24°, at Paisley; at Leith the lowest temperature was 31°.4. The agency mean was 22°.8.

The general mean was 27°.8.

The mean temperature was highest at Leith, 45°, and lowest at Perth, 41°.5. The general mean

45°; and rowes was age. 8.

Kain.—The largest fall was 2.03 inches, at Greenock;

Rain.—The largest fall was 0.11 inch, at Edinburgh and Aberdeen. The general mean fall was 0.60 inch.

JAMES GLAISHER, F.R.S.

Answers to Correspondents.

Answers to Correspondents.

Abies Nordmanniana: Duncke. The white substance on the branches is not a fungus, but the work of an insec atilized to the American blight of Apple the Apple of the Apple of

Asi Tennis Court: Old Suburiber. As described by a correspondent in our issue of March 5, 1881, the whole area of the court was excavated to about 8 inches in depth, and the bottom filled in with hard-burned ashes (clinkers), but any coarse hard material would be as good. This was rammed down, and then a layer of less coarse ashes put over it, fisishing off with a still finer stratum. This was pleasant to tread upon, being neither slippery nor hard, and only required nore frequent rolling than gravel. The "court" proper was marked off by strips of wood 1 inch thick

and 6 inches wide, let into the surface of the ashes, and level with it.

BOOK5: Mrs. Milward. Dr. Wallace's Notes on Lilies, published by the New Plant and Bulb Company, Colchester.

CYCLAMENS: $E.\ W.\ &\ S.\ A$ very poor sample as compared with what was shown at South Kensington on Tuesday.

AMP LAWS: F. W. S. Cynosurus cristitus would not be suitable. Either of the Poas, P. trivialis or pratensis, with or without a small admixture of Agrostis, would be preferable. If you make known your requirements to a respectable seed firm they will supply you with a mixture suited to your case. DAMP LAWN:

FLOWER SHOW MANAGEMENT: 7., Lak. 1. Certainly not. 2. You are an amateur. 3. The man should be allowed to show as a cottager.

GOOSEBERRIES: J. K. R. Aoy good free-bearing sort, like Monarch, will suit your purpose.

GRASS LAND: Correspondent. Apply nitrate of soda at the rate of 100 lb. per acre, about the end of March.

NAMES OF PLANTS: Camberwell Park. We cannot name the plant without leaves.—A. M. Acada deal-bata.—T. Griffiths. We do not recognise the variety.
—IV. Inglis. A very good form of Cattleya Triane.
—F. H. Guevina Avellana.—John Parnell. Lissanthe sapida.

sapida.

ORANGE AND CITRON TREES: Enquirer. Hard spring water, if it is aérated in some way before using, by exposing it in an over-ground open tank, would do your trees no harm. Deep planting is very iojurious. Get them up now, and do not cover the top of the ball with more than 2 inches of soil; remove a good portion of the bad soil, prune off diseased and decaying roots. Probe the balls with a thin pointed iron rod, so that water will reach every part. For soil use sandy fibry loam, not much decayed, one-eighth manure, and the same quantity of foely-broken wood charcoal, Ram this firmly round the ball, taking care to fill in all interstices properly, and finish off by leaving a shallow basin round the stems of the diameter of the ball. Water throroughly, but no oftener than is absoshallow basin round the stems of the diameter of the ball. Water thoroughly, but no oftener than is abso-lutely required. Prane in the heads symmetrically, and ply the syringe well night and morning after April till August, except when in bloom, and do not let them earry many fruits till health is restored. When they want top-dressing give them some bone-meal

PRIMULAS: C. G. Pretty, and good in colour, but too inneh like Chiswick Red to be considered distinct.

TAR: An Old Subscriber. It is only a question of de-gree, but the gas-tar is certainly much the most injurious.

VIOLETS: Iny-lea!. You do not say whether the Violets are grown in pots or in the open border; but in any case it is clear the soil does not suit them, and if they are in the open air the climate also may be unfavourable to them, for Violets will not do well everywhere. You ought to be able to obtain them from a cold frame, if the bed is made up of good sound loam and sand mixed with at least a third of leaf-mould.

INTELLIGENT READERS, PLEASE NOTE: — Letters re-lating to ADVERTISEMENTS, or to the supply of the Paper, should be addressed to the Publisher, and NOT

COMMUNICATIONS RECEIVED.—C. N.—J. D. H.—A. T.—W. T. T. D.—J. H. K.—Dr. Weiss, Musich.—W. B.—Dr. Goeze, Griefwald, — Dr. Bejernach, Waveniegen. —W. & T. B. (hanks).—W. Neild.—R. T.—T. B. B.—J. H.—J. Lloyd.—W. L.—Dr. Bonavia.—J. F. J. C.—G. T. H.—E.—B. S. W.—A. R.—I. Hart.—J. R. J.—H. L.—J. L. J.—J. H. C.—J. J. W.—H. W.—J. B.—J. M.—C. F. P.—D. M.—T. & T.—J. T. C.—P. G.—J. P.

Markets.

COVENT GARDEN, February 14.

A SLIGHT improvement in Grapes; other goods remain the same. Business quiet. James Webber, Wholesale Apple Market.

FRUIT .- AVERAGE WHOLESALE PRICES.

Apples, 55-ieve ... 6 - 6. Pears, French, 61 - 62 - 6. Cobs, per 100 lb... 125 0 - ... Plucasples, Editor, 61 - 62 0 - 5. Cobs, per 100 lb... 125 0 - ... Plucasples, Etg., lb. 16 - 20 Frags, per 100 - ... 20 - 60 Strawberries, per 0. ... 20 - 60 Strawberries, per 0. ... 16 - ... Lemos, per 126 - ... 20 - 60 Strawberries, per 0. ... 16 - ... Lemos, per 226 - ... 15 0 - 25 0 Strawberries, per 0. ... 16 - ... Lemos, per 226 - ... 15 0 - 25 0 Strawberries, per 0. ... 16 - ... Lemos, per 226 - ... 15 0 - 25 0 Strawberries, per 0. ... 16 - ... Lemos, per 226 - ... 15 0 - 25 0 Strawberries, per 0. ... 16 - ... Lemos, per 226 - ... 15 0 - 25 0 Strawberries, per 0. ... 16 - ... 16 - ... 16 0 Strawberries, per 0. ... 16 - ... 16 0 Strawberries, per 0. ... 16 - ... 16 0 Strawberries, per 0. ... 16 0 Strawberries, pe

Vegetables - Average Retail Prices.

VECCTABLES — AVERACE RETAIL PSICES.

Artichokes, Globe, 16 d. d. d.

For the state of the state POTATOS -Kent Magnums, 80s, to 100s, per ton; do., Regents 80s, to 100s, ; Champions, 70s, to 80s.

CUT FLOWERS .- AVERAGE WHOLESALE PRICES .

CUT FLOWERS.—AVERAC
Abutilos, 12 bunches 1. d. s. d.
Abutilos, 12 bunches 2. d. s. d.
Abutilos, 12 bunches 3. d. 6 o
Azales, white, 12 spr 0. 6 - 1 o
Camelilas, per dor. . 0 - 1 o
Camelilas, per dor. . 0 - 1 o
Epiphyllum, 12 blms 0. 7 o
Epiphyllum, 12 blms 0. 6 - 1 o
Epiphyllum, 12 blms 0. 1 o
Epiphyllum, 12 blms 0. 1 o
Lidy-Grant 1 o
Lidy-Grant 1 o
Lidy-Grant 1 o
Lidy-Grant 1 o
Epiphyllum, 10 o
Epiphyllum Narcissus (Paper-white) Narcissus (Paperwhite) 6 - 1 6 - 3 0 - 2 coal, 12 sprays 0 0 - 10 0 - 2 coal, 12 sprays 0 0 - 10 0 - 2 coal, 12 sprays 0 0 - 10 0 - 2 coal, 12 sprays 0 0 - 10 0 - 2 coal, 12 sprays 0 0 - 10 0 - 2 coal, 12 sprays 0 0 - 10 0 - 2 coal, 12 sprays 0 0 - 10 0 - 2 coal, 12 sprays 0 - 2 co

PLANTS IN POTS - AVERAGE WROLESALE PRICES.

PLANTS IN POTS — AVER.

Aralia Sieboldi, doz 12 0 0 4 0
Arabor-vite (goldeo).

per dozen . . . 6 0 -18 0
— (common), dozen 6 0 -12 0
— (common), dozen 9 0 -18 0
— (common), dozen 9 0 0 -18 0
— (common), dozen 9 0 0 24 0
— (common), dozen 9 0 24 0
— (common),

AGE WRITESALR PRICES.

L.d s d.

Ferns, in variety, per
dozen . . . 4 o 1:8 o

Ficus elastica, each 1 6 7 o

Foliage Plants, various, each . . . 2 o 1:7

Hyacintis, per doz. 5 o 10 o

Marguente Daby,
per dozen . . . 12 o 1:8 o

Myrtles, per doz. . . 6 c-1:4 o

Palms in variety,
each 6 o 1:4 o

Pimula, sungle, doz. 4 o - 6 o

Solanums, per dozen 6 o 1:0 o

Primula, sungle, doz. 4 o - 6 o

Solanums, per dozen 6 o 5 o

Tulips, per dozen 6 o 9 o

SEEDS.

SEEDS.

LONDON: Feb. 13.—The seed market to-day was thinly attended, and no leature presented itself either of interest or importance. With regard to both red and white Clover seed there is this week no quotable variation; meantime, the demand is quiet, and buyers generally show an inclination to postpone their operations. In Trefoil and Alsike the tendency is downwards. Italian and perennial Rye grasses are also easier. Bird seeds are unchanged. According to the Board of Trade returns the imports last month into the United Kingdom of Clover and grass seeds were, 36,886 cwt., value £90.574; against 46,537 cwt., value £113,747, for January, 1883. John Sanu & Sons, Seed Merchants, 37, Mark Lane, London, E.C.

CORN.

At Mark Lane on Monday the demand for Wbeat was very limited, but little business was transacted, and rates remained the same as on Monday se hnight, but were in a great measure nominal. Flour had a drooping tendency. There was not much doing in Barley, and the same as on the same as on Monday, but had been same as on Monday. Beans and Peas met as one same as on Monday, but had same as the same as on Monday. Beans and Peas moved off in retail at previous currencies. Maize was dull, with moderate arrivals. Barley was quiet and unchanged. Fair arrival of Oats and slow sale, at previous quotations.—Average prices of corn for the week eading February 9;—Wheat, 37. 3d.; sarley, 33. 4d.; Oats, 191. 6d.; For the corresponding period last year:—Wheat, 401. 8d.; Barley, 321. 3d.; Oats, 212. 3d.

HAY.

HAY.
Tuesday's Whitechapel Market report states that supplies were large, and trade very dull, especially for Clover, which was rather lower. Quotatioos:—Prime dol Clover, 955. to 1054.; inferior, 60. to 752.; prime second cut, 905. to 1055.; hay (first meadow), 80s. to 865.; inferior, 405. to 955.; and straw, 285. to 375. per load.—On Thursday there was a fair supply, but the trade was dull.—Cumberland Market quotations:—Superior meadow hay, 847. to 921.; inferior, 60s. to 721., superior Clover, 1001. to 1121.; iolerior, 60. to 845.; and straw, 345. to 385.

POTATOS

POTATOS.

The Borough and Spitalfields Markets reports state that there were moderate supplies and a quiet trade. Quotations:—Magnum Bonuens, 80s. to 100s.; Regents, 80s. to 90s.; Champions, 60s. to 70s.; Victorias, 80s. to 100s. per ton. — The imports into London last week consisted of 396 bags 1 case from Hamburg, 305 bags from Boulogne, 100 bags Bordeaux, 100 tons Landerneau, and 1 case from St. Nazaire,

COALS.

The following are the prices current at market during the week;—Walls Eod—Hettoo, 155.; Hetton Lyons, 135. 6d.; Lambton, 147. 6d.; Wear, 131. 6d.; Thornley, 145. 6d.; South Hetton, 157.; East Hardlepool, 145. 6d.; South Hardlepool, 136. 6d.; South Hardlepool, 136. 6d.

Government Stock.—Consols closed on Monday at roo½ to roo½ for delivery, and rot to ror½ for the account. The prices of Tuesday and Wednesday were roo½ to ror for delivery, and ror½ to ror½ for the account. Thursday's find Jupatations were, ror½ to ror¾ for delivery, and ror¼ for the account.

OR S A L E
6 CALANTHE VESTITA ROSEA.
6 CALANTHE VESTITA ROSEA.
6 CALANTHE VESTITA ROSEA.
6 CALANTHE VESTITA ROSEA.
WM. JORDAN, The Gardens, Tilgate, Crawley, Sussex. Ε,

COOR SOUND BULES, 24: Per dozeo. Apply to WM. JORDAN, The Gardens, Tilgate, Crawley, Sussex.

TREES and SHRUBS suitable for planting on backs and mounds. Can be supplied in so per 1000.

LARCH, 10 of feet, 21:, per 1000; 75/10 to 3/16 feet, 23:, per 1000; 3 to 4 feet, 25:, per 1000; 3 to 4 feet, 26:, per 1000; 3 to 4 feet, 26:, per 1000; 3 to 4 feet, 26:, per 100; 3 feet, 27:, pe

THE RUIN OF NURSERYMEN

May be understood when an Expiring Lease leads to such Prices as the following:—

STANDARD RHODODENDRONS, worth 5, 4, 3, and a guineas, are being sold at 31s. 6d., 21s. 3nd 10s. 6d. BUSH RHODODENDRONS, 8, 7, 6 to 3 feet high, to be sold at 1cs. 6d. 10s. 7s. 6d. ANDROWEDA FLONBROND, and other kinds, 3s. 6d

sold at ter, 62, 10.27; 6sf.
ANDROWEDA FLONRIBUNDA, and other kinds, 3s. 6sf.
SPIRZE A FLIMATA, fine forcing clumps.
The largest stock in Europe.
HODGIN'S and other HOLLIES, perfect specimens, 7, 6, 5;
HODGIN'S and steet HOLLIES, perfect specimens, 7, 6, 5;
HODGIN'S and steet HOLLIES, perfect specimens, 7, 6, 5;
AVENUE TREES, perfect specimens, 72 to 15 feet, at 5st,
CVIECTION of SHRUBS and TREES for general planning,
25t. 10.755 per 100.
Extra large FRUITING TREES of APPLES, PEARS,
TRUIA SPECTA FRUITING TREES of APPLES, PEARS,
TRUIA SPECTA VIRIDIS, 110.3 feet,
WELLING TONIA GIGANTEA, 310.5 feet,
MAHONIA AQUIFOLIA, 12 to 15 inches,
CUPRESSUS ERECTA VIRIDIS, 110.3 feet,
MAHONIA AQUIFOLIA, 12 to 15 inches,
COMMON LAURELS, 110.2½ feet,
CAUCASICUM LAURE

GARDEN REQUISITES.

COCOA-NUT FIBRE REFUSE COCOA-NUT FIBEE REPUSE.

4d. per bushel; 100 for 251; fruck (loose, about 2 tous),

100 for 252; fruck (loose, about 2 tous),

LIGHT BROWN FIBEOUS FEAT; 55; 6d. per sack;

Sacks, 241 sacks, 4d. cach.

BLACK FIBEOUS FEAT; 55; per sack, 5 sacks 241; sacks,

BLACK FIBROUS PEAT; 55 per sock, 3 seek, 164 seek.

COARSE 31 VER SAND, 17 of per bu-bel; 151 per half

YELLOW FIBROUS LOAM, PEAT-MOULD, and LEAFMUULD, 12 per bushel.

SPHAGNUM MOSS, 86 der per sack

MANUKES, GARDEN STICKS MATS, 8c. Write for Free

Price LIST—H. G. SMYTH 37; Goldsmith's Sweet,

Drury Lane (lately called 17A, Coal Yard), W.C.

ORCHID PEAT, specially selected and prepared, as supplied to the leading Trade and private grovers. Good sound Peat for Health, Ferns, Greenbustes Plants, &c., supplied to any quantity from Truckloads to a few Busbels. Price List free.

GATERELL AND SON, Bisterne, Riogwood.

COCOA-NUT FIBRE REFUSE, Nobidity, 1:, per Bag: 15 Bags, 146: 30 Bags, 246: 30 Bags, 24

OCOA-NUT FIBRE REFUSE, newly made, as supplied to the Royal Horticultural Society and principal Nursesymen in England, m sacks at 17, 26 each, or 13 sacks, 187, 50 sacks, 487, 50 sacks,

SILVER SAND, first-class, 6s. per ton PEAT, first-class, 8s. per yard; second-class 6s per yard.
LOAM, first-class, 10s. per yard. On rail, from 4 toos upwards.
The Trade supplied.
W. SHORT, Horticultural Company, Midhutst, Sussex.

T O B A C C O P A P E
ROLL, CLOTH, &c., any quantity.
C. HUGHES, 25, Marchmont Crescent, Edinburgh. PAPER,

USSIA MATS.

ARCHANGEL, TAGANROG, and PETERSBURG MATS Common DUNNAGE from 205, per 100.

The largest assorted stock in London to select from. JAMES T. ANDERSON, 149, COMMERCIAL STREET, LONDON, E,

Peat Soil.—Peat Soil.

Peat Soil.—Peat Soil.

American plants for outdoor planting, by the truck-load of 4, 6, or 8 tons, 13t, per ton. LIGHT FIBROUS FEAT for of 5 carlioads, Azaicas, and all indoor plantis, 66 es, per truck of 5 carlioads, on rail, South-Eastern Knilway, Blackwater Sample bags on rail, Reading station, black, 4ft, or 5 bags, 20ft. Light Fibrous, 5t, per bag, or five bags for 22t, bags included. Cash with order.

HOLDER AND SON, Crown Nursery, Reading









For Beautiful Flowers and Fruits USE CHUBB, ROUND AND CO.'S PATENT

COCOA-NUT FIBRE REFUSE

By CHUBB'S PATENT PROCESS,

By CHUBE'S PATENT PROCESS, As supplied to all the Royal Gardens and Principal Nurseries of Europe.

GURBANTEER ASSOLUTELY PURE. FREE PROMENTS FOR THE PROCESS OF THE PROPERTY PURE. FREE PROMENTS FOR THE PROPERTY PURE PROPERTY PURE THE PROPERTY PURE PROPERTY PURE THE PROPERTY PURE PROPERTY PURE THE PURE THE

DESTROYS ALL SLUGS AND INSECTS. An elegant Bordering to Flower Beds. Combines warmth and cleunliness with valuable antiseptic and deodorising

and cleanliness with valuable anticeptic and deodorsing properties.

Moisters in Heart. Holds Heart in Cold Weathers.

Terms, strictly cash with order. Prices as follows:—Sacks, 12. 6d. each; 10 sacks, 12.; 15 sacks, 128.; 2 sacks, nufacturers, CHUBB, ROUND & CO., Fibre Works, West Ferry Road, Millwall, London, E.

GARDEN REQUISITES.

GARDEN REQUISITES.

PEAT, LOAM, SILVER SAND,

COCOA-NUT FIBER EFFUSE. TOBACCO CLOTH,

PAPER and ROPE, &c.

Superior quality, at exceptionally low prices.

PEAT, best Black Fibrous, from 4s. 6d. per sack.

PEAT, best Black Fibrous, from 4s. per sack.

PEAT, specially selected for Urchifs, from 6s. per sack.

PEAT, specially selected for Urchifs, from 6s. per sack.

LOAM, Yellow Fibrous, s. per bashel.

SILVER SAND, Coarse, L. 6d. per bage.

SILVER SAND, Coarse, L. 6d. per bage, per truck
SPHAGNUM MOSS, 4s. 6d. per bag.

VIRGIN CORK, 38s. per cwt.

The Trade supplied on Wholesale terms.

W. WEBBER, 34, Glengarty Road, East Dulwich, 5.E.

GARDEN REQUISITES.

PEAT, LOAM, SILVER SAND, PREPARED COMPOST, RAFFIA FIBRE,

PRETARED COMPOST, RAFFIA FIBRE,
TOBACCO CLOTH, &c.
Quality the Best in the Market,
All Sacks included.)
PEAT, best brown fibrons. A fe dep resack; 5 sacks for 201.
Dest black black included. 31. def, per sack; 5 sacks for 151.
CAM, best yellow fibrons
PREPARED COMPOST, best included.)
PEAT MOULD included.
PEAT MOULD includ

CHUBB, ROUND & CO., WEST FERRY ROAD, MILLWALL, LONDON, E.

MEREDITH'S VINE and GENERAL PLANT MANURE.

Manufactured and used by Joseph Meredith, when at the Vineyard, Garston.—Great International Horticultural Exhibition held at Hamburg. The Massive Silver Cup, given by Her Most Gracions Majesty Queen Victoria, for the best Specimens of Crances, was awarded to Joseph Meredith. Also many other Graces was awarded to Joseph Meredith. Also many other the shows success largely attributable to the use of this invaluable Manuel. Gold Medals, Dutt. 10. 11. The above successes largely attributable to the value of the above successes largely attributable to the value of the above value of the a

CTARDEN REQUISITES as supplied to the CARDEN REQUISITES as supplied to the Royal Gardens. Cocao-Nut Fibre Reuse, 12. 3d. per sack; 10 for 12a, 15 for 17a, 30 for 30c; 31ll sacks included Trucks (100cs), 33z. Selected Brown Fibrous Peat, 51 eps sack; 5 for 22c. 6d. Black Fibrous Peat, 4c. 6d. per sack; 5 for 22c. 6d. Black Fibrous Peat, 4c. 6d. per sack; 5 for 2c. 6d. Black Fibrous Peat, 4c. 6d. per sack; 5 for 2c. 6d. Per sack; 10 for 2c. 6d. Per sack; 10

TOBACCO PAPER. 7d. per pound; 28 lb. for 16s.; 6as. per cwt,

SPECIALITÉ, Best in the Market.
10d. per pound; 28 lb. for 21s.; 7cs. per cwt.

TOBACCO CLOTH, First Quality. 8d. per pound; 28 lb. for 18s.; 67s, per cwt.

W. HERBERT & CO., 19, New Broad St , London, E.C.

W. HARBERT & C.U., 19, New Broad St., LOHOON, EV.

D. UR E K. A. 1:1 IN S. E. C. T. I. C. I. D. E.,

In prepared by WILLIAM SMITH, Chemist, Rdinburgh,

In Bottles, its., 2a., and 3g. 4d. each.

7s. 6d. per Gallon,

Special quotations for large quantities.

"Chromofords, its Gallashiell, N. B., 7th 75, 7th 75, 7th, Smith:

Dear Six. even and a now tried your Insecticude on all the

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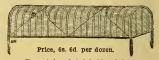
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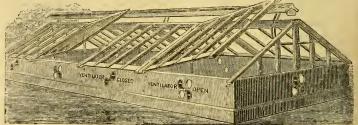
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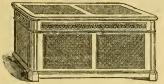
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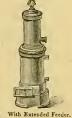
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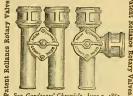
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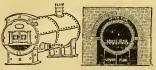
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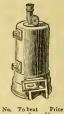
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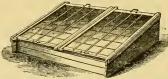
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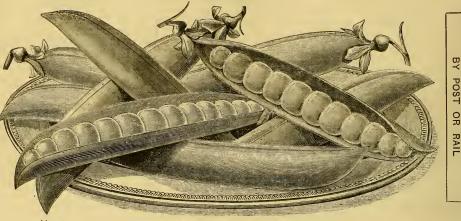
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TEN-WEEK STOCKS. (Large Flowering.)

This is the finest strain in cultivation.

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WORDSLEY. STOURBRIDGE

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Agents for Sound—Messrs, J. Maxiers & Co., Edinburgh and Glasgow.

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NOTICE to SUBSCRIBERS and OTHERS. Post-office Orders and Postal Orders should now be made payable at

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Agent for America: —C. H. MAROT, 814, Chestnut Street, Philadelphia, U.S.A., to whom American Orders may be seot.

ROYAL HORTICULTURAL SOCIETY,

SPECIAL PRIZES for AMARYLLIS, MARCH 25.

An Amateur, anxious to encourage the cultivation of this ine
tribe of plants, offers the following Prizes to be connected for at
the Royal Horticultural Society's Meeting, on TUESDAY,
March 25:—

March 25.—

(A) For the BEST SEEDLING, 121 Prize, £2: 2d Prize, £1.

(A) For the BEST SEEDLING, 121 Prize, £2: 2d Prize, £1.

(B) For the BEST SEEDLING, 122 Prize, £2: 2d Prize, £2.

(C) For the BEST YARIETY, selected from among the plants exhibited in class B. For the best dark variety, £1: for the second best variety, 102. For the best light variety, £1: for the second best variety, 103. Finally 103 Prize Ville Vil

IVERPOOL HORTICULTURAL
ASSOCIATIONS.
EXHIBITION of HYACHITHS, TULIPS, AZALEAS,
&c., will be held in St. George's Hall on MARCH 19. EN.
TRIES CLOSE, March 19. chechell of MARCH 19. EN.
Also GRAND SUMMER, EXCHIBITION will be held in
Selton Park on AUGUST 2 and ANEXT.
Schedules in the Press, and will be ready shortly.

JOSEPH GORE, 34, Ullet Road, Liverpool.

ROYAL BOTANICAL and HORTICUL-TURAL SOCIETY OF MANCHESTER and the NORTHERN COUNTIES.

The GRAND NATIONAL HORTICULTURAL EXHLIBITION of 1884, will open om MAY 30 NEXT. ONE THOUSAND FOUNDS in FRIZES. For Schedules apply to the undersigned.

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GEORGE CADELL, Secretary.

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SPECIAL NOTICE. — Applications for space must be received not later than March 3t, 1884.

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POSES IN POTS.—All the best New and Old English and Foreign sorts, from 181. to 36s. per dozen. These world-Lamed Roses cannot fail to give the greatest satisfaction. Descriptive LISTS on application.

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Beech Hedges at Once. BEECH, Strong, transplanted, 6 to 8 feet, 6 or per 1000. Fine specimen CONIFERS, well transplanted, cheap. Apply to W. JACKSON AND CO., Nurseries, Bedale.

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es distinct, rare, and beautiful sorts in 3-inder pots, fit for 5-inch
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gratis for cash. Over too sorts at same rate
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H. BENNETT, Pedigree Rose Nursery, Shepperton,
Middlesex

WANTED, large Plants of ASPIDISTRA LURIDA VARIEGATA, FICUS ELASTICA, PANDANUS VEHTCHII, DRACÆNA TERMINALIG for Suock, in EXCHANGE for other Plants or Cash. JOHN LEMAN, Olantiph Nursery, Chipwell Row, Essex.

WANTED, Strong QUICK for Gapping.
Send price per 1000 to
Mr. MOODY, 27, Fourth Avenue, Bush Hill Park, Eofield.

WANTED, DECORATIVE FOLIAGE PLANTS, Large and Small.—Lowest cash prices, or RETURN in STOCK.
The Floral Gallery, South Kensington Station, S.W.

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WANTED, Standard APPLE TREES, in quantity, of Warner's King, Cellini Pippin, Keswick Codlin, Wellington. Send quantity and price to B. P., 4t, Wellington Street, Strand, W.C.

I LIUM NEILGHERRENSE.—Good Bulbs of this handsome and rare Lily, 5s. and 7s. 6s. each, 5os. and 8sr. per doze. Mr. WILLIAM BULL, Establishment for New and Rare Plants, 536, King's Road, Chelsea, London, S.W.

Hauss, 330, King's Road, Chelsea, London, S.W.

Mholesale Seed Catalogue.

AND F. SHARPE have posted their

Wholesale CATALOGUE of Home-grown Garden
and Agricultural Seeds, and will feel obliged to those in the
Trade who have not received it if they will make application,
and an additional one will be sent them at once.

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CLIVIA, with large flowers.
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Exotic Nurseries, Ghett.
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LAPAGERIA RUBRA SUPERBA, 30c, per dozen.
The above are strong crowns, rooted similar to Asparagus, and now ready for pottings. Carefully packed in moss.

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Beating kind
Descriptive CATALOGUE free on application.
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SEEDS.—Vegetable, Flower, and Farm, care-fully selected, reliable, and moderate in price. Illustrated LIST, containing copious interesting and useful information,

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Jr. 6d, to 5t. each,
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A SPARAGUS PLANTS. - Splendid stuff, I-yr., a and 3-yr., also 4-yr. forcing. Cheap to clear. FREEMAN AND FREEMAN, Norwich.

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Monday Next.—(Sale No. 660a)

good LILIUM AURATUM from Japan, &c.

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Best 17 Cibot precisein, in fine condition, Home-grown
LILIES, 600 Pearl TUBEROSES from America, 2000
Indian Tuberoses, goo Dwarf ROSES from France, several thousand ASPARAGUS PLANTS from Holland, choice
CLADIOLI, TIGRIDIAS, BEGONIAS, GLOXINIAS, &c.

On view morning of Sale, and Catalogues had.

On view morning of Sale, and Catalogues new.

Wednesday Next.—(Sale No. 650a)

HARDY PLANTS and EULBS.

MR. J. C. STEVENS will SELL by
Coveat Garden, W.C., on WEDNESDAY NEXT, February
27, at balf-past 12 o'Clock precisely, first-class Standard, Half-standard, and Dwarf ROSES from welk-news English Nurseries: FRUIT TREES, CLIMBING FLANTS, EVERCREENS, TIGRIDIAS, and other BULES, &c.
On view morning of Sale, and Catalogues had.

On view morning of Sale, and Catalogues had.

Thureday Next.—Cale No., 660;)

NEW ODONTOGLOSSUM.

M. R. J. C. STEVENS will SELL by
AUCTION, at his Geat Rooms, 3, King Street,
Covent Garden, W.C., on FHURED AND SEAT,
Ballogues of COLOGO STATE OF THE STA

Flowering orchids.

Flowering Orchids.

TR. J. C. STEVENS begs to announce
that his NEXT SALE of FLOWERING ORCHIDS
will take place on WEDNESDAY, March 12. Entries for
this Sale should be sent un orlater than THURSDAY, March
Auction Rooms and Offices, 38, King Street, Covear Garden, W. C.

The Valuable Collection of Orchids and other Plants formed by the late Robert Hanbury, Eso.

M.R., J. C. STEVENS has received instructions from the Executors to offer for SALE by AUCTION EARLY IN APRIL, without the least reserve the valuable COLLECTION of ORCHIDS and other PLANTS formed by the late Robert Hanbury, Esq., The Poles, Ware and Offices, 38, King Street, Cevent Garden, Strand, W.C.

MR. J. C. STEVENS has received instruc-tions from the Executors to offer for SALE by AUC-TION, EARLY in APRIL, the valuable BUTANICAL LIBRARY formed by the latte Robert Habbury, Say, of the LIBRARY 10 Three by the Independent of the Poles, Ware.
Further particulars in future advertisements.—Auction Rooms and Offices, 38, King Street, Covent Garden, W.C.

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Lions from Mr. F. Sander to OBLE to Accorded, whis Great Rooms, 38, King Street, Covent Garden, W.C., a superb importation of a new white form of LeLIA ANCEPS of great beauty. The flowers are white and 5 inches in diameter, peals frond, and specific products of the product of the produ

Further particulars in Inture Advertisements.

Important Sale of Handsome English-grown CAMELLIAS, 1½ to 3½ feet, beautifully set with bloombuds: AZALEA INDICA, and other GREENHOUSE PLANTS: selected FRUIT TREES, 500 fine Stindard and Dwarf ROSES, bardy AMERICAN PLANTS, CONIFERÆ, SHRUBS, DAHLIAS in dry roots, &c.

MESSRS, PROTHEROE AND MORRIS will SELL by AUCTION, the above, at the City Auction Rooms, 38 and 39, Gracechurch Street, E.C., on TUESDAY, February 26, at 12 of Clock precisely.

On view the morning of Sale. Catalogues had at the Rooms at 8, New Broad Street, and 67 and 68, Cheapside, E.C.

Tuesday Next.

SPECIAL SALE of ORCHIDS in Flower.

MESSRS. PROTHEROE AND MORRIS

will SELL by AUCTION at their Central Sale Rooms,

for and 48, Cheapside, E.C., on TUESDAY NEXT, February 26, at half-past 12 o'Clock precisely, nearly 400 lots of

ORCHIDS in Flower, comprising plants from some of the
largest collections in the country, Amongst them may be mentioned:

tioned:

Lycaste Skiuneri alba, two plants
Cattleya Wasscewiczii delicata, splendid specimen

Trianze Backhousianum

"many superb varie"i", many superb varie"i", many superb varie"i", hybrid varieties

"Marneri
Oncidium Marshallianum, extra fine specimea
On view morning of Sale. Catalogues may be had at the

On view morning of Sale. Catalogues may be had at the Sale Rooms, or at the Auctioneers' Estate Offices, 8, New Broad Street, E.C.

Thursday Next.-Conifer Seeds Thursday Next.—Conifer Seeds.

IMPORTANT TO NURSERYMEN.

INFORTANT TO NURSERYMEN.

MESSRS. PROTHEROE AND MORRIS

will SELL by AUCTION, attheir Central Sale Rooms,
67 and 68 Cheapade, B.C. on "HURSDAY NEXT.
February 61, that Inguist are Clock precisely, a consignment of
CONIFER SEEDS, including Cupressus, Piceas, Pruss,
Yuccas, Thuias of forts, and many others.

On view morning of Sale, and Catalogues had.

Thursday Next.—Roses and Bulbs,
MESSRS. PROTHEROE AND MORRIS
will SELL by AUCTION, at their Central Sale Rooms,
67 and 68, Cheapside, E.C., on THURSDAY NEXT,
February 28, at half-past zo 'Olcok precisely, zeoo Standard
and Dwarf ROSES, true to name, from a well-known English
Mursery; an ascertment of Hardy English-grown Lilles,
Springerichung IU Lis, and charte Combington Converse morning of Sale, and Caalogues had.

Friday Next.

MESSRS, PROTHEROE

are instructed by Mr. F. Sander to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside,
E.C., on FRIDAY NEXT, at half-past zo 'Olcok precision,
yaluable imported ORCHIDS, including Cattleyss, Odoatoglossums, &c.; also several good Orchids in bloom.
On view morning of Sale, and Catalogues had as above.

On view morning of Sale, and Catalogues had as anove.

Sunbury, Middlesex.
Only 16 miles from London.
By Order of the Executors of the late fir. R. N. Osborn.
IMPORTANT to FLORISTS, NURSERYMEN,
BUILDERS, and OTHERS.
MESSRS. PROTHEROE AND MORRIS
Rooms, 67 and 68, Cheapside, E.C., on THURSDAY, March 6, at a °Clock precisely (unless an acceptable offer be made in the meantime).

Rooms, 67 and 68, Cheapside, E.C., on THURSDAY, Marche, at a O'Clock precisely dunless an acceptable offer be made in the measure)—

Be important FREEHOLD ESTATE, koown as Coborn's Old Nursery, Sumbury, about ten minutes 'walk from the Railway Station, containing an area of 11% Acres, or thereabouts, of extremely productive Land; also the Brite-abouts, of created principles; ranges of Pits, and other capacity of the principles of the principles of the Archive from the Railway Station, to the principles; ranges of Pits, and other capacity of the principles; ranges of Pits, and other from of Messrs, Osbern eajoyed a wide reputation for the grant the Land is acceedingly fitted for this purpose. To Florists also who must of necessity remove further from London, the property presents also especial features. The Glass Brections were built regardless of expense, and are fitted with all requisite appliances for growing of FREEHOLD BUILDING LAND adjoining Lot, containing a total area of gaces or thereshous, and possessing important frontages to Windmill and Nursery Roads, of nearly 60 feet, particularly adapted for the erection of first-class villa residences.

Bell-WARD, AND WHITFIELD. Solicitors, 5, Southampton Street, Eloomsbury, London, W.C., and of the Auctioneers and Surveyors, 67 and 68, Cheapside, and 8, New Broad Street, E. C.

Foots Cray.

By Order of the Executrix.

MESSRS. PROTHEROE AND MORRIS

Nusery, Foots Cray, on TUESDAY, March 1s, by order of
the Executrix of the late Mr. R. Sim, a further portion of the
NUSERY STOCK, Fruit Trees, Roses, Sec.
Further particulars next week, VESINESS is FOR SALE,
The old each of the Auctioneers will be pleased to furnish
full particulars on application.

off easy terms, and the recommendation of the late and th

Preliminary Notice.

THE GENERAL HORTICULTURAL COMPANY (John Wills), Lumited—In Liquidation.

MESSRS. PROTHEROE AND MORRIS
beto announce that they have received instructions to offer by AUCHON, in MARCH, the whole of the Stock of STOYE and GREENHOUSE PLANTS and UTENSILS in TRADE, at the Melbourne Nursery, Anerley.

Further particulars as to this and other Sales will be duly advertised.

67 and 68, Cheapside, E.C.

WANTED, a Small FLORIST and NUR-SERY BUSINESS, or place suitable; not particular as to town or place.
VERITAS, W. Fawn, Stationer, Stokes Croft, Bristol.

VeRIAS, W. Fawn, Stationer, Stores Crott, prison.

To BE SOLD, a capital large GARDEN of Acres, quite beyond the site of those allowed to most moderate sized houses in the district, with the Residence, which has seven Bedrooms, Dressing room, Bath-room (hot and cold), Drawing and Dnining-rooms, Breakfast-room, large Hall, with beneath available for Billiard-room. For many years occupied by the present owner, at Beckenham, Kent, a short distance from the Crystal Palace. Price \$3000.

Mr. LEVENS, Autoriomes Packet And Messes, Mr. LEVENS, Autoriomes Packet And BRIDGE-WATER, 80, Cheapside, E. C. (37,394-).

Nursery and Seed Business to be Disposed of.

TO BE DISPOSED OF, in consequence of
failing health of the Proprietr, the old-established
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style of Joseph Tremble & Son, Penrith, Cumberland.
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TO BE SOLD or LET, with Possession,
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TO BE LET, from March 25, the CARLTON ROAD NURSERY (about three acres), with Cottage and Seed Shop.
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PRUITERER, FLORIST, and GREEN-GROCER.—First-class family trade. Best prices. Agent for Carter Patterson. Registry Office for Servatas. John Gardening could be added, and any amount dose. Present hands four years. Only wanter on the first present for the property of the present property of the present property of the property of the present present present property of the present present

Landscape Gardening.

THE FORMATION of NEW, RENOVATION or ADDITION to existing GARDENS,
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TO EXHIBITORS.—Lapageria rubra superba, fine plant on trellis, 4 feet by 3 feet; Stephanonis floribunda, 4 feet by 3 feet; Lyora Williamshi, 5 feet by 4 feet; Allamanda nobilis, 4 feet by 3 feet; Ixora Prince of Orange, 3 feet by a feet; Bougainvilles qizbra, 4 feet by 3 feet; hadove are for Sale cheap, for want of room. Apply for price to W. JaCKSOW, Bakedows, Kiddermisster.

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Dwarf maiden PEACHES, NECTARINES,
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A SPARAGUS.—Early Purple Argenteuil, the earliest and finest in Covent Garden. Seed from per roo.

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TLOWERING SHRUBS.—Lilac, Mock
Orange, Weigela, Almond, Althae, Berberis, Cherry,
Cyrisus, Hydrangea, Hypericum, Mezercum, Ribes, Spiraca,
Rhus, Viburum, &c., 8t. per dozen. Descriptive LiST fee.
RICHARD SMITH AND CO., Nurserymen and Seed

LANE AND SON have a large stock of Green HOLLIES, suitable for Hedges, &c.—1 foot, 215. per 100; 2 feet, 405. per 100; 2 feet, 405. per 100; 2 feet, 605. per 100. The Nurseries, Bekhamsted, Hetts.

PEAS.—William I., Kentish Invicta.—Surplus stock. Samples and price. FREEMAN AND FREEMAN, Norwich.

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30,000 of excellent stout transplanted LARCH FIR, a4 to 30 inches, 200, per 1000; 18 to 30 inches, 145, per 1000.
20,000 SCOTLI (fine), 2s to 18 inches, 146, per 1000.
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If the whole Samole, 35, per 100, and to Landon.

Sample, 3s. per 100.
CARTER'S TELEPHONE PEAS (true), 7s. per gallon.

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HOME GROWN VECETABLE and FIELD SEEDS.

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AND F. SHARPE are prepared to make and ARRICULTULAL SEEDS and ARRICULTULAL SEEDS warieties of VECETABLE and ARRICULTULAL SEEDS.

The quality of the seeds is excellent, and the prices are very low.

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SANDY PRIZE ONION.—Best for Exhibition and General Use. Seed, from large show bulbs only, 11. 6d. per packet. Prizes offered.
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CUINEA BOX of SPECIALITIES, containing 6 pairs each CARNATIONS, PICOTEES, and PINKS, 12 Old Crimson CLOVES, 6 White Cloves; 12 PANSIES and VIOLAS to name; 12 PYRETHRUMS to name. Forwarded package and carriage free on receipt of cheque or Fost-office Order.

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The following being on land let for building purposes, and must be cleared by March next, will be given at the following prices. All are offered so long as unstold: T TREES.

priess. All are offered so long as unsold:

100,000 transplanted LARCH, stout and clean, 2 to 3 feet,

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100,000 per roco.

100,000 a-yr. Seedling, r-yr. transplanted, SOOTCH FIR,

Native, 4t. per 1000.

100,000 a-yr. Seedling, a-yr. transplanted, NORWAY

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20,000 a-yr. Seedling, x-yr. transplanted, PINUS LARICIO,

12t. per 1000.

10,000 a-yr. Seedling, x-yr. transplanted, PINUS MON
10,000 a-yr. Seedling, x-yr. transplanted, yr. transplanted, yr.

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Smith's Improved Long Frame, iz, per packet; Smith's
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Broad Bea; Smith's Inproved Windsor, od, per quart.
Broad Bea; Smith's Inproved Windsor, od, per quart.
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50,000 LARCH, 1/4 to 3/4 feet.
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IN ONE HUNDRED NAMED VARIETIES, Carriage Paid to Edinburgh, Newcastle, Hull, or
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Apply to Mr. G. COX, Leigh Park, Havant, Hants.

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SEED POTATOS.—Several Tons Scotchgrown Reading Hero for sale. Price (very moderate)
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10 1005 MYATT'S EARLY ASHLEAF.
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20 1005 DALMAHOYS.
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Also CHAMPIONS, DUNDAR REGENTS, and MAGNUM BONUM. For price, &c., apply to
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TN ONE HUNDRED DISTINCT NAMED
VARIETIES, fine well-rooted plants, from 1 to 2 feet
high. Carriage Paid to Edinburgh, Newcastle, Hull, or London,
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TIDLER'S VICTORY.— This Potato was introduced last season. Has proved to be an excellent disease resister, cropper and cooker. Wherever tried has given the greatest satisfaction. Price 2s. 6d. per peck, 8s. per bushel, 22s. 6d. per sack, free on rails. Full particulars from Fibration Control C

SEFUL COLLECTIONS of SEEDS for various sited gardens, the selection being the result of unbinse corporation. For particulars see illustrated List, which will be not repeated by the selection being the result of while the convenience of those who prefer to make their own choice.

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Final Clearance of
HERBACEOUS and ALPINE PLANTS,
Fine Clumps, cheap. LIST free.
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TO FORESTERS and OTHERS.—We have shout 50,000 well grown LARCH to dispose of, part of them 2 to 3 feet high, and the rest 20 to 24 inches high, stout and good. Larger LARCH, 185, per 1000. Samples sent on application. Also good OUICK, from 12s. to 14s. per 1000. GEORGE STEPHENSON, Nurseryman, Seedsman, and Florist, Appleby, Westmoreland.

MITCHELL having obtained a Stock of this extraordisary variety of GOOSEBERRY, is now prepared to offer, for the first time, Trees and prepared cuttings for present planting. To all Growers, Salesmea, and Euyers of Fruit attending Covent Garden Market, this fine arrately is too well known to need description, but to others it may be described as the largest, greatest cropper, and earliest may be described as the largest, greatest cropper, and earliest per constant of the control of

HOLLY for HEDGES, 72 to 15 inches, 25s.; 15 to 24 inches, 25s.; 16 to 24 inches, 5or. per 100. Forest List, containing heights and prices of well-grown Quick, Ash, Larch, Spruce, Pines, Oaks, Underwood, &c., Iree, RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

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100-Dwarf Roses-100

IN ONE HUNDRED FINEST NAMED

YARIETIES, Carriage Paid to Edinburgh, Newcastle,
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It is a well-known fact that Roses taken from a cold climate
such as we enjoy in Aberdeen, give greater satisfaction than if
taken from a Southern warm climate. Our Roses always give
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JAMES SMITH AND SONS, Darley Dale Nurseries, near Matlock, beg to offer the following in nice plants:—

AZALEA PONTICA, 1 to 1½ foot, 202. per 100, or 1928, per 1000.

BERBERIS DARWINII, 1 to 1½ foot, 282. per 100, or 1502. per 1000, or 1502. per 1000, or 1502.

PRIZE COB FILBERT TREES.—Gentle-men destrous of obtaining the true WEBES PRIZE COB FILBERT TREES for present planting, should send their orders to

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Price LISTS on application.

T O T H E T R A D E. SULTION'S VELLOW INTERMEDIATE MANGEL, 356.

SUTTON'S VELLOW INTERMEDIATE MANGEL, 35s. per cyt. BERKSHIRE PRIZE YELLOW GLOBE, 35s. per cyt. CHAIDPION YELLOW GLOBE, 35s. per cyt. SHAPPE'S IMPROVED PURFLE-TOP SWEDE, 205. SHAMKGC'E TURPLE-TOP SWEDE, 205. PER UNDER SHAPPE'S HORK-TOP SWEDE, 25s. per bushel. HARTLEY'S SHORK-TOP SWEDE, 25s. per bushel. DEVONSHIRE GREY-STONE TURNLY. 18s. per bushel. PURPLE-TOP MAMMOTH, 18s. per bushel. PURPLE-TOP MAMMOTH, 18s. per bushel. LINCOLNSHIRE RED GLOBE, 35s per bushel. LINCOLNSHIRE RED GLOBE, 35s per bushel. GREEN-TOP SCOTCH VELLOW, 20s. per bushel. BRADFIELD HALL YELLOW, 20s. per bushel; a very quick grower and very hardy. EASTE'S KENTISH INVICTA PEA, 60s. per quarter. Apply to A DUCKERING, Seed Grower and Merchant, East Barkwith, Wragby, Lincolnshire.

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VARIETIES, Carriage Paid to Edihurgh, Newcastle,
Hull, or London, for 55 cash.
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A SPARAGUS. — This delicious vegetable does not require half the expense often iocurred. For directions see Illustrated Seed List, free. Strong roots, 2e. 6d. per 100; extra strong, ditto, 2-yr. old, 2e. 6d. per 100; extra strong, ditto, 2-yr. old, 2e. 6d. per 100. RICHARD SMITH AND CO., VOICELER.

FIVE THOUSAND DAHLIAS, Double and Single, dry roots. CATALOGUES on application. KELWAY AND SON, Langport, Somerset.

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STRONG CANES for immediate Fruiting,
72. 6d. and ro. 6d. each; for Plauting, 3s. 6d. and 5s.
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DWARF-TRAINED FRUIT TREES, WARF - TRAINED FRUIT TREES, extra good. APRICOTS, PEACHES, NECTAR-INES, APPLES, PLUMS, CHERRIES: also very fine Pyramid and Standard PEARS, stong, for Orchards. Chichester ELMS and POPLARS, g to 15 feet, Dwarf ROSES, Glorie de Dijon on Frier, hue Standard and Dwarf ROSES in great variety.

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To Osier Growers, Basket Makers, and Nurserymen. RADFORD AND SONS, Veovil, Somerset, now Grow and Cut yearly 100 Acres and upwards of OSIER BEDS, and will quote prices to the Trade, according to quantity required. Samples and prices of Osier "Sets" on application.

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THE LAWSON SEED AND NURSERY
COMPANY (Limited), Zeiburgh, have an immense
Stock of the leading kinds of Seedling and Transplanted
FOREST TREES and SHRUBS, &c.—all in healthy condition and prices moderate. Special offers on application.

DETUNIA GRANDIFLORA.—Our strain is the finest offered, and which has been brought to its present perfection by over thirty years' careful selection ad hybridisation. Flowers beautifully mottled and striped; very floriferous. Single, as per packet.

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TIGHTY THOUSAND CLEMATIS, in Pots, of all the floest double and single varieties (some of the flowers of which become 10 inches across, and are of every shade, from pure white to the darkest purple, for climbing and bedding, from 122 to 242, per dors, store, and are of the RICHARD SMITH AND CO., Nurserymen and Seed Merchauts, Worcester.

BALSAMS.—Saved only from very select.

double flowers.

Rateance "Handar & Card manufacture and present to proceed an
the good qualities of the best type of double flowers. They are
of good size, well filled out, eds. the scatters and pure whites,
are in every way first-class."—Gardeners' Chronule, July 21,
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Eight varieties, separate, 2s. 6d. HENDER AND SONS, Nursery, Plymouth.

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HODDEYDRONS, Standard, named, with
good heads
foll of the property of the following control of each.
Dwarf, do, do, f. and f. 100. per 100.
FERNETTYA MUCRONAIA, 257. per 100.
MENZIESH POLIFOLIA ALBA and RUBRA, 205. per 100.
AZALEA PONTICUM, strong bushy plants, 1 foot, 257. per 100.
AZALEA PONTICUM, strong bushy plants, 1 foot, 207. per 100.
EUONYMUS OVATA AUREA, in pots, 207. per 100.
EUONYMUS OVATA AUREA, in pots, 207. per 100.
CUPRESSUS MACROCARPA, twice transplanted, 2 feet,
PINUS 302. per 103. 3 feet, 405. per 102.
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UPRESSUS LAWSONIANA, 4 feet, 501. per 102.
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RETINOSPORA PLUMOSA AUREA, 1 foot, 507. per 102

CRYPTOMERIA ELEGANS, well rooted, very fine, 2 feet, 75, per 100; 22, to 3 feet, 18t, per dozen.
CEDRUS DEODARA, beautiful specimens, 4 to 5 feet, 2s. 6d.

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application.

F. R. U. I. T. R. E. E. S. (74. acres).—
APPLES, PEARS, PILUMS, CHERRIES, PEACHES,
PECTARINES, APRICOTS, &c., as Standards, Dwarfs,
Pyramids, Bushes, Cordon and Traiced Trees in great variety
INFS, excellent canes, 3r. 6d. to roc. 6d. ORCHARY,
VINFS, excellent canes, 3r. 6d. to roc. 6d. ORCHARY,
Chescriptive I. LiST, containing a sketch of the various forms of
Perces, with directions for Cultivation, Soil, Drinniage, Manure,
Pruning, Lifting, Cropping, Treatment under Ulass; also information as to Synonyms, Quality, Size, Form, Skin, Colour, Fiesh,
Flavour, Use, Growth, Duration, Session, Price, &c., free by post.
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A NDRÉ LEROY'S Nurseries, at Angers, France, the largest and richest in Europe in Collections of FRUIT and ORNAMENTAL TREES, SHRUS, CAMELLIAS, ROSES, SEEDLINGS, STOCK FRUIT TREES, & CATALOGUES sent on application. Freight from Angers to London, vid Honfleur, about 2s. 6d, per 100 lb. Medal of Honour at the Universal Exhibition at Paris in 1858. O'ders must be addressed to Messrs, WATSON AND SCULL, 90, Lower Thames Street, London, E.C.

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W. W. JOHNSON AND SON, Seed Growers and Mer-

RHODODENDRON NOBLEANUM, nice DHODDENDRON NOBLEANUM, nice
bushy plants, 9 to 12 inches, 121, per dozen; other choice
named sorts, about 2 feet, bushy, 21, 64, each; PONTICUIA,
transplanted, bushy, 21 to 18 inches, 181, per ADNRE Common,
14 to 2 feet, fune, 141; a to 3 feet, 175, 6d, per 100; CAUCASICUM, 14; to 2 feet, 51; 1 to 34; feet, 201, per 100;
ROTUNDI FOLIA, 15; to 2 feet, 321, per 100. Black Austrian
PINE, 15 to 2 feet, finely rooted, 242, per 100. Own root
ROSES, in posts, my selection, 32 per 4 per 100. Own root
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J. J. MARRIOTT, Highheid Nurseries, Mattock.

M.R. JOHN DOWNIE, SEEDSMAN, &C., the is now seeding out all sorts of VEGETA BLE and FLOWER SEEDS, new, select, and geouine, at moderate prices, free by post or rail; also full collections of FLORISTS FLOWERS of all MINISTERS and VIOLAS, bis unique and famed varieties of Mr. J. D. asks the kind indulgence of those Friends who have favoured him with Orders for his new Pansies of #84, stock being limited he will not be able to send them out unite automation and the second process of the control of the second process of the

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TO THE TRADE.

LARCH FIR, 13/4 to a feet, 16x, per 1000; a to a3/4 feet,
171. 6d. per 1000; 3 to 3/4 feet, 18x. per 1000; 3/4 to 4/4

leet, 20x, per 1000.

SCOTCH FIR, 2-yr. seedlings, £5 per 100,000; 9 to 12 inches,
7x. per 1000.

SCOTCH FIR, 2-yr. seedlings, 4.5 per 10-300 ; 9 to 12 inches, 2-yr. per 1000; 9 to 9 inches, 2-yr. per 1000; 9 to 12 inches, 2-yr.

SEED POTATOS for SALE. — Sutton's "First and Best," guaranteed true to name, and a fine seed sample. Price 8s, 6d, per cwt., hag included. Cheaper in larger quantities. Apply to
J. F. CURROR, Murrayfield Farm, Midlothian.

WHITE FLOWERS FOR EASTER.—

10,000 extra extra large ayr, old plants of the Hybrid
White CLOVE MRS. SINKINS; each plant will robe
a basket of fine large blooms from 1/2 to 3 inches across. Per
100, 401. and 501; ordinary size for planting per 100, 301.
W. WEALE, Taplow, Backs.

Asparagus, Asparagus.

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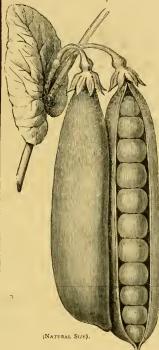
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Gardeners' Chronicle.

SATURDAY, FEBRUARY 23, 1884.

CUT FLOWERS.

ROM the days of old, when Rome's champions and athletes were crowned with Laurel, down to the present, flowers for personal adornment have been more or less held in estimation by all civilised nations. In fact, the extent to which these gems of earth find favour might be taken side by side with an appreciation of the arts of sculpture or painting, as a measure whereby to gauge the degree of civilisation that a people has attained. If this be correct, it cannot be said that there is a retrograde movement at the present day, for if there is one thing more remarkable than another it is the immense increase in the demand for flowers that has taken place within the last decade or two of the century. Nor is this confined to those possessed of the greatest wealth, and who can afford to pay extravagant prices for costly rarities in flowers as in other things, although in their case the demand may be safely set down as having increased tenfold within the time named. In what is understood as middle-class society the use of flowers has alike grown, and it has reached a lower stratum, as may easily be seen by a glance at the market in any manufacturing town, where will be seen loads of posies made of Primroses, Daffodils, Wall-nowers, Dasties, Roses, Pelargoniums, and other welcome favourites, which are sold by thousands in these hives of labour; even the costermonger who supplies the residents in the back streets with Potatos and Cabbages has his bunches of common flowers in their season of plenty, for which he finds ready sale.

As a natural consequence, along with an increased liking and demand for flowers, there has been a marked improvement in their arrangement, whether in the decoration of a table, the filling a vase or a basket, the formation of a wreath, or of a bouquet or a button-hole. In all these cases the arrangement can now be effected by many in a way that admits of the work being associated with productions of art. It will be considered that this is not claiming too much when we see that groups of flowers are often subjects that painters of note take to delineate, for surely an arrangement of flowers that is faultless from an artistic and elegant point of view has some little pretensions to be classed with its representation. And it may be well here to hint that those who would excel in the arrangement of flowers will do well to study the simple elegance in the grouping and association of the colours on the canvas of acknowledged masters of the art in this particular branch of painting; in such there will be found no crowding, or formality in the groupingnothing to show that there was a superabundance of rich materials at command, such as is too often apparent in floral arrangements, by which all pretensions to elegance are destroyed. Neither will there be found that indescribable mixture of colours and shades so destructive of harmony; in place of these a few kinds, often not more than one or two, are introduced to the picture, loosely put together so that each flower has a space between it and its neighbour equal to or more than that which it fills. A table arranged in this way, or a vase or basket, in

which only a sufficient quantity of flowers of a few sorts and colours is used, with enough green foliage, is so much superior to the overdone affairs frequently met with that it would scarcely seem needful to urge it were it not that the opposite course is so often followed.

In table decoration better taste prevails than when the cumbrous high epergnes were in general use. Even the improved stands, made as light as possible, and which, when nicely filled with a few suitable flowers, Ferns and the like, had a chaste elegant appearance, have, with many, given place to low shallow appliances not many inches high, or to a moss bed hid over the cloth in which the flowers and greenery are placed. Here, again, may be seen the advantage of using only a few kinds of flowers; equally limited in their colours, and with a no larger quantity than may be needful to avoid meagre appearance. In this kind of decoration, as in all others where flowers are used, there is one important matter that should never be overlooked-that is, a due regard to proportion in the size of the flowers for the particular use they are to be put to, or that of the receptacle in which they are to be placed. Big Poppies, Pæonies, or Lilies, and full-sized Richardias, are admissible, when furnished with long stalks, in large vases proportionate in size to the flowers they contain; but otherwise they are incongruous in the extreme. As to the big, overgrown Sunflowers that one sometimes sees used in floral decorations, they simply afford an evidence of the lengths some people will go to in imitation of any absurd fashion, rather than think for themselves as to the fitness of things. The same principle as to suitability in size in the flowers used holds good in whatever way they are disposed. Flowers that are individually large and massive are wanting in the elegance present in those that are smaller; of the latter there should always be enough present to prevent the sem-blance of a formal even surface; to further guard against this the targest nuwers in each combination should be relieved by others protruding further than them, no two placed by each other being equal in height. If this course be not followed the production will not unlikely result in a display of formal informality, which is only a degree less objectionable than the

Following the same law of proportion, the largest blooms should always be placed at the bottom, or lowest in the arrangement, whether it is a vase, a wreath, a bouquet, or anything in which a combination of various sized flowers are used. Many a bouquet that otherwise would have been a creditable production is spoilt by having a big Camellia or something similar stuck right at the top. Stands of the March shape, or any of the numerous modifications of them now existent, should always have whatever large flowers are used for furnishing them placed in the base, and principally at the outer edge. Colour has also a good deal to do with apparent size; high or dark coloured flowers fill the eye more than white or light shades, conveying an idea of size. To put high coloured flowers in the upper part of stands of this description is a glaring mistake; the largest and darkest should be at the base, such as are medium in size and colour next above, with the lightest-coloured and smallest at the top. The same principle is applicable in the case of an ordinary vase, stand, or basket. The largest size and deepest colours should be used in the base or foreground of the arrangement, with the smaller more elegant forms and lighter shades at the top. Stiff, erect spikes, even if composed of individually small flowers, can rarely be used with such good effect as those that are flexuous and drooping.

The rule which applies to the use of only a fewflowers loo ely put together, as advised in the filling of vases, stands, &c., cannot be followed to the letter in making hand-bouquets, as if so

sparingly used in these, having to be carried about, they would directly have a flagged, straggling appearance that could not be tolerated; at the same time, any approach to crowding the material together should be avoided. Better to err in the opposite direction; each flower should have enough room to only slightly touch those next to it; no crushing together ought to be allowed. To avoid their getting packed too close, there is no recourse except mounting almost every flower on a separate piece of wire that will hold them in the required position. Here again the largest flowers should always be placed near the base, and the deep colours also kept well away from the top, in bouquets as well as in all other combinations of flowers of high or dark colours, such as the different shades of red and purple, or dark blue-a little goes a long way-and they should be very sparingly used, or in place of the required chaste elegant appearance a glaring monstrosity will be the inevitable result: far better have a bouquet too light coloured than too high. As to the Ferns and other green foliage indispensable in all flower combinations, these should never be used with a sparing hand. Fear of hiding the flowers by using enough green material spoils half the arrangements of the kind that are attempted. Not only should there be sufficient green garniture to form a base, but also spersed amongst the flowers. A mistaken idea, that rare productions must necessarily be better than such as are commoner, leads to the native grasses, many of which are unequalled for their elegance, not being used nearly so much as they deserve to be even in the season when they are in suitable condition. As to the size hand-bouquets are now made it is useless to speak, it is simply a question of elegance and adaptability on the one hand, and fashion on the other; and the latter so far prevails with many that the former essentials are not considered worth a thought.

What may be called ladies' button-hole flowers, or the sprays that are now so much worn, are fast following the fashion of the bouquets in their propertion of size, and it is hard to say where they will stop when double red Paconies and Sunflowers are worn in this way.

The competitions in the various arrangements of cut flowers now so generally introduced by horticultural societies, have no doubt done much in furthering a better taste in such matters. Yet it is evident in this, as in everything else where the touch of the artistic hand is required, that those who can excel must have a natural taste for the work, otherwise the beautiful combinations of form and colour so frequently forthcoming from the master hands in this kind of decoration would not stand out so markedly in advance of the general run of such productions.

GUMMING IN FRUIT TREES.

AN essay, by my friend Dr. Beijerinck,* on the contagion of the gum-disease in plants, which has lately been published by the Royal Academy of Sciences at Amsterdam, contains so many facts likely to be useful in the study of contagion that I venture to ask you to iosert a brief notice of its chief contents. The gum disease (gummosis, gumfux) is only too well known to all who grow Peaches, Apricots, Plums, Cherries, or other stone fruits. A similar disease produces gum-arable, gum-tragacanth, and probably many resins and gum-resins. It shows itself openly in the exudation of thick and sticky or hard and dry lumps of gum, which cling on branches of any of these trees where they have been cracked or wounded through the lark. To any students of medicine or pathology who live within range of such trees, Dr. Beijerinek's observations may suggest some interesting researches.

Dr. Beijerinck was induced to make experimental inoculations of the gum-disease by suspicions that, like some others observed in plants, it was due to bacteria. He ascertained that it is in a high degree contagious, and can easily be produced by inserting the gum under the edge of a wound through the bark of any of the trees above named. The observation that heated or long-boiled pieces of gum lose their contagious property made it most probable that a living organism was concerned in the contagions; and he then found that only those pieces of the gum conveyed contagion in which, whether with or without bacteria, there were spores of a relatively highly organised fungus, belonging to the class of ascomycetes; and that these spores, inserted by themselves under the batk, produced the sume nathelogical changes as did the pieces of gum

same pathological changes as did the pieces of gum. The fungus thus detected was examined by Professor Oudemans, who ascertained it to be a new species of Coryneum, and has named it Coryneum Beijerinckii. Its characters, which are minutely described, are chiefly that it has a cushion-like stroma, consisting of a bright brown parenchyma, on which numerous conidia stand on colourless, unicellular and very slender stems, about as long as themselves. The conidia are small, cask-shaped, about one-thirtieth of a millimetre in length, and usually divided by slightly constricting septa into four cells, of which the two terminal are longer than the two middle. From these cells germinal filaments may proceed, from which are developed either yeast-cells, or brown thick-walled and many-celled mycelia.

and many-cented mycera. The inoculation experiments are best made by means of incisions through the bark of young branches of healthy Peach trees or Cherry trees, and by slightly raising the cut edge of the bark and putting under it little bits of gum from a diseased tree of the same kind. In nearly every instance these wounds become the seats of acute gum-disease, while similar wounds in the same or other branches of the same tree, into which no gum is inserted, remain healthy, unless, by chance, gum be washed into them during rain. The inoculation fails only when the inserted pieces of gum contain no Coryneum.

By similar inoculations similar diseases can be produced in Plum, Almond, and Apricot trees, and with the gum of any one of these trees any other cao be infected; but of many other substances which Beijerinck tried, not one produced any similar disease.

The inoculation with the gum is commonly followed by the death of more or less of the adjacent structures; first of the bark, then of the wood. Small branches or leaf-stalks thus affected in winter, or in many places at the same time, may be completely killed; but in the more instructive experiments the first symptom of the gum-disease is the appearance of a beautiful red colour around the wound. It comes out in spots like those which often appear spontaneously on the green young branches of Peach trees that have gum-disease; and in these spots it is usual to find Coryreum-stromata, or mycelium-filaments. The colour is due to the formation of a red pigment in one or more of the layers of the cells of the bark.

But in its further progress the disease extends beyond the parts at which the Coryneum, or any structures derived from it, can be found; and this extension, Beijerinck believes, is due to the production of a fliid, of the nature of a ferment, produced by the Coryneum, and penetrating the adjacent structures. This, acting on the cell-walls, the starch-granules, and other coastituents of the cells, transforms them into gum, and even changes into gum the Coryneum itself, reminding the observer of the self-direction of a stomach.

In the cells of the cambium, the same fluid penetrating unites with the protoplam, and so alters it that the cells produced from it form, not good normal wood, but a morbid parenchymatous structure. The cells of this parenchyma, well known among the features of gum-disease, are cubical or polyhedral, thin-walled, and rich in protoplasm. This, in its turn, is transformed into gum, such as fills the gum-channels and other cavities found in wood, and sometimes regarded as gum-glands. And from this also the new ferment-fluid constantly produced, and tracking along the tissues of the branches, conveys the Coryneum infection beyond the places in which its mycelium can be found. Communicated by Sir James Paget, Bart., F.R.S.

GLADIOLUS QUARTINIANUS is a tropical African species, lately introduced to Kew. The flowers are pale yellow, flushed and streaked with scarlet. The innermost petal is larger than the others, and conceals the purple anthers in its hood-like tip. It is figured in $Bot.\ Ma_{S^*}$ (1884), t. 6739.

^{*} Ouderzo kirgen over de Be mettelejkheid der Gomziekle bij Planten; Goor De M. W. Beljen en, Amsterdam, 1883.

ORCHIDS AT MESSRS. VEITCH'S

NEARLY thirty-two years of carnest study and care, coupled with a continuous and lavish outlay in introducing new plants and raising new structures for their accommodation, have rendered the collection at the Royal Exotic Nursery, King's Road, Chelsea, the largest, richest, and best cultivated trade collection in the world. Of course the long career of Orchid growing before the Chelsea establishment was started, and that knowledge acquired in the infancy of the Orchid science in which the name of Veitch played such an important and lasting part, would lead us to expect no other result; nevertheless, in these days of spirited competition it is no small compliment to pay to the owners of any such gigantic establishment to say that they have always maintained the lead in whatever they have taken in hand, and more particularly in the It is a pleasant task to view the beauties gathered from all parts of the world and contained in their thirty Orchid-houses, for go when you will even the hottest houses are carefully regulated and ventilated, so that they are only just comfortable and never oppressive. This system was first studied by the Chelsea firm for the comfort of the visitors, but the plants seeming to like the cool and airy treatment so well, it soon became the standing rule never to keep any section of Orchids in so high a temperature as to feel uncomfortable even to the most delicate of mankiod. Thus it is comfortable to view the plants, but as our duty is to notice them, where are we to begin among the thousands of lovely things commanding attention? A most difficult task is before us, for it would be almost as easy to do justice to one of the large sections of the British Museum in a couple of columns as to say even a word each for the countless new and fine things which so many distant Orchid growers would like to hear about. No other course is before us than to touch only on those in bloom, and, careful as we may be, a great quantity of them will no doubt be missed.

Messrs. Veitch's method of arranging the Orchids in bloom is a good one. At the entrance of the Orchid department a long range of lean-to north houses receive the flowering plants from several of the smaller and more out-of-the-way houses, and thus provide a lovely show near at hand for the general plant lover who would not have time to go the round of all the houses; here be may feast his eyes and go away contented, but this is only the commencement of the real Orchid lover's pleasure, for every one of the large houses beyond contains the plants which flowered in it, and is a veritable show-house in itself at all seasons. Here on any day in the year are to be seen some or other of those famed plants whose reputation has spread over the whole of Europe wherever Orchid-growing has been commenced-and where has it not been commenced? The first long house viewed from the doorway seems like a walk between two banks of the beautiful Odontoglossum Alexandræ and O. Pescatorei, for on either hand, sloping from the roof, and falling over the staging, are countless huge spikes of those varieties in their endless variation, those of many of the O. Pescatorei being so much branched and so profusely flowered as to cause wonder how the plants could bear them. On entering, however, we find there are well-bloomed plants of many other species which help to show off the snow-white flowers of the two first-mentioned, and give variety to the general display.

Among them may be mentioned some good forms of O. Wilckeanum, O. luteo-purpureum hystrix, O. l. radiatum, a profusion of O. cirrosum, many O. Rossii majus, O. Cervantesii, O. nebulosum, O. triumphans, O. tripudians, O. Coradinei, O. Ed-wardii, some fine pots of the bright orange Ada aurantiaca, Sophronitis grandiflora, Oocidium vari-cosum, &c. Among the rare things in this house are a splendid large form of Odontoglossum blandum, with lange mauve-dotted labellum, and quite distinct enough to warrant its being distinguished by a special name : the rare and pretty O. prænitens; a very fine form of O. Hallii xanthoglossum, a prettily spotted variety of O, Chestertoni, and a neat hybrid Odontoglossum resembling some of the forms of O. Andersonianum, but having the shape and substance of O. Ruckerianum. The next house is a wonderful sight, many hundreds of blooms of Lycaste Skinneri being there mingled with fine pans of Cologyne cristata, both the ordinary, Chatsworth, and the Lemoniaga varieties; and to introduce colour, and to bring forward favourites,

some of those heautiful hybrid Cypripediums for which this firm is noted are interspersed here and there. The Lycastes are a study in themselves, such endless variety do they present, their tints varying from the palest flech colour through all shades up to the intense crimson-lipped forms, and although many scores of plants are in bloom no two flowers on different plants can be found alike. The great variability of this lovely Orchid offers a reasonable excuse for building a Lycaste-bouse, indeed Mr. Lee, of Leatherhead, and a few other growers have done While on the subject of Lycastes it will be well to say that Mr. Canham, Messrs. Veitch's Orchidgrower, whose twelve years' experience at such an establishment after many years of Mr. Pilcher's tuition renders him no mean authority, considering that the success of the Chelsea Lycastes is in a great measure due to their being kept all the year in the cool north house on the end of this range, and in which the stock looks very healthy, and showing well with bloom in spite of the quantity taken into the house previously mentioned.

The large airy Phalænopsis-house is also a north house on this range, and it is probable that its aspect, too, may have something to do with the great vigour of the plants contained in it, for during the years they have occupied this house not a single instance of or degeneration has occurred; and yet spot during that period many have started Phalænopsis growing with everything seemingly in their favour, and have lamentably failed. The failure may always be traced to the same causes—over-heat, want of sufficicent and permanent ventilation, too much sunlight, too much water when not making growth, and too much stuff about the roots. In Messrs. Veitch's house will be found a great quantity of P. Schilleriana in bloom, as well as good representatives of most of the other species or varieties, including a splendid form of P. leucorrhoda, and another resembling P. casta, P. Stuartiana, &c. In this house, too, the Cypripedium niveum grows very freely. Passing up the large span range in several divisions reveals flowers on all sides, not arranged without due consideration of effect or the interest to be derived from comparison; for instance, in the first division we found grouped together Dendrobium nobile, D. heterocarpum, and their offspring, the varieties of D. Ainsworthii and D. splendidissimum. In the comparison the last-named—a Veitchian production—has decidedly the best of it, splendidissimum. as the flowers seem more to resemble a Wardianum × than a nobile. Here, too, are D. crassinode album, 1). macrophyllum, nearly white variety; a quantity of D. Wardianum, D. Findlayanum, Calanthe Regnieri, Angræcum sesquipedale, Saccolabium gigaoteum (a very fine form), Cymbidium Lowianum, with five long arching spikes; Epidendrum Wallisii with twenty-eight spikes, several Vandas, &c.

The several Cattleya-houses are well stocked, many of the plants being imported direct. One house is filled with the C. Trianæs, which Messrs. Veitch imported only in March last, and yet the plants have pow turned their apartment into a show-house-the quality of the flowers seat up from the 500 sheaths and the intensity of their colours causing one to think less of the petted varieties of old. To follow on the Trianges hundreds of flower-sheaths of C. Mendelii appear, and after that the succession is well marked in the other species to warrant us in saying that there will be no scarcity of Cattleya blooms throughout the whole year. In a division of this range are many good varieties of Lælia anceps, some of them being white ones, and with them are two of the finest and most distinct forms of Oncidium unguiculatum ever seen. A peep into the private Orchid-house discovers Mr. Seden among his prolific family, many of them again pregnant with wonderful things, not to be revealed perhaps until many of us have passed away. Every year, however, brings to this firm rewards for its forethought in taking up and persevering in Orchid cross-fertilisation, and even now some povelties are exhibiting their first flowers. Scattered through these houses are blooms of many things rare and interesting, which it is gratifying to be allowed to inspect. The large new Cattleya-house (what Orchid establishment is now without its new large house?) is nearly finished; it is a perfect structure, 130 feet long and 22 feet wide, and seems to be well adapted in every detail for the culture of Cattleyas and Vandas.

In the nursery we found everything as clean and neat as usual, the famed collections of Nepenthes, Sarracenias, Droseras, &c., in beautiful trim, and the

house of Amaryllis, containing over 2000 bulbs, many of them producing two spikes each, superior to anything that has yet been seen of its kind. Lovers of Amaryllis would do well to inspect the houses at Messrs. Veitch's, and endeavour to learn their system of treatment for these bulbs, as it seems to have been well and successfully studied by them.

JENSEN ON THE POTATO DISEASE.

(Continued from p. 208.)

III. INFLUENCE OF TEMPERATURE UPON THE DISEASE. - In a previous communication to the Gardencrs' Chronicle (July 28, 1883) I gave a resumé of Mr. Jensen's investigations concerning the geographical distribution of the disease, in which he observed that the Peronospora could not exist in those countries where the mean temperature exceeded 77° Fahr. for any length of time during the Potato eason. The influence of temperature upon the Peronospora has been worked out by Mr. Jensen by means' of slices of Potato dipped in spore-charged water and placed in constant temperatures.

25 .0	C. =	abou	t 77.	Fahr,		no conic			
23.7	12	22	74	31	gave	conidia	io 23/1	days	
a. 5	**	27	72	1)	21	,,	2/3	3.0	
17°.5 15° 0		11	63°	2)	11	17	316	10	
15 0	12	22	59	>>	13	1)	5	11	
1000	78	12	54	2.2	13	>>	CI	> 1	
10 0	**	21	50	2.0	11	19	13	11	
7°-5 5°-0	**	39	4.5	27	17		16	11	
\$.0	19	3.1	4 L	22	gave	myceti	um, bu	00 1	conidia
1".5			240			tc8 day:		m nor	conidia

IV. CAN WE DO ANYTHING TO RETARD THE OUTBREAK OF THE DISEASE?-If it be true that an early outbreak means a small crop, naturally the question arises, Can we do anything to convert an early into a late outbreak of the disease? Certainly we cannot influence the weather; if we could there would be easy solution to many agricultural difficulties which now baffle us; but although we cannot lessen the rainfall we can reduce the number of starting points from which the disease commences. By subjecting our seed Potatos to such a degree of heat that shall be fatal to the Peronospora, but not sufficiently high to injure the Potatoe, as has been already shown. The spread of the disease is at first comparatively slow, and therefore much may be expected by thus disinfecting our seed Potatos. Of course individually we cannot retard the appearance of the general outbreak, although this could be accomplished by co-operation. Time might be gained, too, by adopting the well-known device of letting our seed Potatos sprout, after being disinfected, in suitable places, under cover before they were planted. Mr ensen considers, by adopting these two plans, something like from two to four weeks might be gained before our neighbours gave us sufficient conidia to produce the general outbreak. What two to four weeks' start of the disease in an early year means may be gathered from the subjoined table by König and Hammerbacher * obtained in 1857 at Munster, showing the total solid residue of young tubers :-

Seed Potatos,	9 16	grammes,	sown	April	32.		
Young Poratos,	2.60	. ,,	12	July	2.		
11	17 00	1>	**	22	Ç.		
21	25.10	12	9.9	"	16.		
>>	43.86	11	**	31	23.		
11	57 45	9.9	19		30.		
>+	84 13	13	13	Augu	ist	6.	
11	9265	11	11	11		13.	
13	103 65	11	21	12		20.	
**	110.73	24	1 1	_ "		27.	
	110 57			Septi	aml	ner	i,

This is even more strikingly shown by the following tables, showing by the weight of the total solid residue the rapidity of growth of the young Potatos :-

		I, †			11.:	
			Grammes.	1	,	Grammes.
July 9		••	170	July 12		92
Aug. 6	••	• • •	438	,, 25		46.8
Aug. 6		• •	84.1	Aug. 2		58 5

That it is possible to kill the fungus in tubers without injury to the germinating power of the Potato by the application of heat Mr. Jensen has shown, and that there is a margin of from 8° to 10° C. (from 15° to 20° Fahr.) to come and go upon. In the subjoined table the points are shown very clearly. The tubers experimented upon on September 1 and

J. König, Fr. Hammerbacher, and C. Brimmer, in Bieder-tami's Central Blatt, 1878, pp. 273, 274.
† Konig and Hammerbacher, loc. ct.
† By Dr. J. Petersen at the Experimental Station at Regens-ald, Germany.

17 had been diseased a long time, so that the mycelium had already died out in some few of them before they were subjected to the disinfecting process :-

		ntrol ers.					
1883.		No.	o. of which ibsequently we conidia.	which t	rature to hey were ected.	of diseased tubers.	No, of which subsequently gave conidia.
			No. o subse	Mio.	Max.	o Z	No. c subse
June 8		13	0	41°,6 C.	42°-5 C.	13	13
June 30		70	0	40°.7	41.2	70	70
Aug. 19		25		42°.9	43°.6	25	25
Sept. r		20	0	41 "2	41°.9	10	. 7
Sept. 17		32	0	44°-4	46°.2	10	9 1
Sept. 17		16	0	43° 9	44"-4	10	9
Sept. 12 ,,		25	0	42° 5	45°.0	25	25
Oct. 11		25	0	40°.6	41°.2	25	25

These tubers were exposed to a dry heat for four hours-to a temperature above 40° C. (104° Fahr.); after which none of them gave conidia, although their germinating power was unimpaired.

V. IS THE FOLIAGE MORE SUSCEPTIBLE TO DISEASE WHEN THE PLANTS HAVE ATTAINED A CERTAIN STAGE OF DEVELOPMENT?-It has been said that the foliage of young Potatos is not so susceptible to the disease as that of plants more mature. The following experiment was tried:—Six flowerpots, each containing one Potato planted at different dates, were placed in the first days of July, 1883, in a row about 10 inches apart near some Potatos affected with the disease. On July 27 the diseased leaves on each plant were counted, with the following result :-

	Plants appeared above ground.	
Nos. 1 aod 2	June 12	72
,, s and 6	Juae 30 July 8	51

Nos. 1 and 2 were nearest the diseased Potatos, from which they were distant about a yard, and had, as might be expected, rather more diseased leaves than those further distant; but the youngest of all, which had not been above-ground until nearly a week after the others were exposed to infection, had even more disease upon them than Nos. 3 and 4. It is a matter of common observation that the disease first makes its appearance upon the lower leaves of Potatos, and it has been thought this was because, being older, they were more susceptible than the upper. this is not the real cause is shown by the simple experiment of bending the stems down close to the ground, when it will be found that the upper leaves fall as easy a prey to the fungus as the others. true explanation is, that the nearer the ground the more moist and the more stagnant is the atmosphere surrounding the foliage, for next to heat nothing is so fatal to the conidia as dryness. Hence the upper leaves escape longer than the lower, because they are more exposed to the wind. As a rule the foliage of the late varieties is less susceptible to the disease than that of earlier sorts, but this is really of no advantage to the Potato grower, because, being less advanced when the disease does attack them, the injury done to the foliage has more deleterious influence upon the development of the tubers than is the case with the earlier varieties, which have attained a greater degree of maturity when the disease comes upon them.

When a very young leaf is attacked by the Peronospora, its tissues being more tender, the fungus penetrates more easily into them, so that, as a rule, we find the disease passes from the substance of the leaf into the petiole, which causes the leaf to wither and hang down often before the mycelium has had time to destroy it entirely, as is the case with the older leaves. In fact, like other parasitic fungi, the Peronospora attacks young plants more vigorously than old ones.

VI. THE SPREAD OF THE DISEASE IN NATURE. -As has been previously stated, the spreading of the disease is very slow at first, but extremely rapid when

once it has become fully established. This apparently sudden spread has been thought to be due to the sudden maturity of resting-spores. The suddenness, however, is apparent only, not real. In order to see how this spreading occurs, an experimental plot was examined about a fortnight after the disease first made its appearance in it. Every plant was examined, and the number of diseased leaves upon it counted. A map was then constructed showing each plant with the number of diseased leaves. By this it was distinctly shown that :- I, the disease developes in the direction of the wind; 2, it has a tendency to follow the rows; 3, it is developed from centres. C. B. Plowright.

(To be continued.)

TRITONIAS.

WERE it not for the consignments of Ixias, Sparaxis, Tritonias, Babianas, and other bulbs of a similar character that come to the London seed houses in spring from Guernsey, and which can be seen at one or other of the meetings of the Royal Horticultural Society, the dwellers in London would scarcely have an opportunity of seeing these charming South African bulbs. How they are admired when set up in such a state of perfection! But how many cultivate them? And yet they find a place in bulb catalogues, and there must be a demand for them.

The Guernsey growers make a list of the following varieties: - Amoena, orange, centre spotted with bright yellow, each spot encircled with crimson; Fulgens, bright orange-scarlet, very effective; Laura, deep salmon, a very pleasing colour, and regarded as a great acquisition; Longiflora, buff colour, long tube-shaped flowers; Longiflora rosea, of the same character as the foregoing, but rose-coloured; and Speciosa, brilliant orange-scarlet.

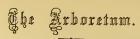
Some quarter of a century ago there lived a clever gardener who used to grow with considerable success a collection of Cape bulbs, and among them some of these charming early flowering Tritonias. to pot a few at intervals from August to the end of October, in order to ensure a succession of bloom, putting three or more bulbs in a pot, according to the size of the pots and the hulbs, they being well drained and filled nearly to the rims with the rougher parts of the compost used; then the bulbs were placed on this, and covered with some finer soil. The compost used was made up of pure turfy loam of a sandy nature, some peat, and silver-sand, and in the case of Sparaxis and Ixias a little more silver-sand was used; the only manure employed being some well-rotted cowdung. When potted they were placed in a cold frame, and covered over with ashes, as one would Hyacinths. This was in the days before cocoa-nut refuse was introduced, else that is the hest material that can be employed for the purpose. As soon as growth was apparent the covering was removed, and the growing plants brought nearer the glass, but protected by covering in frosty weather.

As the days lengthened, and genial weather happened, the sashes were removed, and every encouragement given to the plants to make a kindly growth, and warm showers were suffered to fall upon them. In this way charming pots of flowers were had that were of great decorative value in the greenhouse in April and May; the later sorts further on.

But this grower used to care for the bulbs after they

But this grower used to care for the bulbs after they had done flowering, which is perhaps what is not done in these days, when there is such a greater number of things to cultivate. When they had done blooming they were put aside in a cold frame and cared for, watering in dry weather, until the foliage decayed, then the bulbs were shaken out of the soil and put away for potting another year. The same was done with Juic Scenaric and Pabliance additional contents of the soil and put away for potting another year. then the bulbs were shaken out of the soil and put away for potting another year. The same was done with Ixias, Sparaxis, and Babianas, additions being made as new species and varieties were announced. The beautiful Freesia refracta alba, which Messrs, James Veitch & Sons showed in such fine condition with maniful of the Paris Hosticitus Springer of the Paris H

at the meeting of the Royal Horticultural Society on the 12th inst., was so charming that they should serve to call attention to the beauty of the Cape bulbs. Such a course of treatment as that followed in the case of the Tritonias would do for the Freesias, but they are of such early growth that it is necessary they be obtained as soon as possible, and potted as required from August to October, if not too far advanced. But it is almost useless to recommend border culture unless a garden be prepared specially for them. Then there is one cheereful. for them. Then there is some chance of success; but it planted in ordinary garden soil they will fail for lack of conditions essential to success. Pot culture is what is required—suitable soil and proper management—and then success may be looked for, and with it a revelation of beauty unknown to thousands of modern gardeners.



THE HEMLOCKS. - Every one remembers Longfellow's lines-"This is the forest primæval. The murmuring Pines

and the Hemlocks Bearded with moss and in garments green . . . ;"

but not every one knows that the beautiful Hemlock Spruce of our gardens, Tsuga canadensis, is the tree intended. The truth is, we rarely see it save in the bush form, and are apt to overlook the fact that it is a timber tree even, although here and there we meet with trees of this species, but which, to say the truth, are scarcely so elegant as when in a younger state, The illustration we give, through the courtesy of Professor Sargent (fig. 45), of a group of these trees in the Arnold Arboretum at Boston, will show that it is capable of forming straight boles. Its timber is only of second-rate quality, though useful for certain special uses, and the bark is largely used for tanning Tsuga is one of those tiresome genera that purposes. seem to have been made to plague the botanists. It is not a Spruce, nor a Silver, nor a true Pine, but it combines some of the characteristics of all. Even the solitary resin canal in the leaf, thought distinctive by anatomists, has its parallel in Picea Maximowiczii. Tsuga has representatives in North-east America (T. canadensis), in California (T. Mertensiana = Alhertiana), T. Hookeriana, T. Pattoniana, T. Williamsoni; in Japan (Tsuga Sieboldi and its variety nana); and in the Himalayas (T. Brunoniana, alias dumosa). Of these we may speak on another occasion.

ABIES (KETELEERIA) FORTUNEI. - Of this Messrs. Rovelli send us cones and sprays from a tree growing in their nursery at Pallanza, Italy, the home of numberless rare and interesting trees and shrubs. The trunk is covered with a thick layer of cork; the shoots, with their flat leaves, leaving a circular scar as they fall off, are like those of the Silver Fir (Abies). The cones grow erect, on short stalks, and have persistent scales, like those of a Spruce (Picea), thus justifying Mr. Bentham's assertion that Keteleeria Fortunei is a species of Ahies (Silver Fir), with the scales of the cone persistent. In any case the tree is one of unusual interest, so that we shall gladly avail ourselves of Messrs. Rovelli's courtesy by giving in due time a representation of the plant, and defer further comment for the present. Meantime planters may be glad to know that seeds and young plants can be had from the renowned Pallanza estab-

PSEUDO-LARIX KÆMPFERI. - A magnificent example of this species, the Golden Pine of China, is also growing in the nursery of the Brothers Rovelli, at Pallanza. It is more than 12 metres high (40 feet), and about 11 metres through the branches, and has a superb effect. The tree produces cones abundantly every other year, which enables MM. Rovelli to supply their clients with young plants by post or otherwise.

CARAGANA ARBORESCENS. - In common with many other shrubs thoroughly deserving of more extended cultivation, the arborescent Caragana, or Siberian Pea Tree, is comparatively rarely met with except in old-fashioned gardens, or in strictly hotan-ical establishments. Not without beauty by any means, and capable of withstanding great extremes of heat and cold, as well as being almost impartial both as regards soil and situation, this species might have been expected to become quite a common denizen of British gardens soon after its introduction to this country. It is a native of Siberia, and in the cold dry North is largely used as a hedge-plant. Mr. Gibbs, in his Hasty Notes on Trees and Shrubs of Northern Europe and Asia, writes as follows respecting the species now under notice :- "On the Finland Road, that suburb which is the resort of the townspeople of St. Petersburg during their short cool summers, the Caragana is the common hedge-plant. It and the red-berried Elder are the commonest shrubs. In the tea-gardens of the Petrovskoe Park, near Moscow, where the Russians meet to enjoy their tea around their hissing samovars, the dividing screens are formed of Caragana. At Moscow and Kazan it and the Siberian Thorn are the common hedge-plants."

ORCHID CULTIVATION FOR AMATEURS.—VI.

HEAT, ventilation, and moisture are three great factors in Orchid culture, and all, to a great extent, amenable to modification at our hands; but with light this is not so. True, we can limit its influence by shading, but what we want is a shading which, while intercepting the heat-rays does not rob us of the actual light also, for it is impossible in our climate for Orchids to have too much light. The old idea of growing Orchids in heavily shaded glass-roofed tunnels is exploded for ever, and with it the old "bake and shrivel" system of "resting" also. Now-a-days good Orchid growers grow their plants in lighter bouses, and only break or diffuse the sun's rays, instead of totally obscuring them, as was formerly the rule. Then more air is given, and cooler night temperatures are found advantageous, and not only are more Orchid growers and amateurs successful than

so far as they rob us of the light in dull or cloudy weather (at which time all shading is unnecessary of course) as well as duriog bright, hot days when it is really needful. Light span-roofed Orchidhouses are the best for reasons which we shall Of course, splendid Orchids have been grown in lean-to structures; indeed, some of the best "cool" Odontoglots I ever saw were grown in a little low lean-to house with a north-western aspect. Now, as to staging in reference to light, which is an important point. Orchids, like all other plants, have an inclination to grow towards the light; and when the light comes all from one side, a tendency to unequal or onesidedness is fostered.

Again, when a lean-to bouse has a path down
the centre, and a stage on either side, there is danger of the plants being staged rightly (i.e., to face the light in one part), while others are liable to be staged wrongly, i.e., so placed as to face the spectator, and with the backs of their leaves to the light. In the case of some of the thin-leaved that this idiosyncrasy is due to the incidence of light being suitable in one place while it is not so in another.

In the case of cool Orchids, as we have before pointed out, a high maximum temperature during the hottest of summer days is more harmful than a low minimum; in a word, many Odontoglots, Masdevallias, and Oncidiums suffer as much from summer heat as Phalænopsis and Saccolabiums would do from too cold a temperature. If the house has a northern aspect ample ventilation and abundance of moisture on floors and stages alike will do much to lower the temperature, and this may be further done by raising the shading material 6 or 8 inches above the roof itself, so that a space is left for a current of air to pass up between the canvas and the glass. In warm localities, or on extremely hot days, the canvas might be kept wet and cool by either syringe or hose-pipe, but this would scarcely ever be necessary in the case of a house having a northern aspect,

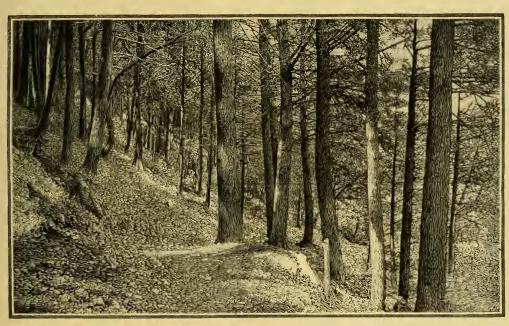


FIG. 45.-HEMLOCK SPRUCES NEAR BOSTON, U.S. (SEE P. 240.)

formerly, but it is worth noting that this modern plan of culture has nearly entirely banished that "big bogey" of the olden time, namely, "spot." If "spot." appears in an Orchid-house to-day, the modern grower does not look upon it as a zymotic disease, but at once looks to some error in his own treatment as the cause of its appearance.

Now as to shading: whenever it is used it should be movable, easy to roll up and down by ropes and pulleys on a light pole. Coarse bempen or woollen threads woven net-wise, the meshes one-third or even half an inch square, are generally sufficient to break the sun's rays, if elevated from 4 to 6 inches above the glass. So arranged, each thread casts a shadow, and the result is, the breaking up or diffusion of the sunshine, rather than an actual obstruction of the light itself. In other words, a far larger proportion of heat rays are obstructed than of light rays, a result much to be desired during the hottest of summer days. Especially is this to be wished for in the case of cool Orchids, for reasons before pointed out. All kinds of fixed or permanent shading material, whether tinted glass, whitewash, "summercloud," or tiffany, tacked to the rafters are wrong Orchids this is a matter of but small import, since their leaves soon turn to the light, as do those of a Fuchsia or Pelargonium, no matter how staged. But in the case of hard-leaved plants, such as Cattlevas, Lælias, Angræcums, Vandas, &c., they often suffer irreparable injury by being staged with the backs of their leaves to the light. This question of staging all Orchids so that their young growths can grow towards the light is very important, and the neglect of this rule entails a great waste of growth force or energy. In a word, Orchids, of all plants, must be staged that the light falls on to the upper surfaces of the leaves, and they should never be staged merely for the sake of effect from other motives, as is so frequently the case. We often hear gardeners say that an Orchid is very "touchy;" it will only grow in one particular place in the house, and if removed elsewhere does not do so well. No doubt the heat of some houses is a little too much for individual plants, and such will then naturally succeed best at the coolest end of the house, or in a position near a door or ventilator where there is a flow of cool air from outside.

In a great many cases, however, I am convinced

ST. HELENA.

MR. D. MORRIS, the Director of Public Gardens and Plantations io Jamaica, has written a Report upon the Present Position and Prospects of the Agricultural Resources of the Island of St. Helena, which has just been printed by the Colonial Office, and which contains much matter of interest, as our readers may infer from the short account we are now able to give.

St. Helena has an historical interest to every Englishman, in consequence of its being the island home of the exided Napoleon I. after the battle of Waterloo. Mr. Morris, in his introductory notes, briefly refers to this fact, and points out that the island was discovered on May 21, 1502, by the Portuguese; it was held by the Dutch until 1651, when the East India Company took it, and it was transferred to the Crown in 1833. The area of the island is about 45 square miles, 10¢ miles long, and 8½ miles broad. "Of the 28,800 acres of which the island consists, the greater portion suitable for cultivation is in private hands. The Crown lands, with the exception of Longtown Farm and a few other places, are barren wastes on the outskirts of the

island, incapable of cultivation." The special characteristics of the island are, Mr. Morris says, observable both in the geological nature of the soil as well as in the plants which affect them.

The coast zone, which at the present day is dry and barren, was at one time covered with luxuriant vegetation, "and with trees drooping over the tremendous precipices that overhang the sea." The barren coast zone is described as at present extending about 1 mile to 1½ mile around the island. Deep wide valleys, and rocky, almost inaccessible ridges run from the central ridge towards the sea, breaking up the coast zone into numerous almost detached prominences and ledges. It is absolutely devoid of vegetation, except Prickly Pear, a few plants of Mesembryanthemum, and the rare indigenous Pelargonium, Pharnaceum, and Trip-On the Bam there are straggling bushes of the Scrub Wood (Aster glutinosus, Roxb.), which is probably the most abundant of the indigenous plants of the rocky coast. In this zone the plants are so scattered and so buried in crevices and hollows that they are scarcely seen from the sea, and do little to relieve the parched and barren appearance of the island.

The middle zone extends from the boundary of the coast zone to about three-quarters of a mile inland; its surface is not so rocky, and the slopes are more covered with grass. Here Australian, Cape, and American shrubs and trees have established themselves into thickets of considerable size. The slopes are often covered with Furze, with an occasional plant of the indigenous gum woods, and in the damp bollows some of the larger Ferns. "The English Brooms," Mr. Morris says, "together with Brambles, Willows, and Poplars, Scotch Pines, and Gorse bushes, Cape of Good Hope bushes, Australian trees, and American weeds, have driven out most of the indigenous plants from this belt. The tendency of these introduced plants is to encroach more and more upon the higher lands where the indigenous flora still re-As regards the larger trees, such as Pines and Willows (Acacias), they appear to be spreading downwards in the direction of the valleys, following, no doubt, the distribution of their seeds by the action of the trade winds."

The central zone is described as being not more than about 3 miles long, and 2 miles wide; in some places the rocks are very precipitous, while in others the land is undulating, with grassy slopes, meadows, hay-fields, a few farms and gardens, and well-wooded glens of Oak and Acacia. On the extreme crest of the central ridge, extending from High Peak to Rock Rose, there is still left a portion of the indigenous forest with Cabbage trees (figured in Gardeners' Chronitde, 1880, vol. xii., p. 401) and Ferns, the wild Olive (Nesiota elliptica), Angelica, Lobelia, and the delicate campanulate Wahlenbergia. Here the soil is for the most part rich, though not very deep, and the climate is particularly cool.

Mr. Morris suggests that Aloes, Furcræas, and plants of a similar character, together with some hardy trees should be established in warm and sheltered valleys as a pioneering vegetation to spread over these wastes to gradually reclaim them. About Sooo acres are in pasture and hay-land, and the tendency is to allow this to increase. The country houses, which in the East India Company's time were inhabited by prosperous merchaots and officials, and surrounded by well kept gardens and orchards, are fast falling into decay and becoming ruinous. The cultivated areas around them are simply converted into grazing lands, and a few cattle and sheep are the only indications of life for miles around.

About 400 acres are under cultivation with indigenous and introduced trees, and nearly 300 acres with root-crops, forage, orchards, and gardens. The census of 1881 showed the population of St. Helena, exclusive of the garrison and shipping, was about 4500, and of this number more than half live in Jimestown.

After giving the rainfall, temperature, and other meteorological conditions of the island, Mr. Morris thus refers to the future:—"Speaking from my point of view, and after a careful consideration of the soil, climate, and general resources of the island, I am led to take a hopeful view of those resources, provided they are developed in such a manner as to place the island in fair competition with other countries. I look entirely to the soil for the elements necessary to bring prosperity to St. Isleina. But the people require to be shown what these resources are; they need to be taught how to use those resources aright, and they require to be encouraged and assisted while so

engaged. I should recommend, in the first instance, that an intelligent and competent gardener be sent to the island to take up the entire question of the revival of agricultural pursuits, and that if the local Government is unable to support such an officer and a small staff that a grant be made for the purpose by the home Government."

Mr. Morris further recommends the formation of a small establishment, with nurseries, &c., at Plantation House, for a gardener and a small practical staff, who should introduce and raise for distribution plants not already in the island.

We have quoted thus freely from this interesting report to show its nature and character; the remainder treats of economic plants under their separate heads, and is of equal, if not of greater importance, to that to which we have specially referred.

Floqists' Flowers.

CYCLAMENS AT WHITTON .- The hamlet of Whitton is situate midway between the well known West Middlesex towns of Hounslow and Twickenham, and Mr. Walker grows his heautiful Cyclamens almost within the shadow of that fine pile of buildings once famous as the residence of Sir Godfrey Kneller, but which is now a Government musical institution for the training of army bandmasters. Popular as the Cyclamen has become as a market plant, we have but few first-class growers, and of these Mr. H. B. Smith, of Hanwell, and Mr. R. Clarke, of Twickenham, are two of the foremost; Mr. Walker, of Whitton, who does not exhibit his plants at South Kensington, is in no way inferior as a cultivator. From Whitton go out 7000 or 8000 plants yearly; the season of sale, and of course of bloom, beginning early in November and ending late in April, so that nearly half the year, and that the winter half, too, is at Cyclamen establishments the busiest period.

If, however, some growers turn cut a few thousand more plants yearly, at least that cannot alter the matter of culture and quality, and in these two im-portant features Whitton is not a whit behind other We noticed in looking through the Cyclamen houses that even where what appeared to have been old vineries were utilised for the plants, stages were all brought up near the glass. One long low house must have presented a wondrous spectacle when full, as it contained then 2300 plants all in 48's, but after more than three months' sale the quantity is greatly diminished. Very great pains are taken by Mr. Walker to fertilise high-class flowers each season. Seed for own sowing only is saved and the plants to produce this after due fertilisation are placed in a separate house where if any of that pollen which is so abundant in the Cyclamen gets liberated at least it shall be from from no inferior kind. with care self-fertilisation is improbable, whilst artificial fertilisation is of the greatest importance.

Market Cyclamens are divided as a rule into persicums, that is, white or tinted flowers, having a dark coloured base, pure whites and reds. Of these sections Mr. Walker has many superb examples, specially selected for seed production. One splendid persicum had a habit of expanding its reflex petals, so that the flowers were of unusual breadth; that is, as in this case, allied to first class quality, a very desirable feature. Another with remarkably fine flowers of pure white had an intense deep crimson base of unusual depth. This fertilised in the right direction might lead to an equally bicoloured strain of exceeding beauty. A very striking kind of an inter-mediate form had blooms pure white with a pale mauve base that was both novel and beautiful. flowers were of first-class form, and most profusely borne. Pure whites were of first-rate form and quality, and though abundant not so largely pre-dominant as in some strains, for Mr. Walker is peculiarly rich in colour.

A charming flaked kind was fertilised with other flowers, having similar markings, as Mr. Walker thinks the securing of a defined flaked strain is not an impossibility, and we see no reason to disagree; whether flake markings would become popular remains to be seen, but if not acceptable in the market where decided colours are most in request, at least they would be appreciated by the amateur growers. Whilst at Whitton there are many varied and beautiful shades in the red section, there are none quite so deep in colour as perhaps is Mr. Clarke's Cardinal and King of

Crimsons, but then these very deep hued flowers are never large, and many burn or fade at the edges. Mr. Walker aims to secure size, allied to fine form, and rich glowing yet constant hues. His darkest flowers are rather rich rosy-crimsons than deep crimsons, and some of the paler reds are singularly beautiful and distinct. One plant, having flowers of a magenta, hue, yet heavily shaded with violet or purple, was most noticeable amongst myriads of others; so also was a pleasing rosy-lilac flowered one, not less distinct amother, having flowers of a rosy-flesh bue, and of fine form, was not less attractive; indeed, each of these would be valuable acquisitions to any private collections.

It is to be deplored that no encouragement in the form of prizes worth contesting is offered to growers for specimen plants of Cyclamens in variety. A dozen in 24-sized pots, and quite distinct, if icabuling such charming sorts as we have described, would make a beautiful class. As it is, growers, rather than risk the chance of getting many of their most distinctive forms cross-fertilised in the transit, keep them at home as seed producers. Myriads of plants are turned out fit for market in some twelve or fourteen months from the date of sowing; but show specimens should be some two or three years old, to enable the corms to fully exhibit what under good culture is from them possible. We have elsewhere alluded to some Cyclamen oddities at Whitton.

A house quite full of forced white Narcissi was very attractive, the bulbs, after they have ripened, being planted out for a couple of years at least, to recuperate. After the Cyclamens follow Strawberry plants in pots, and only Sir Charles Napier, which does so well at Whitton, is grown. The plants are stored on their sides in banks for the winter, but now are being run into frames, and soon a batch will go into the houses.

FLOWERS IN SEASON.

FROM Messrs. Veitch, at Combe Wood, come flowers of the following hardy shrubs:-

RHODODENDRON EARLY GEM.—One of the very best of its class, being free flowering and with large funnel-shaped, reddish-lilac flowers. It is figured in Gard. Chron. at p. 335, vol. ix., 1878,

R. PARVIFOLIUM is a dwarf form, with very slender, wiry branches, clothed, like the under-surface of the leaves, with brownish scales. The leaves are about three-quarters of an inch broad, narrow, oblong-obtuse; the flowers small, less than half an inch long, tubular, funnel-shaped, like-purple, and clustered in compact heads. It is a native of the Baical Mountains, and was figured in 1877 in the Gartenfora, t. 994. We do not remember to have seen it previously, but can now commend it for its very deeply coloured flowers, very different in tint to the figure above cited.

ANDROMEDA OR PIERIS JAPONICA, with its long drooping racemes of conic I, white flowers, is sure to be admired whenever seen. We gave an illustration of it at p. 797, vol. xvii., 1882.

CYDONIA JAPONICA NIVALIS is a white-flowered variety of our old friend Pyrus japonica.

Lastly, in AZARA MICROPHYLLA we have an evergreen Cotoneaster-like shub of the greatest merit for us neat habit and deep green foliage. The flowers are very minute, and but for their yellow colour would be inconspicuous. The winters of 1859—80, and 1880—81 played such havoc with the Azaras at Kew that we were agreeably surprised to see this specimen. It was figured in Gard. Chron. at p. S1, vol. 1., 1874.

RITODODENDRON DAHURICUM,—In some of the Rhododendron clumps at Kew, the purple blossoms of this species have been conspicuous for some time. Although rather small, and borne at the tips of almost or quite leafless slender twigs, the bright and decided colour of the flowers render R. dahuricum one of the most striking of all early-flowering shrubs. Both in size of the flowers and in the profusion in which they are produced, the hybrid R. præcox is a more desirable plant, but the flowering season of this latter is not so prolonged as is that of the one of its parents to which it, perhaps, approaches nearest, the one whose name heads this note.

Anemones, — Mr. Burbidge sends us a boxful of Anemones, little and big, rich and varied in colour, from Dublin. The seeds from which these were grown were sown no later ago than February, 1883,

Orchid Potes and Cleanings.

CATTLEYA TRIANÆ, POPAYAN VARIETIES .- The splendid form of the dark-flowered section of Cattleya from this district which Messrs. Shuttleworth, Carder & Co. had at Stevens' Room on Wednesday, February 20, served to demonstrate their excellence. The flowers were nearly 7 inches across, petals 21 inches wide. Sepals and petals pale rose, the petals having each a heavy violet blotch at the tips, the lower and expanded half of the labellum intense violet-crimson, throat pure white with orange rays extending upwards, outside of the tube of the labellum rosy-purple. Altogether it is a beautiful thing, and being the first to flower out of this firm's importation it speaks well for it. The strain of Cattleya from this district is now becoming well known for its excellence, many fine things, some of them lovely massive white varieties, having already flowered out of Chesterton's and Lehmann's gatherings on the Popayan ground, which were sold in the beginning of

PILUMNA NOBILIS.—A species with a single evergreen broad leaf issuing from the top of the pseudo-bulb; the flowers are disposed in a loose raceme, which comes from the base of the bulb. Each flower measures about 2 inches in greatest diameter; the segments are very narrow, undulate, milk-white; the lip is much larger, cuneate, and convolute at the base, the disc pandurate, emarginate, pure white, with a golden blotch on the throat. It is a native of Columbia, and is figured in the Orchid Album, t. 128 (1884). It requires coal treatment, with moderate moisture during growth, and prefers rough peat to grow in, with good drainage.

TRICHOCENTRUM PORPHYRIO.—A species with wedge-shaped oblong acute leaves, one-flowered peduncles; sepals and petals cuncate oblong acute, yellow flushed with brown; lip cuncate at the base, pandurate, emarginate, flushed with purple, with a central yellow blotch, from which proceed five lines leading to the short spur. It differs from T. purpurcum more particularly in the column. Figured in *Hustration Horticole*, t. 508.

LYCASTE COSTATA, Lindl,—A species with large ivory-white flowers, borne singly on the end of a flower-stalk proceeding from the base of a two-leaved pseudobulb. The lip is much shorter than the other flower-segments, with two short, rounded, ascending labes and a terminal tongue-shaped anterior lobe, much larger than the others, irregularly cut at the margin, and with a thick transverse crest in the centre. Columbia. Cartenflora, 1884, t. 1141.

LYCASTE SKINNERI.—It is supposed that the ancestors of existing Orchids had regular flowers and six stamens, and that in course of time the flower has become irregular, and the number of stamens reduced to one (two in Cypripedium), such irregularity of form, and such reduction in the number of stamens being connected with the efficient fertilisation of the flower by insects. We need not here repeat the varied evidence by which this conclusion has been arrived at; it must suffice to say that we have before us a flower of Lycaste Skinneri from Mr. King, gr. to J. Gwynne, Esq., Henton Grange, Edgewate, which, to some extent, bears out the theory beforementioned. It has, in fact, two lips, and a narrow petal-like band springing from the front of the column. The second lip is evidently within the first, and is doubtless the representative of one of the missing stamens, while the petal-like wing to the column may citter represent another stamen or one of the styles.

SOPHRONITIS ROBEA.—This is a distinct and very pretty addition to this well-known genus. In character it is very like the typical form of S. grandi-flora, having a plump round bulb, and a thick fleshy leaf, bearing a large well-formed flower of a rich rose colour; the labellum is small, the wings enfold the column, and are heavily marked with orange and scarlet at the base. The variety seems to be somewhat unknown, which is to be regretted, as it forms a desirable addition to the limited genus of Sophronitis. The variety has appeared annually with Mr. Peacock, of Hammersmith, and at the present time some finely flowered examples enliven the collection. W. Gost-flug. [Is not this the short-hulbed, rose-coloured form of S. grandiflora? Ed.]

The Flower Handen.

THE continuance of wet, stormy weather, with occasional downpours of hail, has tended greatly to deface the beautiful effect presented in the spring garden a month ago. Everything now exhibits a washed-out appearance, which can only be rectified by dry, sunny weather. As soon as the soil gets dry enough it will be advisable to loosen the surface of the beds, where this can be done without injuring the plants. All dead leaves and subbish should also be removed, and where the plants have become loose they should be made firm in the soil, either by pressure with the hands or feet; and where necessary a slight top-dressing of sandy loam should be given between the plants, to make the surface even. Where the walks are of gravel it will be necessary to resurface them, when sufficiently dry, with fresh gravel, as they have, in consequence of so much rain, become extremely wet, disagreeable to the eye, and unpleasant to walk on. This will not only give the garden a bright appearance, but if well rolled they will require but little attention during the rest of the season to keep them in good condition. If the paths between the beds are composed of grass they should be swept when dry, the edges sheared and well rolled, to produce a neat and trim appearance, and so increase and improve the general effect of the garden. Should the beds be surrounded by Box, Thrift, or other similar edgings, these should now be examined, and where necessary replanted. The whole should be clipped into neat form and size in proportion to the beds they surround. In replanting Box edgings great care should be taken to make the soil sufficiently firm before planting, and also to thoroughly ram the Bux in the operation. This not only prevents its growing too rapidly afterwards, but it cannot be so easily disarranged by the roller and other causes. It is much better to perform this work now than to defer it till later in the season, when more important work will demand attention, and by duing a small quantity only at a time the beauty of the garden need in no way be marred.

Frequent and careful attention will now be required in tyiog up and protecting the bulbs from frosts and severe storms as they push through the soil. Every attention thus given will be doubly repaid by their increased beauty. Clematis, Roses, Honeysuckle, and other climbers, will also require the same care, especially the former, as their young shoots grow to rapidly, and are so tender and brittle at this season as to require almost daily attention. Roses growing on warm walls, as they are unusually forward this year, may now be pruned, but extreme care should still be exercised, espe-cially with respect to the Teas and Noisettes, not to cut back too hard, lest severe frosts should set in and destroy them. Where it can be conveniently done it will prove advantageous, and most pro-bably preserve the early and best blooms and fuliage from injury, if a light woollen net be suspended a few inches from them when frosts or cold drying winds For this purpose an open-meshed woollen net is greatly superior to a close-meshed cotton or canvas one. The former, while it acts even more efficiently as a protective against frost, will also partially break the force of the wind without offering such resistance as to be blown forcibly against the trees, to their injury. Roses, either as dwarfs or standards, will be better left unpruned for a short time longer, for the reasons already adduced. I have for some years adopted this late pruning practice, and have every reason to be satisfied that it is the most safe and advantageous. Since the Tea and Noisette Roses planted in exposed positions have suffered so severely it has been found necessary to take them up annually in November, and lay them in by the heels behind a sheltered wall, where they can be easily protected during severe frosts, and transplanted to their summer quarters each spring. As they are this season already growing rapidly this operation must be performed at once; in doing which a mild dull day should be chosen, and the work should be done as quickly as possible, so as to expose the roots to the air no longer than is necessary. As each one is planted a slight watering should be given immediately, so as to settle the soil closely round the roots. Four or five stakes should then be driven into the ground a few

inches from each plant and tied together at the top over the plant; round these stakes a garden mat should be wrapped after the plant has been syringed overhead. By continuing these coverings for two or three days, removing them at night, when mild, also during dull or wet days, and by repeating the process of syringing overhead if bright sunny weather occurs, and keeping them closely covered during the day exhaustion will be prevented and scarcely a leaf will be lost. A warm open situation should be chosen where the plants will be fully exposed to the sun, and in order to secure early ripened wood, which is most essential in following this practice, and an abundance of fibrous roots, a somewhat poor sandy loam mixed with a good proportion of old mortar rubbish, plaster, and charcoal, is preferable to a rich unctuous loam. In planting this compost it should be trodden or rammed thoroughly firm round the roots, for which purpose it should be in a comparatively dry state. It can of course be enriched with liquid ananure during the growing period, but caution should be exercised not to continue its application too late in the season, else too exuberant growth will be produced, it will fail to ripen, and the object in view will be defeated.

THE PROPAGATION of the summer bedding plants should now be carried on with all possible speed, so as to get the plants well established by planting time, Dahlias, Salvias, and Begonias should now be potted, and where an increased number is required they should be plunged in a brisk bottom-heat, and as the young shoots appear cuttings may be taken to any extent; and if potted, and also plunged in the propagating pit, they will quickly take root.

Seeds should now be sown of all the best kinds of subtropical plants for the summer decoration of the lawn and garden; for this purpose the most suitable are such as possess grand foliage, as also those of graceful habit. If these are placed in a brisk temperature they will quickly germinate; they should then be potted off singly, and be kept growing without a check. If planted either in masses or as separate specimens in sheltered nooks in rich moist soil, they not only have a very imposing appearance, but produce great variety both in outline and colour, T. S. C.

The Handy Fruit Garden.

WHERE there are vacancies on the fruit walls not a day should be lost in filling them up with suitable trees. Temporary trees can also be planted by their side, which may comprise cordon Fears on south-east and west aspects, and Gooseberries or Currants on the north wall. The pruning and training of Peach trees may now be proceeded with, laying in the shoots at full length, if the wood is thoroughly ripe and there is no risk from overcrowding, but if it must be shortened see that it is cut back to a wood-bud, because if this is overlooked the shoot will die back as far as the next wood-bud. The Peach and Nectarine being nearly always trained on the fan system, the principal thing to observe in forming a tree is to keep the cectre shoots pruned back till the side branches, are produced in sufficient numbers; the sap naturally has a tendency to ascend to the vertical branches, hence the necessity of giving them the least encouragement at first. If the walls are covered with wire for the purpose of training the trees, observe the instruction given in a previous Calendar. When walls are old and the bricks have become disfigured with nailing they are best covered all over with Portland ement, which will prevent insects harbouring in them, and the walls will have a clean appearance. See that material of some kind is got in readiness for covering the trees while in blossom, the best being glass copings, from which cutains can be suspended. Common netting doubled is sometimes employed, and offectimes Sprace branches, but whatever is used it must not be allowed to blow about in windy weather and injure the blossom s. A board some 12 inches broad fastened just under the coping helps to keep the blossom day, and has, therefore, a beneficial influence on the fruit setting. In damp localities the orchard trees will offentimes become coverd with lichen, to get iid of which on a damp day scrape it off with sone blunt instrument. Then with a mixture of equal parts of soot and lime made into a liquid, wash or syringe the stems

APPOINTMENTS FOR THE ENSUING WEEK.

MDNDAY, Feb. 25 Sale of Lilies and other Roots, at Stevens' Rooms.
TUESDAY, Feb. 26 School of Camellias, Roses, &c., at the City Auction Rooms, by Prothems & Morris Rooms.
THUESDAY, Feb. 27 Sale of Camellias, Roses, &c., at the City Auction Rooms, by Prothems & Morris Rooms.
THUESDAY, Feb. 28 Sale of Imported and Established Orchids, at Steven's Rooms.
Sale of Orchids, at Protheroe & Morris' Rooms.
Sale of Orchids, at Protheroe & Morris' Rooms.
Sale of Orchids, at Protheroe & Morris' Rooms.
Sale of Arardy Plants and Bulbs, at Stevens' Rooms.

THE investigation of the inner life of the ROOTS-their structure, what they do, and how they do it-though obviously points of the very highest importance to cultivatorsdemands special qualifications and special means, neither of which are at the disposal of the ordinary gardener. It is unfortunate that it should be so, but it is our duty to make the best of the conditions under which we are obliged to work rather than lament over the impracticable. The observation of the development and growth of roots, so far as they can be seen by the naked eye, is a matter quite within our range, and we cannot too strongly urge upon young gardeners and others the necessity of carefully examining and noting the nature of the root-growth in all plants that come under

At first, perhaps, they will find that little interest is to be got out of isolated observations, but when they begin to compare the root-growth of one plant with that of another they will very soon become possessed by that most valuable of human faculties, the desire to know the reason why. Their interest will get excited, and will increase as their observations accumulate, while practical inferobservations actimized, while practical inter-ences will begin to suggest themselves, which latter must be rigidly tested before they are made articles of faith. One hint we may be allowed to give, and that is, as the problem is a very intricate one, that they attack it not all at once, but in detail. To sit down before a great leash of roots, and endeavour to disentangle them physically and mentally-to trace what, if any, connection there is between them and the branches or leaves, and so forth - is a disheartening

By investigating seedling plants, or watching how, when, or where, and under what circumstances, the roots are produced, there is a better chance of arriving speedily at some useful result. The student in this, as in most other problems of a similar nature, must act as the arithmetician does in working out a complicated sum-reduce his materials to the lowest possible denomination. This is what the microscopists and the chemists do in their laboratories-they endeavour to isolate each constituent, detach it from its associates, and study it in its isolated state. By treating each constituent in a similar manner they find out what is peculiar to each, and are very soon led on to see how they act and react on each other when in combination. As we have said, what the microscopist can do minutely, the ordinary observer can do roughly. To give an illustration. One particular branch of a tree we will assume dies, or becomes unhealthy, the rest remaining sound. This happens constantly with the Moor Park Apricot. Why that one branch? Is it that the roots corresponding to that branch are diseased, or placed under unfavourable conditions?

The reply to the question, it will be seen, turns upon the question whether or no there is any such connection between certain branches and certain roots. In the full-grown plant the inosculation and intercommunication that goes on between the several parts are so great and so complex, that the question can hardly be satisfactorily answered; but if the

problem were attacked before all that complexity arose, we might get a definite reply. M. CLOS,* in a treatise now before us, has gone into this question of root developto an extent beyond any of his predecessors, and botanists who have hitherto paid little attention to the subject will be surprised to find the degree of variation there is in the mode of production of what are called adventitious roots in different plants, and the constancy which prevails in individuals of the same species. M. CLOS groups these roots accordingly as they spring from the nodes, beneath them, above them, around them, or at a distance from them, and he indicates very numerous variations in different natural orders -details into the consideration of which we cannot now follow him, but which clearly are of great practical interest to the propagator. We may, however, reverting to the question above raised as to the connection between the branches and the roots, mention that M. CLOS has been studying plants of Myosurus minimus, a weed of the simplest structure, consisting of a root, a tuft of leaves from which uprises a single flower-stalk or several. If there is only one, then there are no adventitious roots; but if more than one, then the number of roots is equal to that of the flower-stalks, as if there were one such root to each flower-stalk. It must be remembered here that M. CLos is speaking, not of the original roots derived immediately from the seedling plant, but of the adventitious roots developed subsequently. M. CLOS' paper is written from a purely botanical point of view. but it is very suggestive of the store of most important practical information which lies ready for utilisation by those who will take the trouble to do so.

—— DAFFODILS.—No, we do not propose to quote Wordsdorm nor Jean Ingelow, nor even that well-worn assertion of SHARESPEARE's, which always does duty on such occasions. We will take for a change the opinion of that clever and altogether delightful rascal, Autolycus, who was, at any rate, a keen observer, though, poor man! he knew nothing of phenology—

"When Daffodils begin to peer, Why then comes in the sweet o' the year."

So may it be! The Daffodils are "peering," and, much as we admire them in the border or frame and on Mr, BARR's Cloth of Gold tables at South Ken sington, there is Bohemianism enough left in us to prefer to come upon a flush of wild Daffodils in a spinney, as shown in Mr. FITCH's sketch (fig. 46). We cannot doubt that the flower is fertilised by insects-but by what insects? At any rate there can be no doubt that the curvature of the flower-stem, so as to bring the flower into nearly a horizontal position, and the deep tubular crown, are devices which have been gradually evolved to meet the hest interests of the flower. Originally the flower was-nay, it is-vertical; it becomes horizontal, as we suppose, by compromise between the original upward thrust and the weight of the flower, which would tend to pull it down. Add to this a tendency in the immediate support of the flower to grow fastest and strongest on the upper side, and the curvature is amply accounted for.

— CHATSWORTH.—We have authority for stating that Mr. OVEN THOMAS, who was for several years Gardener to Sir Robert Peet, at Drayton Manor, and latterly Gardener at Impney Hall, Droitwich, has been appointed to succeed the late Mr. Speed at Chatsworth Gardens.

— HORTICULTURAL CLUE,—The annual dinner of the Club took place on February 12, and was numerously attended. The chair was taken by Mr. John Lee, Chairman of the Committee, and amongst those present were—Dr. Hogg, the Rev. F. H. Gall, Rev. T. Flintoff, Messrs, J. D. T. Llewellyn, Shitley Hibberd, Harry J. Veitch, George Deal, J. F. Strange, C. R. Whetstone, Herbert J. Adams, J. S. Cousens, C. T. Druery, H. W. Slottentoff, &c. It

was announced that the Club had during the past year subscribed ten guineas to the Gardeners' Royal Benevolent Iostitution, and that the following gentlemen had been elected members of the Committee in lieu of four who had retired according to rule:—Messrs. Shirley Hibberd, Harty Turner, Charles T. Druery, and the Rev. Theodore Flintoff. A report was agreed upon, and will shortly be issued.

— A LITTLE BIT OF HISTORY.— In a recent number of the Illustration Horticole we find the following historical memoranda, taken from a Flemish almanac of the year 1816:—

Double white Camellia, first flowered at Ghent in 1809. Azalea calendulacea, introduced from North America

in 1806.
Botanic Garden of Ghent, planted in 1797.

Pæonia alba, introduced from Siberia in 1791.

Hydrangea, the first Hortensia introduced from China

Rheum palmatum, introduced from Tartary in 1765.
Rhododendron ponticum, introduced from Gibraltar

BODNANT HALL. — We are requested to supply an omission in the notice of this place given at p. 207, by stating that the conservatory and range of fruit and plant houses, illustrated at p. 209, were designed and built by Messrs. Messenger & Co., of Loughborough.

— RED-BERRIED IVV.—Some time since we mentioned the occurrence of a red-berried Ivy in France. M. Andre, in the current number of the Revne Horticole, now gives a coloured figure and a description of the plant, which may be had from MM. Besson, of Nice, who were the first to bring ituader notice; or from M. Palllet, Chatenay, near Sceaux. As figured, the berries are of the colour of those of the Mountain Ash—orange-red. Mr. HIBBERD inclines to the view that it is of Indian origin, and the true Ivy of the poets.

- HAS THE CLIMATE CHANGED ?- Some of our readers will remember the controversy which took place some years ago on this subject, and those that are concerned in it will be interested to read the following passage from Lord MONCRIEFF's address to the Royal Society of Edinburgh, as printed in Nature: "Now that we have an observatory on Ben Nevis, our successors at the end of the next century will know accurately the conditions of climate under which the hundred years have been spent. There are, however, some details scattered over the Transactions, which are sufficiently interesting, although, whether they show any material alteration in our seasons may be, doubtful. The only cheering fact which they disclose is that the first set of returns is decidedly the most discouraging, and certainly does not support the idea that the mean temperature in the olden time was higher than it is now. There are two sets of returns printed in the first volume of the Transactions-one kept at Branxholm from 1773 to 1783, communicated by the Duke of BUCCLEUCH, who was the first President of the Society; and the second by Mr. MACGOWAN, kept at Hawkhill, near Edinburgh, from 1770 to 1776. In the first the mean temperature of the ten years is 44°, in the second 45°—not a very genial retrospect. Thiogs must have been somewhat discouraging for the farmers in 1782, for a paper is noticed in the second volume of the Transactions, by Dr. ROEBUCK, of Sheffield, who was the manager of the Carton Iron Works, recommending farmers not to cut their coro in October, although there was ice three-quarters of an inch thick at Borrowstounness, because corn would fill at a temperature of 43°. Things looked brighter from 1794 to 1799, for which years we have results furnished by PLAYFAIR. For the first three years-1794, 1795, and 1796-the mean temperature was 48°; and that although 1795 was one of the most severe winters on record, the thermometer having stood several degrees below zero, and a continuous frost having lasted for fifty-three days. The mean temperature of 1794, however, was 50°. The account of the great frost of 1795, which is given in the Transactions, is well worth referring to. In the next three years the mean temperature was 48°, the next time years the mean temperature was 40, that of 1798 being 49°.28. Of this year (1798) PLAYFAIR says that the climate of this part of the island hardly admits of a finer season. No tables were furnished to the Society, in continua-

^{*} Des racines caulincures. Par M. D. Clos. Mem. Acad. Sc. Toulouse, t. v., 1883, p. 222.

tion of those of Professor PLAYFAIR, until 1830, when, fortunately, Dr. BANNES, of Carlisle, communicated to the Society a series of meteorological tables kept at Carlisle for the first twenty-four years of the century. The results seem mainly to concur with those of Professor PLAYFAIR; the mean temperature for the twenty-four years being 47°.4547, being 3° bigher than the average of the ten years from 1773 to 1783 at Branxholm, and 2° higher than the mean temperature of the seven years, from 1770 to 1776, at Hawkhill. The highest temperature I have noted in these returns is that of May, 1807, when the thermometer stood at 85° at Carlisle, and the next, that on August 5, 1770, when the thermometer at

with regard to their applications. In response to a request made by His Royal Highness the Prince of WALES, President of the Exhibition, the eight Water Companies of London have resolved to exhibit, in a pavilion which is being errected for them, their appliances for the supply, filtration, &c., of water, together with diagrams showing the various processes and localities; and a powerful sub-committee, under the active chairmanship of Colonel Sir Francis BOLTON, has been formed to carry out this branch of the Exhibition. The Water Companies have also determined to put up in the grounds a large fountain, which will be illuminated at night by electricity. This fountain of light will, it is anticipated, materialy

of note. The habit of the plant was all that could be desired, and exceedingly floriferous. The flowers, borne on stout stalks, were of a pleasing rosy-pink hue, and whilst all had a most unusual number of petals, some had quite six times the customary quantity, so that these blooms were so double as almost to resemble the flowers of a double Tropæolum. Whilst outside of the florists' section yet the kind, beyond its novelty, was of a very ornamental or decorative nature, and, having its fertile organs intact, might be made the parent of a most interesting strain. As pulled flowers—and thousands of bunches of these are anoually sent into the market—the double kind would have considerable value, and no doubt



Hawkhill was 81°. The two years of the century in which the mean temperature was the highest were 1811 and 1822, in both of which years it was 49°."

—— INTERNATIONAL HEALTH EXHIBITION.— Freparations for the holding of this Exhibition are proceeding rapidly. The Board of Trade have certified that the Exhibition is an International Exhibition, and exhibitors thereat will accordingly participate in the privileges accorded by the Patents, Designs, and Trade Marks Act of 1883. The Lords of the Treasury have also consented to the buildings being considered as a bonded warehouse during the continuance of the Exhibition. The allotment of space, which has been largely applied for, is being rapidly proceeded with, and applicants will soon be informed of the decision of the Executive Council add to the beauty of the illumination of the gardens. To China has been allotted the space which it occupied last year at the Fisheries' Exhibition, and a Chinese Tea-garden, restaurant, and shop will not be the least interesting objects in the Exhibition. India is to be adjacent to China, and stremuous exertions are being made to secure the united action of many of the principal Tea planters in India, so as to insure a good and representative show of the Indian Teagrowing industry.

— DOUBLE CYCLAMENS,—There is such grace and beauty in a well-formed Cyclamen bloom that we cannot accept with pleasure any departure from the correct form. Yet we saw the other day in one of Mr. WALKER'S houses at Whitton a double-flowered kind that possessed some features of interest worthy

would prove very enduring. The plant has, we learn, passed into the hands of a well-known amateur florist, who will, no doubt, turn it to useful account. In the same house was another curiosity in Cyclamen flowers in the shape of a single one with petals of unusual length, and in each of which Nature had given an extra twist, so that the blooms bore no inconsiderable resemblance to those of some of the Parrot Tulips. In all well-shaped Cyclamen blooms it is found that the petals make, after all, but a quarter turn in their revolution. That seems to be the correct thing. The plant in question produced flowers, the petals of which, because of their great length, had made exactly half a turn, and it is just possible, were its peculiarities persevered with, that an entire turn might presently he produced. these curiosities have no market value.

- THE PHYLLOXERA CERTIFICATE. -- Although it has been considered advisable for the present not to urge upon our Government the propriety of joining the Convention of Berne, yet there can be no doubt as to the desirability of securing, as far as may be, uniformity in the certificates required by the Customs authorities of the several countries. To this end we transcribe from the Revue Horticole the form of certificate used in France, and which runs as follows :--

I. DECLARATION OF THE SENDER,

I, the undersigned A. B., nurseryman, of Nurseries [or amateur, of , as the case may be], declare-

1. That the plants contained in the packages marked , addressed to C. D., Cattleyaburg, by Bonn, via Harwich, Rotterdam, Cologne, or elsewhere, come from my establishment exclusively.

2. That they contain no Vines.
3. That the plants are packed specify whether with or without earth around their roots .

Signed, A. B., ot

11. ATTESTATION OF THE COMPETENT AUTHORITY. testifies, on the report of the The Mayor of

inspector (expert delegue)-1. That the package of plants above referred to comes trom an establishment (terrain) separated from any Vine by a distance of 20 metres (70 yards) at least, or by an obstruction to the passage of the roots judged sufficient

by the competent authority.

2. That no Vine exists in the establishment (terrain).

3. That Vines are not stored in the establishment.

- NOTES FROM CLAPTON .- Cape of Good Hope and Australian plants still obtain a place in Messrs. Low's nursery, and if the species are much reduced in numbers from their original abundance there are some things met with here that will soon be considered to be novelties by our younger men. Acacias come in for a large share of space, and among them we saw specimens of A. cultriformis, with triangular short leaves; A. cordata, looking, as far as regards foliage, like a small edition of the first; A. granditolia, A. Drummondi, A. platyptera, a curious species, with narrow Scolopendrium-like leaves. The Genistas, that are found to be such a useful class for early work, are much enhanced in usefulness by G. elegaos, a freegrowing large-spiked variety-a great improvement on better known kinds. A useful plant, not difficult to manage, is Hibbertia Reidi, with Diosma-like foliage and numerous shining yellow saucer-shaped flowers that cover the plant in spring and early summer, making it a very effective greenhouse subject. Boronias, such as B. megastigma, B. anemoniæfolia, B. serrulata, and several others indeterminable when not in bloom. Coleonema rubrum, Thibaudia acuminata, with bright tubular flowers of scarlet and gold; Leschenaultias of various kinds, as well as Chorozema Chandleri were coming into bloom. Witsenia corymbosa, a pretty blue flowering greenhouse species, and Leucopogon Cunninghami, together with several varieties of Eriostemon, little plants quite gay with white stars, the sorts being E. laurifolia, E. buxifolia, and E. myoporoides. The increasing volume of smoke that pervades this suburb has made the culture of the Heath almost an impossibility, so that Mr. Low has seen the necessity of taking up ground at Enfield, where hardwooded plants are now being grown. There were very healthy specimens in bloom of Erica regerminans, E. me'anthera, E. candidissima, E. ventricosa, to have grown which in Clapton would have taxed the utmost ingenuity of the able staff, and then they would not have succeeded.

- JAM .- The public mind has been much exercised as to the ruling prices of that now almost necessary of life-fruit preserve or jam-since Mr. GLAD-STONE drew popular attention to the subject. doubt the Premier took a somewhat pessimist view of the subject, but we must remember that persons in his position in life do not as a rule purchase from those who cater for the poorer classes, and that his figures may rather have been taken from the tariffs of high-class traders than from those of universal providers. But some of the Premier's critics have gone conversely low in their estimate of jam prices, and have put them as low as $3\frac{1}{2}d$. and 4d. per pound. Certainly such are the retail prices of mixed preserves, from which may Heaven deliver us, and also of the inferior marmalades, but these articles include in their composition a vast deal that may not be absolutely injurious, but which yet is the reverse of genuine,

The best test is found in the retail prices of such jams as are sold in pots by first-class houses, because that may be taken to represent bond fide fruit products; and of these, exclusive of pots, first-class preserves can be purchased at 5d. and 6d. per pound, and such price is undoubtedly cheap when we regard the enormous expense incidental to the cultivation of fruit, rent, rates, taxes, planting, years of waiting for crops, uncertain scasons, cultivation, manuring, gathering, and marketing, and fically manufacturing into preserve, we may well ask how it is possible for genuine fruit preserves to be sold to the public by the retail tradesman at less cost. Cheap if wholesome preserves are of course public boons, but it would be a misfortune were the market to be so swamped with them that their manufacture and the cultivation of the fruit was no longer profitable. These may seem to be farfetched objections; but it must be remembered that even now, when we get a big fruit crop, growers' piices are of the lowest, whilst a scarce season brings universal loss.

- FLAKED CHINESE PRIMROSES. - At the bottom of a note on Chinese Primroses at p. 216 last week, reference is made to pretty "shaped" varieties formerly seen at Southampton. "Shaped" was a misprint for "striped," as the context showed. Striped or flaked flowers of this beautiful winter blooming section of Primulas are certainly not now nearly so abundant as they were ten years since, but their impress has been left in some of the enduring double forms, though even these are so far erratic or sportive that they sometimes become pure white. The striped single forms seem to owe their present scarcity to two reasons; first, they have ever been unreliable and sportive, not easily fixed as self-colours are; and second, they lack effectiveness when compared with good self-coloured sorts. Perhaps the introduction of deep rich hues into our selfs has had much to do with the declension of the striped kinds, because the popular taste has run after showy effective colours. Whites always look well, but in the winter months the rich reds and purples at all times, and especially under artificial light, lend an element of warmth and brilliancy before which all striped as well as delicatehued flowers must pale their ineffectual fires.

It is a pity that this prominent taste for glow and colour should outweigh other considerations, for no doubt the flaked purple and carmines, the pale blues, delicate pinks, and lavenders are all truly The trade does not much care for these tints, hut private growers should have much regard for them. A few intense reds or purples in a collection are delightful, but masses of these hues only become monotonous. Truly, with Chinese Primroses, as with many other flowers, variety is charming.

- ANEMONE FULGENS. - Of the great beauty of this, the most brilliant of all early spring-flowering plants, it is hardly necessary to speak. No little dis appointment has been caused in some quarters, however, by its tendency to develope flowers in which the stamens and petals have become sepaloid, and thus large clumps, instead of showing glowing masses of vivid colour, exhibit a number of green flowers, undistinguishable a short distance off from the foliage itself. From a gardening point of view, a very much superior plant is the one which is found in some catalogues under the name of Anemone Regina; in this the numerous stamens and pissils are changed into narrow petals. Even this latter, however, is not so handsome or so effective as the ordinary singleflowered type.

- LANDMARKS OF HORTICULTURE -One of these was undoubtedly Ealing Park, in the days when Mrs. LAWRENCE had her wonderful collection of plants, and the dite of fashionable Society crowded to her garden parties. A visitor to London who had an interest in horticulture went to Ealing Park as a part of his duty, and as a pilgrim does to a holy shrine. But what a change now. A broad carriage road runs right across the park and pleasure grounds, east to west-from Ealing Lane to Windmill Lane, passing along at the south end of the famous avenue of Cedrus Deodara. The cutting away of the soil to form the roadway loosened the roots of one of the specimens, and during the gale of a few days ago it toppled over like a ninepin. Unfortunately this avenue does not appear to be included in the private grounds now left to the residence, and to all appearance a margin of houses will presently spring up all along where stood Mrs. LAWRENCE'S plant-

houses, as also the gardener's house, vineries, &c., in Mr. J. S. BUDGETT's time. If this be so, many a fine tree will have to be felled to clear the ground for the builder. The Cedar avenue is already open to the incursions of children, and much damage is being done to the specimeos. The magnificent Cedar of Lebanon (probably one of the finest in the country) which stood at the south-east corner of the pleasure grounds, appears well nigh dead, and will soon be felled. Nearly a thousand houses are to be erected on the park, and already some villas are near completion. But it will be years before memories of Ealing Park become utterly though the circle of contemporary horticulturists narrows as each year passes away.

- GREVILLEA SULPHUREA is one of the few proteaceous plants which can lay claim to be fairly hardy in this country, and, therefore, apart from its merits as a subject for cool conservatory decoration is doubly interesting. A good-sized specimen has flourished for many years against an outside wall of one of the houses in the Coombe Wood Nurseries of Messrs. VEITCH, and when in flower it looks strikingly different from anything else which grows in the open air and withstands the cold of winter in this country. Some well-grown bushy examples at Kew are now blooming, and the sulphur-yellow flowers form a pleasing contrast to the dark green Gorse-like foliage.

- SAXIFRAGA LIGULATA. - This is an excellent plant for flowering in pots at this season of the year. It is a very early flowering form, and if grown in pots, and stood out-of-doors all the summer, and brought into a cold house in December, it will be in flower in the early part of February. And it appears to vary in colour a little. There is one variety in which the flowers are slightly blush—almost white, with a coloured base; this is very pretty indeed, and a fine plant bearing six or eight panicles of bloom is a very attractive sight. Another has pale rose-coloured flowers, and is quite distinct from the foregoing. There may be other varieties, but these are well adapted for culture in pots, as they are very free. is a species that flowers very early and freely in the open air, and the consequence is that, owing to the bad weather which prevails at the time of flowering, their beauty is lost. By cultivating the plants in pots this danger is averted, the flowers are finer for the protection afforded, and they last much longer in a state of perfection.

- THE ALATAU MOUNTAINS .- The following account of these Central Asiatic mountains, whence we may derive numerous interesting alpine and other plants, is taken from a recent number of the Daily News:-"The northern chain of this range presented to our view an uninterrupted mountain mass rising to an average height of S600 feet, and in its central portion to the limits of perpetual snow. Tal Cheku, the highest peak, has an vation about equal to that of Mont Blanc, and the snow line is visible for more than 30 miles, besides which we could see many heights with snowy patches, fully entitling the range to its name, Alatau, or the Spotted Mountain. Before the settlers came not only the slopes, but also the lower spurs, of these mountains were covered with forests. Now grass alone grows on the summits, and the clear, bright, emerald green of this mingles with the dark green of the few Fir trees that remain on the hill-tops. The spectacle presented by the lower spurs in spring must be very beautiful, especially in the Almatinka valley when its Apple trees are white with blossom, mingling with the delicate pink of the Apricot bloom. The traveller may ascend this chain by five high passes, three of which are higher than the highest in Europe, but only to discover heyond him ridge after ridge, chain after chain, of the enormous Thian Shan, the largest mountain system on the northern slopes of The entire length of the Thian Shan is about 1660 miles, and its highest peaks everywhere exceed the limit of perpetual snow. Members of the Alpine Club who are beginning to think that Switzerland is nearly played out, will perhaps he interested to know that this mountain mass in Central Asia is estimated as being twenty-five times larger than the Swiss Alps, covering an area that is as large as France and Spain, and forming a protuberance upon the earth's surface considerably larger than the aggregate of all the mountains of Europe. It has plenty of peaks from 16,000 to 18,000 feet high,

and one of them, of which I was said to have been These alpine within sight, exceeds 21,000 feet. mountaineers may be further interested to know that the glaciers of the Thian Shan are computed at not less than 8000; that there are numerous snow bridges, some of them the mile in length and 100 feet in thickness; and, finally, that any one wishing to make a little summer tour from Vierny to Kashgar, the distance merely from London to Durham, will be under the pleasant necessity in so doing of crossing not one but eight parallel ridges, most of them rising to the limit of snow. In the cattle market I inquired the price of sundry animals. For camels they asked from £5 to £6 each, and for horses from 30s, to £10 Sheep were valued at from 7s, to 10s.; a foureach. year-old cow at 24s., and a goat at 5s. 6d. Beef I heard cost from 1d. to 1\flat{d}, per pound, and veal from 4d. to 5d. Chickens fetched 5d. each, and ducks 1s. 3d per pair. More tempting to me, however, were the luscious Water Melons (some of them weighing 36 lb.), at less than id. each. Grapes, also, have been introduced by the Russians, and small but excellent Nectarines, the latter for a halfpenny each, of which, as I sat over my writing at night, I ate so many as to alarm, though needlessly, the medical instincts of my companion, Mr. SEVIER."

BRUSSELS SPROUTS .- We have received an excellent specimen of a variety of this vegetable from Messrs. BARR & Son, Covent Garden, measuring 2 feet 9 inches in height, exclusive of the root, and 61 inches in circumference at the bottom of the stemdimensions that mark a giant form of growth. The sprouts correspond to these large figures, the fuller grown ones almost equalling small Cabbages; but then it must be stated that as none whatever had been gathered from the stalk, these have grown much beyond the size that may be called usable. The variety or strain is that of Mr. MAY, gardener, Northam House, Barnet,

- ERICA STRICTA .- When in flower this beautiful Heath is one of the most attractive of ornamental Although introduced to this country just before the commencement of the present century, it is not so well known as it ought to be. Under favour-able conditions it attains a height of 6 feet. At Sir JOHN CAMPBELL ORDE'S, at Kilmorey, on the west coast of Scotland, the species is thoroughly established and seeds freely, many bushes being fully 6 feet high. It is a native of South-Western Europe; under cultivation in this country it thrives well in peaty soil except in exposed situations. The habit of the plant is erect, and the flowers, which are produced in great profusion, are a fine purplish-red colour.

- CALAMANDER WOOD-or, as it is sometimes called, Coromandel Wood-which is so much valued for small ornamental articles on account of its beautiful figure, is, as is well known, the produce of Diospyros quesita, THW., a large tree of Ceylon. Considering the value of this wood, both in Ceylon and also for exportation to Europe, it is not satisfactory to learn, on the authority of Dr. TRIMEN, that the tree has become extremely scarce. GAMBLE, in his Manual of Indian Timbers, also describes it as the most valuable ornamental wood in Ceylon, which is much in demand, but now scarce.

- PULTENÆA SUBUMBELLATA.-Considering the amount of flower produced, and the compara-tively little attention necessary to grow them, it is matter of wonder that this Pea-flowering plant should not be more universally grown. The same might be said of many other hard-wooded New Holland plants, but the present one has this further recommendation, that is of low, bushy, and erect habit, and flowering at this season would be useful not only in a collection of greenhouse plants, but for the cut-flower basket. The flowers themselves are brownish-orange and yellow. The plant is figured in the Botanical Magacine, t. 3254, and may be seen now, in a flowering state, in the Winter Garden, Kew.

- PARAGUAY TEA .- Yerba, or Paraguay Tea seems to be coming to the fore as a beverage in this country, if we may judge from the way it is being advertised by a firm in one of the large Midland Counties, who style themselves importers of this Tea. The following appears in the Church Times: - " No more bad tea! Drink Verba (trade mark), as adopted by the most fashionable circles in Paris. Descriptive

catalogue post-free. Verba, the finest quality of the samous Brazilian tea (Maté), is very nutritious, and has all the stimulating property of India or China tea, but no tannin, consequently never produces indigestion, and can be safely taken with meat. A light, thin, refreshing drink like tea, with fine fragrance and flavour, yet as nourishing as cocoa. Millions of pounds are used annually in Brazil. Price 2s. per pound." It will be interesting to see whether the leaves of Ilex paraguayensis will ever become an acknowledged beverage in this country. Readers of the Gardeners' Chronicle will remember the persistent attempts of Mr. FORSYTH to introduce the use of the leaves of the common Holly for this purpose.

BATH AND WEST OF ENGLAND SHOW .-At this show, which is to be opened at Maidstone on Whit Monday, prizes will be given for Orchids and for fruits and vegetables. A Cup of the value of \$10 10s., or its equivalent in cash, will be given for the best collection of Orchids; a Cup, or £5 5s., for the best specimen Orchid. Two Cups, of the value of £5 each, will be given for collections of fruit and of vegetables respectively. In view of the fact that Maidstone is the centre of a great fruit-growing district, these prizes, albeit that the season is too early to secure adequate representation, either of fruits or vegetables, ought to do good service, and we trust the Society will see its way to take steps to bring under the notice of its members, by demonstrations and exhibitions if possible, of the best varieties to grow for particular purposes, and the best methods of pruning. Such practical teaching would be even more useful than the exhibition itself.

— MR. JOHN LOADER, who for the last seven years has been Gardener to R. W. BANKES, Esq., Kingston Lacy, Wimborne, Dorset, has commenced business as a Market Gardener and Fruit Grower, at the Ivy Nursery, Reddings, near Cheltenham,

HARPENDEN HORTICULTURAL SOCIETY .-The sixth annual show of this Society has been fixed for Thursday, August 28.

- THE WEATHER.-General remarks on the temperature, rainfall, and duration of hright sunshine, for agricultural and sanitary purposes, during the weck ending February 18, issued by the Metcoro-logical Office, London:— The weather has been generally fair and comparatively dry in the southeastern, eastern, and north-eastern parts of the kingdom, but dull elsewhere, with a good deal of kingdom, but due tescwhere, with a good deat of raip. Temperature has been about equal to the mean in "England, N.W.," but from 1° to 3° above it in all other districts. Readings were high during the first lew days of the period, but subsequently became rather low; thus, while on the 13th or 14th the maxima were as high as 56° in "England, E.," 57° in "England, S.," and 58° in "Ireland, N.;" on the 10th they were below 40° in many parts of Eng-land and Ireland, and at some stations did not exceed land and Ireland, and at some stations did not exceed age or 37°. The minima, which were registered on the 16:h, 17th, or 18th, varied from 30° in the "Midland Counties" and "England, S.," to 34° in "Scotland, W.," and 42° in the "Channel Islands." The rainfall has been less than the mean in all the "Wheat-producing Districts," but considerably more in the "Grazing Districts." considerably more in the "Grazing Districts," Bright subshine shows an increase in duration generally, the percentages varying from 8 in "Scotland, E.," to 28 in "England, S.," and 34 in "Scotland, K.," and "England, E." Depressions observed.—During the early part of this period pressure continued highest over France and North Germany, while depressions travelled in a northerly direction outside our western coasts. The wind was consequently south-west, and at our more western outside our western coasts. The wind was con-sequently south-west, and at our more western and northern stations blew with the force of a strong breeze to a fresh gale. As the week advanced, however, the highest pressure was gradually transferred to Denmark and Scandinavia, while over France and our south-western coasts the barometer fell briskly. With this change in the distribution of pressure, strong south-south-easterly gales were experienced in Scotland, moderate to fresh south-easterly gales over the greater part of England south-easterly gales over the greater part of England and Ireland, and moderate to strong easterly breezes over the Channel and south of England.

- GARDENING APPOINTMENTS,-Mr. B. PER-GARDENING APPOINTMENTS.—Mr. B. PERRYMAN, Foreman in the houses, under Mr. KETLEWELL, at Balrath Bury, Kells, Co. Meath, as
Gardener to Mrs. Webb, Quadretrown Park, Mallow,
Co. Cork,—Mr. W. Dowden, late Gardener at St.
Peters, Isle of Thanet, as Gardener to the Dowager
Marchioness of Downshire, Wakehurst Place, Hayward's Heath, Sussex.

PLANT PORTRAITS.

.ESCHYNANTHUS TRICOLOR, Revue de l'Horticul-

ture Belge, Jan. 1.
ALLIUM OVIFLORUM, Regel, Gartenflora, t. 1134. ANGULOA UNIFLORA, Raiz et Pav.; Regel, io Gartenflora, t. 1137.

ANTHURIUM FERRIERENSE X, Revue Horticole, December 1.

ANTHURIUM SPLENDIDUM, Illust, Horticole, t. 510, 1884.

AZALEAS (hardy), C. S. Sargent, Henrietta Sargent, Ruhra plena, Florist and Pomologist, December, 1883, t. 599.

BATATAS PANICULATA - Convolvulaceæ, Illust, Horticole, t. 507.
CROSSANDRA UNDULIFOLIA, Garden, December

DECAISNEA INSIGNIS, Hook, f. et Thoms, Bot. Mag., t. 6731.

DIANTHUS ATKINSONI . , Garden, Jan. 12. ECHEVERIA VAR. DECORA, Illust. Horticole,

ECHINOCEREUS CASPITOSUS, Engelmann, Garten-

Zeitung, Jao. 10. EREMURUS ROBUSTUS, Regel, Bot, Mag., 1, 6726. ERYSIMUM PUMILUM, Garden, November 24.— Dwarf alpine Crucifer, with yellow flowers. GENTIANA MOORCROFTIANA, Wall., Bot. Mag.,

HYDROSME TEUSZII, Engl.-Aroidacex. West Tropical Africa. Gartenflora, 1884, t. 1142.

IMPATIENS SULTANI, Revue Horticole, January 1. LELIA MAIALIS, Revue de l'Horticulture Belge, December 1.

LILIUM SPECIOSUM VAR. MELPOMENE, Garden, February 2.

LINARIA PILOSA (DC.) VAR. LONGICALCARATA, Regel, Gartenflora, t. 1135.
LOTUS PELIORHYNCHUS, Webb; Hook, f., in Bot.

Mag., t. 6733. MAGNOLIA PARVIFLORA, Siebold, Garden, Decem-

ber 8, 1883. MEDINILLA CURTISH, Hook, f., Bot, Mag., t.

MORINA COULTERIANA, Royle; Hook, f., in Bot.

Mag., t. 6734. MUTISIA DECURRENS, Garden, December 22, 1883. NOTOSPARTIUM CARMICHAELLE, Bot. Mag., 1884,

t. 6741; see also Gard. Chron., vol. xx., p. 169.
NYMPH.EA ALBA VAR. RUERA, Bot. Mag., t.

PAPAVER HOOKERI, Baker, Bot. Mag., t. 6729. l'ASSIFLORA ATOMARIA, Revue Horticole, Jan. 16.

PASSIFLORA RUBRA, L. [?] Gartenflora, t. 1135. PENTSTEMON LABROSUS, Hook, f .- Bot. Mag., t. 6738; Gard. Chron., 1883, ii., p. 536, f. 91. PHACELIA CAMPANULARIA, A. Gray; Hook. f.,

in Bot. Mag., t. 6735.
PHAEDRANASSA LEHMANNI, Regel, Gartenflora,

t. 1138. PRIMULA LONGISCAPA, Ledeb.; Regel, in Garten-

flora, t. 1132 (2). PRIMULA PROLIFERA, Wall.; Hook. f., Bot.

Mag., t. 6732 : syn. P. imperialis.

PRIVA LÆVIS, Juss.; Regel, in Gartenflora, t. 1131. Rose Comtesse De Bareantanne, Journal des Roses, September, 1883.—A Rose of the Bourbon section, raised by Guillot the elder. The flowers are large, globular, full, pale flesh colour.

Rose J. Nicholas, Journal des Roses, November.

—A bybrid perpetual, with globular flowers of a rich velvety-red.

ROSE PRESIDENT SÉNÉLAR, H.P.-This is figured in the October number of the Revue de l'Horticulture Belge, and is a dark crimson Rose, very full, and highly spoken of. Probably the figure does not do it It was raised by M. Joseph Schwarz. iustice.

Rose Queen of Queens, Florist, September .-A cross between a hybrid perpetual and the Maiden's Blush. Wm. Paul & Son.

SEDUM SPATULIFOLIUM, Garden, November 24. -Small tufted Sedum, with short oblong obtuse leaves and stalked corymbs of yellow flowers. Cali-

STENANTHIUM OCCIDENTALE, Asa Gray; Regel;

STENANTHIUM OCCIDENTALE, ASA Gray; Regel, in Gartenflora, t. 132 d. 19 AR. β WAIDRA, Rodigas, in Illustr. Horticole, t. 506.

TIGRIDIA PAVONIA ALEA, Garden, January 3. VANDA SANDERIANA, Garden, February 9. ZENOBIA SPECIOSA FULVERULENTA, Garden, Dec. 29, 1883.

NEPENTHES MASTERSIANUS×.

OF all the Nepenthes grown by Messrs. Veitch in their wonderful treasure-house of these plants, this is the richest in colour, almost the largest in size, while it is also a free grower, and not slack in producing pitchers. On this account we give an illustration (fig. 48) of a full-grown pitcher, and a sketch (fig. 47), showing the habit of the plant, to supplement the meagre illustration given on a former occasion, when the plant had not assumed its full proportions. Its parentage is stated to be N. sanguinea × N. Khasyana.

Home Gorrespondence.

Clematis Jackmanni : its Origin,-I read with amazement in last week's issue of the Gardeners Chronicle M. Lavallée's theory as to the origin of Clematis Jackmanni and other hybrids sent out by our firm; though, as this account differs very materially from the facts, it will not be necessary to travel far to substantiate the true origin of the plants. Lavallée asserts that Clematis Jackmanni is nothing more nor less than a species called Clematis hakon ensis, and he then describes its characteristics thus: -"Its seeds are always numerous, germinate easily, or reproduce the species almost without variation. If the newcomers present any modification it is only in the size or colour of the sepals." But previous to this he states the peculiarities of hybrids, thus:— "When a hybrid plant is successfully raised, that is to say, a product the female parent of which belongs different species to that which constitutes the male parent, a plant is produced which is generally sterile, or at least only exceptionally fertile, and then very inconstant. It is, therefore, necessary to mul-tiply such plants artificially either by cuttings or by grafts," &c. Now, had I been asked to describe the peculiarities of the hybrid Clematis Jackmanni and peculianties of the hybrid Clemans Jackmann and its allied varieties, I could not have found words more to the point than those quoted in this latter extract, and which go to prove—were proof required—that my plants are true hybrids. Therefore, the only conclusion at which I can arrive is that M. Lavallée is at present totally unacquainted with the true Clematis Jackmanni, rubella, and the other seedlings of the same parentage, distributed by our firm in this country. Again, I take exception to the hypothesis that Clematis Hendersoni could not have been one of the parents of C. Jackmanni, for, as a matter of fact, we had about a dozen hybrids in the batch of seedlings that were non-climbers; these had dark purple cylindrical tubular flowers, and mostly differed from their male parent in increased size; but they were of no commercial value in comparison to those sent out. As you appended my original statement in your last week's issue, it is not necessary to go over the ground again, but in passing I would mention that I fertilised the flowers with my own hand. I could, after twenty years, produce confirmatory evidence, were it needed—amongst others, that of my then propagator, Thomas May, now a pensioner of the Gardeners' Benevolent Institution, who sowed the seeds, and reared the seedlings, and would corroborate what I stated in

my letter of 1864. George Jackman, Woking Nursery.— I have read with astonishment your version— I have not seen the original—of M. Lavallée's observations regarding this plant, in which he says that Clematis Jackmanni, which we know is an English hybrid, is not so, but is the C. hakonensis of Franchet and Savatier, published twenty years later (1879), which has been imported and claimed as an English raised novelty. Now what do the plants themselves say in reply? C. hakonensis has "folia ternata," which is a characteristic of the patens group, while in C. Jackmanni the leaves are "pinnate" or "pinnatisect" with five or more leaflets, and, therefore, quite different. I need add no more, though another note of F. and S.—sepals "vix pollicaria"—would be a caricature rather than a character of our English plant. My object—having known all the facts as they transpired—is to bear my testimony to the undoubted good faith and veracity of my friend Mr. Jackman. As regards your own note, that M. Lavallée's figure of C. hakonensis suggests "Jackmanni before it had been improved by cultivation," I can bear witness that Jackmanni has not been improved by cultivation, but that at its flowering it was

at least as fine as it ever appeared since, except as regards the size of the plant. Thomas Moore, Botanic Garden, Chelsea,

Protecting Fruit Trees, — The time will soon be here when protection for the majority of our wall fruit trees will no longer be a matter for contemplation but of actual fact, and the present time may be considered opportune for a few remarks thereon. For some few years now the successful culture of some of the more tender kinds of fruit on open walls has been looked upon by not a few cultivators as being altogether a hopeless task and quite a thing of the past, owing, as they aver, to altered circumstances and to different climatal conditions from those formerly existing, the latter fact necessitating the work of partially or wholly covering walls with glass. This view of the matter will not in many cases bear an investigation without proving itself to be in some degree altogether a fallacy; happy is the man, how-

for years with proper care and attention in regard to keeping it clean and dry. The most convenient method of employing it is in the way of rollers and blinds, to be worked from a rail and brackets fixed under the coping; and to prevent injury to the blossoms upright posts should be placed about 5 feet apart, being joined to the top rail and resting in sockets at the bottom of the wall and about 18 inches therefrom, ordinary sash-cord being used for winding them up and down as occasion requires. Canvas and other materials of a like nature may be used in the same way. Other and more primitive ways of affording protection are to be found in fish netting, Spruce branches, bast, and straw mats. The latter, although thoroughly effective and proof against several degrees of frost, are in a certain sense objectionable, chiefly on account of their non-durability, which extends on an average to about two seasons, or three at the outside, and also on account of the littery appearance they give to a fruit border from loose and falling straw. No fruit wall can be said to have been properly constructed which has not a good broad coping of from 12 to 15 inches either of tiles or stone; where



Fig. 47.-Nepenthes mastersianus x: To show habit and foliage,

ever, holding such views who can make them prevail in a practical form, and thereby obtain what to him is certainly a boon—viz., a glass-protected wall for his Peaches and Nectarines. There is no disputing the fact that a higher class of fruit is produced under such artificial conditions than is to be obtained without them; nevertheless it may, I think, be said that with proper care and attention as good fruit can be obtained on from open walls as in days long gone by. Occasionally we may have a season when it becomes impossible to ripen outdoor Peaches; happily, however, such seasons are exceptional, and, speaking in a broad sense, it cannot be said that we are worse off in regard to weather to what past generations were. What has just been stated must not be taken as implying that a glass-protected wall is a useless expenditure of money; on the contrary, I hold that every shilling laid out for such a purpose is money well invested, and in time will repay its owner fourfold. Of other protecting materials there are now many, some of which have stood the test of time and may be confidently recommended as answering fully the purpose lor which they are intended. Frigi Domo probably stands unrivalled, and although its first cost is somewhat expensive as compared with other materials used for the same purpose, it is cheap in the end, lasting as it does

this defect exists it should be remedied by portable wooden ones, made in convenient lengths, so as to be easily fixed in position or removed at will. For Apricots, Plums, and Pears growing on walls Spruce bracches tied on somewhat sparingly will be found ample protection to secure a "set" in most cases. The same material, as well as netting of a double thickness, may be used for pyramidal and horizontal trained cordon trees growing along the garden walks. A little trouble taken in this respect will invariably in the worst of seasons secure a fair crop of fruit and fully repay all pains and outlay thereby entailed. Reverting for a moment to the matter of wall-protected trees, it is very essential to bear in mind one important point, viz., that the trees should nos be deprived of a single hour's daylight more than is absolutely necessary; lengthened spells of darkness not unfrequently occur on the Sundays, owing to a little dilatoriness in the morning, and eageness to have done with the work in the afternoon. As a matter of course, it will sometimes occur that the thermometer will be down to freezing-point to as late as 10 or 11 o'clock in the morning, and occaionally there may be a day when storms of sleet and a frosty air prevail throughout; under such conditions the blinds are much better down, neverthe-

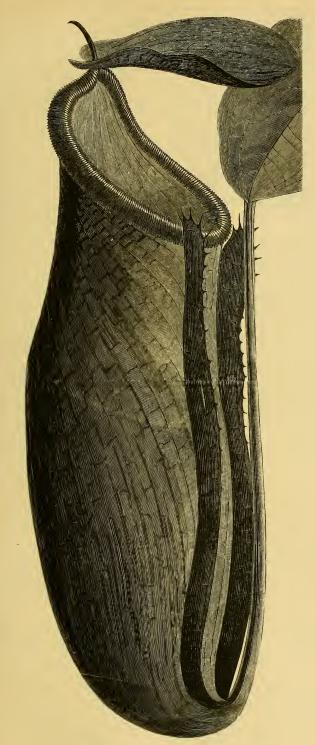


FIG. 48,-NEPENTHES MASTERSIANUS X: DEEP CRIMSON, (SEE P. 248.)

less the fact still remains, that too little light has a very weakening effect on the blossoms, and a very great tendency to defeat the object in view. 7. H.

Lilium candidum.— Reference to this plant, regarding its value for pot culture, has been previously made in your columns, and perhaps there will be nothing lost by a repetition, as it is invaluable for early forcing, and one of those popular subjects most frequently met with in our berbaceous borders. Last year about this time we dug up a few clumps, and put them into 12-inch pots; they were put into a gentle heat for the first two or three weeks, alterwards into a higher temperature, and produced their first lot of flowers towards the end of April. After these were cut the plants—or perhaps in strictness I ought to say bulbs—were transferred to the borders again without disturbing their root unnecessarily at the end of October. We were rewarded by a second batch of flowers from the same clumps, which in our case proved equally as valuable as the first. In taking them up now the roots should be lifted carefully, allowing the clumps to be as near the size of the pots they are intended to be forced in as possible, and when they are matured they should have the benefit of weak liquid manure. H. J. H.

Hepaticas.—I am grateful to the Rev. C. Wolley Dod for his valuable information respecting this charming flower. A large plant of the single blue that came into bloom quite early, now appears to be forming seed-pods. As soon as the weather is milder I will plunge the pot up to the rim in an open border, and sprinkle some peat about the flower-stalks as suggested, in the hope that seed-lings may come from it. In addition to the single blue, thave now in flower a Continental variety I got under the name of coerulea levigata, paler than the single blue, of a delicate lavender-blue—a very pleasing shade indeed, and of good size. It is quite distinct in shade from angulosa, which is also in bloom. Then there are Barlowi and the single purple, both deep shades of blue, and quite distinct—the purple the deepest of the two. The double blue appears to be later, and is only just coming into flower. I have some fine plants in pots, and they will flower freely presently. The single white is a perfect gem among Hepaticas, it is so pure and sweetly pretty. A vigorous young plant is now in nice bloom, and it is truly charming among the blue-flowered varieties. This, like the single blue, will cast its seed, and produce seedlings. I remember seeing, a few years ago, in Mr. Perry's nursery at Banbury, some self-sown white seedlings that had grown and flowered about the parent plant, but they appeared to be in every case inferior to it. Plants of the double red are in full beauty; it is every free indeed, and charming in colour. What few plants of the single red I have have not flowered this season, for some reason. Can Mr. Wolley Dod, or any one else, say how many distinct varieties of single red Hepaticas there are? During the summer my Hepaticas stand in a bed of coccan-tut refuse on a north aspect, and fully exposed to all weathers. This position seems to suit them well; there is a cool and moist bottom, and the roots find their way down into it. They are not allowed to become dry. The greatest turble is with the worms; they

the plants from the pots and remove the worms. R. D.

— It may prove of some interest or use to those who, like myself, find a difficulty with Hepaticas, to know that a light covering during the winter of withered Ferns seems to help them on a good deal. Some sort of protection would seem but natural, since in their wild state they grow under Pine trees, or on the sheltered side of steep banks. With us the white Hepatica does well, making rather large robust plants; but the blue and the pink, both double and single, go ofi. The plants certainly seem happier, however, since we have tried the Fern covering. It is a little bit of gardening that I take pleasure in doing myself, laying the Ferns with as light a touch as possible, so that the flowers may rise through them. It is possible that something else might answer better—such as Beech twigs with the brown leaves still hanging on them. A little garden in Cornwall has been described where Hepaticas bloom in beautiful masses of blue underneath Roses trained on a trellis 2 feet above them. The leafless Rose hranches would here give the slight protection needed in winter, while later on the summer leaves would shade off the sun. From "A Buckinghamshire Garden,' Feb. 16.

Storing Potatos. — When I came here, some three years and a half ago, the place had only just been built, the garden was only a field that had not been cultivated for four or five years, and there were no store-rooms; but two years ago we had some rooms built, with two cellars dug out of the solid

chalk. A workmen's room, Onion room, and seed room over the latter were provided, the seed room being fitted up like a fruit room, with the battens on the shelves placed an inch astunder to allow the air to pass from top to bottom, and the windows face the east, the door the west—an arrangement which I find answers very well. Our Potatos at the present time, although the winter has been so mild, are only speared about half an inch, and the shoots are almost as thick as one's little finger; and I think Potatos never do better than when planted in that condition. They come up healthy and strong, and out of 60 tons stored these last two seasons I have not had more than to cwt. diseased, and those have been early sorts, chiefly Ashleaf Kiddeys. The cellars are fitted up with bins to hold 3 tons of Potatos each, and are made with 14 inch deals, which run in grooves, both sides and front right up to the ceiling, with a trapdoor at the bottom for getting them out. Last winter, although the door and windows were kept open every day, the tubers exhausted themselves so much that was used I had some ventilating shafts sunk on the east side, one to each bin, with iron gratings, which in case of frost had only to be covered with tiles to stop the draught. In addition to this I had all the loards of the bins brored with inch holes diagoually, and about 18 inches apart, so as to always have a current of air passing right through the bins; and the result has been so satisfactory that the tubers are now quite dormant. The sorts stored are Magoum Bonum and Red-skinned Plourball, which seem to do best in this chalky soil. I have sent a few for your inspection, which I think will fully bear out my remarks. [Certainly. Ed.] C. F. Prangell, Kensington and Chelas Scholes, Bontlead, Survey.

Sisytinchium grandiflorum. — On inquiry amongst gardening friends I find that this bulb is rather earpicious in its requirements. Books of cultural directions recommend peat for it, but with me it dies out in two years in peat, but is now flowering grandly in two or three places in light very well drained sandy loam. Mr. Barr tells me that at Tooting, on raticed beds of equal parts of loam, leaf-mould, and sand, it increases "like Chickweed." On the dmarty loam of Devonshire, so good for most bulbs, it pines away. The general name Sisyrinchium has puzzled those who give the meaning of names in botanical dictionaries, who generally connect it with a pig's snout. It is one of those classical names which were utilised by the herbalists of the sixteenth and seventeenth centuries, probably without taking much trouble to inquire what plant was originally enough the bulbs, and the sixteenth and seventeenth centuries, probably without taking much trouble to inquire what plant was originally much to Old World, it is clear that Theophrastus and Fliny did not denote by the word the same plant as Linneas did. In such cases the connection between the name and the nature of a plant is less important. An editor of Pliny, at the beginning of last century, first suggested, not very happily, that the name and hen nature of a plant is less important. An editor of Pliny, at the beginning of last century, first suggested, not very happily, that the name and and a coating of wool, from which flannel clothes in Theophrastus, I find, after a long huat, a very short notice of the bulb, and the passage is evidently imperfect, as it makes no sense as it stands. The author had just been speaking of eriophorous or wool-bearing bulbs, which between the fleshy edible tunics had a coating of wool,

Potato Planting.—The present time seems the lest for a little discussion as to the best method of the many now in vogue of planting seed Potatos. Some are anxious about the strength of the tubers being wasted in the growth they make in the seed rooms, cellars, or wherever they may have been packed away, while some advise rubbing the growths oil, and some let them take their chance. Now it seems to me that the present beautiful weather should be made use of io getting them planted and done with. It has been my practice for the last five years possible in the autumn. As a rule this takes place during September or October, and as Potatos follow Peas and Beans I know of no better plan than to get these cleared off as early as possible after the crops are gathered, and to get the ground ridged up and put in order for the winter. I have to-day (February 18) planted several bushels of Ashleaf Kidneys between

ridges thrown up last October, and the ground works like ashes. We first draw a drill along the bottom of the furrow, lay the Potatos in, and cover them with a handful of burut refuse, then run a rake along the sides of the ridges, which brings down sufficient soil to cover the sets deep enough to be out of the reach of frost, and to leave the greater portion of each ridge to serve as protection from cold winds, and also for covering the young Potato plants as fast as they come through during the first few weeks till danger from frost is over. After the last covering of soil, the Potatos get very little attention; but if we get much rain to beat the surface down hard the soil between the rows is forked, or a hoe is run through them once or twice as is needed, and they do not require carthing-up, as by planting as I have described they get sufficient from the ridges. No doubt many others could give some valuable hints ou this important matter. It seems to me to be altogether wrong to leave Potatos growing in the sheds until they are grown together like a mat, or to set men to rub off the growths, to expect a good return for your labour; and when the old practice of dibbing in is carried on I do not see how the sets are to be got in without being more or less injured. Now that I have given my opinions, may I hope that some more able pen than mine will take the matter up? There is one more point: I would strougly advise those of your readers who have not made use of burnt refuse as a dressing for Potatos to do so this season.

Strangled Hyacinths.—Taking the Hyacinth as a whole, it does not lend itself so readily to forcing as amany winter-made-flowing plants, indeed there are few, very few kinds that can be forced with any degree of certainty before Christmas and be had in anything like presentable condition. To attempt forcing either blues, end as to whites it is a question of experience among the varieties as to what kinds artificial heat may be applied to without injuring the prospects of the plant. Apart from the early Romao Hyacinth, none can equal, nuch less surpass, the double white kind known as La Tour d'Auvergne for early forcing. I have this winter forced a considerable quantity of this variety, and not in a temperature generally recognised as forcing, viz., 70° or 75°, but on a bottom-heat which sends the thermometer (which was placed among the plants for test) to 112°; the bulbs of these, which were only an ordinary sample, were potted the second week in October, and were introduced into heat in batches as soon as they were deemed fit, the temperature ranging from 50° to 55°, and kept dark, and finally they were placed on the bottom-heat referred to above; the result lar exceeded any previous experience with it, though I remember on one occasion, some eight years since, having got a few of this same variety in flower very early. These were placed upon a hot-water circulating tank, which was supplied direct from the boiler, and situate immediately over it, the plants belog about 6 inches from the water. The individual pips of this variety have a distinct tapering outline, and with the aid of a little cotton-hool use. The majority of the failures in early forcing. I am strongly of opinion that the double white kind cited above may be had inflower from the first week in December, provided the bulbs are potted in good time—say the first or surfangled "forms (see p. 181) one so often sees in the none office, while those that energed from it bore the serve element of the first were experimented with under similar conditions,

Blending Petroleum with Water,—Petroleum can be blended with water, evenly held in solution, by freezing Gishurst Compound and the oil separately; and then uniting the two at a freezing temperature; the lower the more rapid will the oil dissolve the compound, and remain with it till required for use, when boiling water has merely to be added to make what I know, from experience, to be a really effective, and probably the best insecticide known for general purposes. The Woodward, Ardgillan Castle, Balvirgan.

Luculia gratissima, — I can quite understand how delighted Mr. Inglis was to look upon and inhale the perfume of this grand old plant. I had the pleasure of seeing a fine plant at Syston IIall, Grantham, on the 21st ult., with, I dare say, close upon a hundred fine trusses; it was a splendid sight. The old plant, to my knowledge, has occupied the same trellis on the back wall of the five conservatory for upwards of twenty-four years, and looks likely to keep its post for years to come. ? Bauser, The Rookery.

CLIMATE AND VEGETATION.

THE FLORA OF THE COUNTRY BORDERING THE RIO GRANDE, IN CHIHUAHUA AND TEXAS. - The country bordering the Rio Grande, iu Chihuahua and Texas is nearly destitute of trees-a feature which marks the aridity of the climate; yet, in certain localities, as on the bottom lands of the Rio Grande and Rio Concho, a vigorous and somewhat varied forest growth was found at the advent of the whites. No better illustration of the relation between the kind of vegetation and the water supply in a country can be found than that afforded by the luxuriant growth of trees of several kinds along the Cibola Chinati Mountains, Texas; while on all sides this oasis is surrounded by an apparently boundless grasscovered prairie, where the rainfall is inadequate for trees. On the mountain summits, south of the Rio Grande, is a sparse growth of Piñon (Pinus edulis) and evergreen Oak (Quercus Emoryi). The lowlands in certain localities, over thousands of acres, are thickly set with Mesquite (Prosopis glandulosa), here a strong spreading shrub, never a tree, but with roots disproportionately large, composed of very dense tissue, and furnishing a large amount of excellent fuel. Along the arroyos Cotton-wood may occasionally be either the narrow or the broad-leaved form (Populus mouilifera or P. angustifolia), and more commonly the Hackberry (Celtis occidentalis), and the Nopal, the little Black Walnut (Juglaus rupestris), the Mexican Buckeye (Ungnadia speciosa), and the Guayacan (Guaiacum Coulteri). The drier portions, especially the gravel terraces bordering the Rio Grande, are frequently covered with the Creosote plant (Larrea mexicana) and Fouquiera spleodens. The latter forms a cluster of fifteen or twenty canes, 10 or 12 feet high, springing from the same root, and bristling with spines an iuch or more in length, of which the bases are in contact. Usually it is without leaves, and seems as though dead; but for a brief interval in the rainy season it is covered with small, crowded, obovate leaves, and from the summits of each stem springs one or more spikes of brilliant crimson flowers.

Among the shrubs which form the "chaparral," or thickets, the Holacantha is the most conspicuous, and Salazaria the most interesting. The former, as its name implies, is a mass of thorns, which are often as large and strong as those of the Honey-locust. The branches and spines are covered with a green epidermis, which performs the functions of leaves, and in the spring these bear bunches of yellow flowers similar to those of Berberis. The Salazaria is a Labiate allied to Scutellaria, and the seed is inclosed in a balloon-like capsule, similar to that of the Balloon Vine (Cardiospermum), also found here, and having the same function, namely, dissemination by the wind. Two species of Acacia and one of Berberis (B. trifoliata), all spiny, help to make the chaparral as nearly impenetrable as the thickets of Cactus further west. We are here fairly within the confines of the Cactus country, but not in its heart. Many species, differing much in babit, are constantly in sight - the Nopal, an Opuntia, being the most common, one species growing in a mass 10 feet or more in height, with each leaf-like subdivision of the stem a foot in diameter. Though covered with spines this plant is largely eaten by cattle, and nothing is more common than to see a patch of it trampled down, half-eaten, and the flattened stems notched by semicircular bites. One species or variety of Opuutia, growing abundantly in Chihuahua, is of a deep purple colour, which makes it conspicuous and often orna-mental.

The most striking feature in the botany of this region is formed by the Century-plaot and its allies, other species of Agave, Habranthus, and Dasylirion, and the Yuccas. In many places these are the only plants attaining any large size, and are very numerous, scattered over the plains and slopes of the mountains; the plants not crowded, but separated by intervals of a few feet, which are occupied with a luxuriant growth of Gramma grass. The Yuccas belong to four species, or three species and two varieties—Yucca augustifolia and Y. baccata. Of these, two rise to the height of 5 to 15 feet, with trunks from 6 to 12 inches in diameter, the crowded radiating leaves crowing the summit in a round or oval mass, 6 feet or more in diameter, the old leaves hanging perpendicularly, and forming a peculiar thatch around the trunk and extending to the ground.

The Century-plant is in Chihuahua represented by

a variety with shorter and broader leaves than that commonly cultivated. From the centre of the tuft the flower-stalk rises from 10 to 25 feet in height, composed of woody tissue and standing some years after bearing flowers. These persistent flower-stalks, crowning the ridges and visible for miles, give a peculiar aspect to the scenery. The Century-plants are, however, nowhere as numerous as the species of Dasylirion, with which they are associated, and which do not die with the effort of florescence. Further south the Agave supplies from its sweet juice the material from which an intoxicating drink is pro-In this region, however, an alcoholic beverage is obtained from the Sotol (Dasylirion texanum), which, from its abundance and the use made of it, deserves a prominent place among the economical plants of the country. Hundreds of thousands of acres are covered with this Sotol, and it would seem that it might be much more largely utilised than it is for the manufacture of alcohol. The leaves are flat, and garnished on either side with strong recurved hooks. The colour is yellow-green, and the leaves are very numerous. From the centre rises, at a certain stage of growth, a woody flower-stalk, 10 feet high, and at the base as large as one's arm. The trunk rises but a few inches above the ground, and is completely concealed. The top of this trunk, com-posed of the closely imbricated leaf-bases, which are broad, yellow, shining, succulent, and sweet, with a pulpy mass at the centre containing much saccharine matter, raw, or better roasted, is palatable and outritious; so much so, that in the country where it grows it is said the Indians never really suffer for want of food, as this affords them an abundant if not varied

In the preparation of Sotol whiskey-a liquid called "mescal," as is also that made further west from other plants-the portion of the plant which has been described is trimmed so as to resemble a head of Cabbage, then roasted and fermented, the product of the vinous fermentation being distilled in the ordinary For roasting the Sotol a pit is dug, some nasonry. In this a fire is built, and whee it has been hurned down the pit is filled with several hundred Sotol heads. When roasted they are chopped in pieces and fermented in vats.

Another interesting plant, the companion of the Sotol, is the "Lechuguilla" (Agave heteracantha), of which the leaves furnish a strong fibre, universally employed for ropes, sacks, &c., in Northern Mexico. This grows on the mountain slopes, generally at an elevation of about 4000 to 5000 feet, is common in all Northern Chihuahua, and especially abundant on the Chinati Mountains in Texas. Dr. Newberry, before the New York Academy of Sciences.

COLONIAL NOTES.

FARMERS' PROSPECTS IN CANADA.-Your observations on the subject of the future of your farmers' occupations are undoubtedly judicious, and borne out by the general experience of the cultivators of land in this country; and first, with regard to vegetables, it has been found, as you remark, that any attempt to exceed the regular supply has turned out unprofitably. With regard to small fruit, the only way to ensure a profitable demand for a quantity would be to can it, and for this purpose too much cannot be grown; and in all situations planting forest trees might be undertaken with a good prospect of success, as the denudation of our forests has been going on to such a fearful extent that numbers have to go away an immense distance from their homes, and at large expense to obtain a supply of timber far inferior to what they used to obtain cheaply in their own neighbourhoods. In this district, and in all other parts at all contiguous to our large towns. Twenty years ago the woods were full of fine large l'ines, Oaks, and Elms, but now they are nearly all gone, and the lumberers have departed to work in inferior timber at places far distant. It may also be remarked that in many of the Pine districts the quantity of available timber has been very much restricted by the bush fires, which the last few years have ranged over hundreds of thousands of acres, and destroyed a considerable proportion of it. In some districts of Muskoka and elsewhere, moreover, the Pine has been, all of it, turning out defective, and hence the poor lumber you complain of. With the prospective colonisation of our great North-west Territory, Wheat may be expected to be grown to any extent that the expenses of its transportation will allow; and should Hudson's Bay be found open enough to afford an outlet to Europe, there will be scarcely any limit to the production of this cereal. At present the cost of transit and the value at the railway station leave no margin of profit for cultivation for export. A Constant Realer, Minesing, Ontario, Canada, Feb. 5.

Reports of Societies.

Manchester Horticultural Mutual Improvement Society: Feb. 7.—At this meeting, over which Mr. Bruce Findlay presided, Mr. W. Nield read a paper on "The Apple," which was unquestionably the best and most useful of all bardy futus. Though it possesses many good qualities, the Apple had not received from those ho till the soil anything like the amount of attention to which it was justly entitled. According to the agricultural returns for 1883 there were in England 185.782 acres of land planted with fruit trees. If 35,782 acres, a liberal estimate, were deducted for land planted with Pears, Plums, Cherries, and Filberts, there remained 150,000 acres devoted exclusively to the cultivation of Apple trees. About seventy standard Apple trees can be grown on an acre, so that the total number of trees would be 10,500,000. There are probably as many Apple trees grown in hedgerows and farm orchards, not returned as such, and market gardens, as are grown on all the land specially devoted to their cultivation. This would bring up the total number of Apple trees to 21,000,000, or nearly one for every individual in England. If one-half is deducted 10,500,000 trees still remain, and, assuming each tree to bear 2 bushels per annum, the yearly crop would amount to 21,000,000 bushels, the market value which of at 4s, per bushel amounts to £4,200,000. Supposing the trees to be grown in 150,000 acres, the annual value of the crop would be £28 per acre, which, with good cultivation and a better selection of sorts, might easily be doubled. In fact he did not know of with good cultivation and a better selection of sorts, might easily be doubled. In fact he did not know of any purpose to which the land could be put which would brigg in so large a return for the capital employed, if farmers and market gardeners only knew how to go about it. If epointed out that demand for raw fruit is increasing in a greater ratio than the population. We have now from 3000 to 5000 different names for Apples, though he very much doubted if we have anything like that number of varieties in cultivation. The greatest may be a supplied to the control of the state of the control of the

A LARGE APPLE TREE. - Probably the largest Apple tree in the world is to be seen on the farm of Delos Hotchkiss, in Marion, Conn., U.S.A., the exact measurements of which are as follows :-

Circumference of trunk near the ground ... 15 feet 3 inches, ... 3 feet 15 inches, ... 3 feet 3 inches, ... 16 n. 2 n. 16 n. 1

A peculiarity of this tree is that it is what is termed "an alternate bearer," five limbs bearing one year and four the next. The usual yield from the five limbs is about 85 bushels, although in a single instance it reached 1 to bushels; and the four limbs vary from 35 to 40 bushels. The fruit is said to be excellent for winter use, though on this point I can only speak from hearsay. The age of this venerable Apple tree is estimated at about 175 to 180 years. Curiously enough the patriotic old tree marked the centennial year by bearing fruit on all its branches, the first time it has been known to do so in its life, and it has continued to do so down to the present time. Some of the limbs are now dying, others are broken down, signs of decay appear in many places, and it is thought that this noble specimen of Pyrus malus will soon be numbered among the things of the past. Rev. C. H. Hovey, in "Scientific American."

Obituary.

HENRY MILLS, late head gardener to G. L. Basset, Esq., Tebidy Park, Cornwall, died on Wednesday, February 13, aged seventy-seven years. He entered the above gardens at the age of twelve years, and worked himself up to the head position, which he held for several years. He served in the gardens, in one capacity and another, sixty years. He had for some years received an allowance from his employer.

The Menther.

STATE OF THE WEATHER AT BLACKHEATH, LONDON FOR THE WEEK ENDING WEDNESDAY, FEBRUARY 29, 1884.



Feb. 14.—Fine day, sun shioing at times. Light rain frequently from 6 r.M. till mideight.

— 15.—Fine cold day, occasional sunshine. Fine clear cold oight.

— 16.—Fine day and oight, cold wied.

— 17.—Fine day and oight.

18.—Very fape bright day. Fine night, cloudless till

19.—Rain falling from early morning till 10.30 A.M., dull afternoon. Thin rain from 3 F.M. to midnight.
 20.—Fine bright day, windy afternoon. Fine night, dark and cloudy.

LONDON: Atmospheric Pressure.—During the week ending February 16, the reading of the barometer at the level of the sea increased from 29.40 inches at the beginning of the week to 30.03 inches by 9 A.M. on the 12th, decreased to 29.94 inches by midnight on the same day, increased to 30.18 inches by 3 F.M. on the 14th, decreased to 30.18 inches by 9 A.M., and increased to 30.18 inches by midnight on the 15th,

and was 30.02 inches by the end of the week.

The reading of the barometer for the week at the level of the sea was 29.06 inches, being 0.18 inch lower than last week, and 0.02 inch above the average

of the week.

Temperature, — The highest temperature in the shade in the week was 56°.5, on the 13th; the highest reached on the 16th was 42°.2. The mean of the seven high day temperatures was 49°.3.

The lowest temperature was 31°, on the 16th; on the 14th the lowest temperature was 45°.5. The mean of the seven low night temperatures was 37°.5.

The greatest range of temperature in one day was 45°, on the 13th; the smallest was 6°.5, on the 14th. The mean of the seven daily ranges was 11°.8.

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14th. The mean of the seven daily ranges was 11°.8. The mean temperatures were—on the 10th, 42°.6; on the 11th, 49°.8; on the 12th, 49°.8; on the 13th, 49°.8; on the 13th, 48°.3; on the 13th, 39°; and of the 16th, 36°.5; and these were all above their averages (excepting the 16th, which was 2°.2 below) by 3°.6, 1°, 4°, 9, 10°, 9, 9°.5; and 6°.3 respectively. The mean temperature was 42°.9, being 0°.6 higher than last week, and 4° above the average of the week.

the week.

The highest reading of a thermometer with blackened bulb in vacuo placed in the full rays of the sun was 97°.5, on the 13th. The mean of the seven readings was 85°.4.

The lowest reading of a thermometer with its bulb placed on grass and fully exposed to the sky was 24°, on the 16th. The mean of the seven readings was

Rain fell on four days, to the amount of 0.34 inch.

ENGLAND : Temperature .- During the week ending ENGLAND: Temperature,—John gitte week enting February 16 the highest temperatures were 56°,5 at Blackheath, 56° at Cambridge, 55° at Truro; the highest at Bolton was 49°,4, at 1 Preston 51°, and at Wolverhampton 51°.8. The general mean was

The lowest temperatures were 29°.5 at Wolverhampton, 31° at Blackheath, 31°.1 at Bolton; the lowest at Plymouth was 38°.9, at Leeds, 35°, and at Liverpool 34°.3. The general mean was 33°. The greatest ranges were 25°.5 at Blackheath, 24° at Cambridge, 22°.2 at Wolverhampton; the smallest ranges were 41°.5 at Plymouth, 17°.5 at Preston, and 17°.6 at Liverpool. The general mean was 20°.3.

and 17 to a 20°, 3.

The mean of the seven high day temperatures was highest at Plymouth, 51°, at Truro 50°,6, at Sheffield 49°,6; and was lowest at Bolton, 43°,8, at Liverpool 20°,6; and was 48°,6. The general mean was 48°,

49°.6; and was lowest at Bolton, 42°.8; at Liverpool 46°.2, and at Hull 46°.6. The general mean was 48°. The mean of the seven low night temperatures was highest at Plymouth, 41°.1, at Turo and Brighton 40°; and was lowest at Wolverhampton, 34°, at Bolton and Hull 36°.4, The general mean was 37°.8.

The mean daily range of temperature was greatest at Wolverhampton, 13°.3, at Nottingham 12°.4, at Sheffield 12°.3; and was least at Bolton, 7°.4, at Liverpool 8°, and at Brighton 8°.6. The general mean was 10°.2.

The nean temperature was highest at Elymouth.

mean was 10°.2.

The niean temperature was highest at Plymouth, 45°.6, at Truro 44°.9, at Brighton 43°.9; and was lowest at Bolton, 39°.7, at Wolverhampton 40°.2, and at Hull 41°.1. The general mean was 42°.5. Kain.—The largest fall was 1.69 inch at Truro, 0.68 inch at Preston, 0.61 inch at Bristol; the smallest fall was 0.05 inch at Leicester, and 0.09 inch at Cambridge and Nottingham. The general mean fall was 0.09 inch fall was 0.40 inch.

SCOTLAND: Temperature.—During the week ending February 16, the highest temperature was 56°, at Glasgow; at Dundee the highest was 49°.3. The general mean was 51°.2.

general mean was \$1.2.

The lowest temperature in the week was \$1°, at Perth; at Glasgow and Paisley the lowest temperature was 35°. The general mean was 33°.1.

The mean temperature was highest at Glasgow, 43°.2; and lowest at Dundee, 39°.7. The general mean was 41°.

Mean was 41°,5.

Rain.—The largest fall was 1,39 inch, at Glasgow,
Greenock, and Paisley; and the smallest fall was 0.24

The general mean fall was 0.83 inch. JAMES GLAISHER, F.R.S.

Answers to Correspondents.

ADVERTISEMENTS: H. W. The subject does not call for any interference on our part.

AZALEA AMGENA SPORT: D. D. Your sport, bright rosy-cerise, is very pretty, and certainly well worth propagating.

BEES: C. M. A debateable question. See the answer given to a similar inquiry in our number for January 19, p. 80.

Books: J. H. U. Kemp's How to Lay Out a Garden (Bradbury, Agnew, & Co.).

CEREALS, THE WILD FORM OF: Enquirer. Nothing definite is known on the subject. M. Fabre's observations have not been confirmed. The latest information is given in De Candolle's Origine des Plantes Cultivest. We do not know where seed so Ægiogo can be obtained. An enquiry of some of the seedsmen in Marseilles or Genoa, or of Messrs. Vilmorin, of Paris, might be successful.

Erratum. — At p. 217, col. c, fig. 44, for "Iris reticulata" read "Iris histrio."

IMPORTED LILIUMS: J. F. J. C. In the South they do best pluoged in cocoa-fibre refuse in the open air, but in your wetter climate it would be better to protect them from rain. Any cool place will do.

LILIES OF THE VALLEY: IV. L. If you use such excessive atmospheric heat against your better judgment it is no wonder that you have met with failure. It is never difficult to get good results from strong healthy crowns if you will avoid parboiling them.

NAMES OF FRUITS: H. O. Apple: Cellini. — Thos. Taylor. Pear: Broom Park. — Jas. Lloyd. Your Apple we cannot recognise. It is most likely a local variety.

NAMES OF PLANTS: A. Y. Z. The Paper-white Narciss (N. tazetta var. papyracea); 2, yes, it will grow in the open air. — Camjee. Cymbidium sinense.—Cambrian. Odontoglossum Coradinei var. —A. IV. The flowers are 100 much withered for identification.—Buckland. 1, Euphorbia charasias; 2, Abies Nordmanniana; 3, Rhododendron ponticum var.; 4, Quercus llev, 5, Prims Laricio; 6, Quercus llev var.; 7, Rubus leucodermis.

NOTICE TO QUIT: F. C. G. has not stated his question sufficiently plainly, and had better consult a solicitor.

ORANGES IN AUSTRALASIA: Orange, See P. I. Simmonds' Tropical Agriculture, published by Spon; also in vol. ii. (1882—1883) of The Tropical Agriculturist, compiled by A. M. and J. Ferguson, Colombo, Ceylon, and published by Trübner & Co., you will find much general information on Orange culture. culture,

TUBEROSES: Florist. The earlier you start with these the more patience you must have. The best practice is to pot into soil that is in a fairly moist state, one in

a pot, plunge into a bed of fermenting material of enduring warmth, of about 80° Fahr, eovering the surface of pots and bulbs with a layer of moss or eacoa fibre, to keep in the moisture and to do away, as far as possible, with watering till the bulbs start. Keep them near the glass, and do not let the air temperature in the pit or hotbed exceed 60° by night, with a 10° rise by day; air when necessary, to rid the pit of excess of moisture, and give more and more water as the pots fill with roots. They will not all begin to grow at one time, and must therefore be treated according to their wants. When fairly on the move remove frem bottom-heat, and place in a more airly position, where the temperature is about 60° to 55° by night, and see that they do not get drawn by shade, or from being at a distance from the root.

TULIPS: T. & T. We can only suppose that there has been some mismanagement, but you give us no information on the subject.

** All communications intended for publication should be addressed to the "Editor," and not to the Publisher or to any member of the staff personally. The Editor would also be obliged by such communications being written on one side only of the paper and sent as early in the week as possible. Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

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INTELLIGENT READERS, PLEASE NOTE: — Letters re-lating to ADVERTISEMENTS, or to the supply of the Paper, should be addressed to the Publisher, and NOT to the Editor,

CATALOGUES RECEIVED.

W. & J. BIRKENHEAD, Sale—Abridged Catalogue of Ferns, Selaginellas. R. DEAN, Ranelagh Road, Ealing—New and Choice Florists' Flowers, &c. JOHN SUTHERLAND, Lenzie, N.B.—Florists' Flowers. THOMAS KENNEDV & Co., Dumfries — Select Agri-cultural Seeds.

THOMAS KENNEDV & CO., Dumfries — Select Agricultural Seeds.
WILLIAM RENNIE, Toronto, Ontario, Canada—Vegetable and Flower Seeds.
WILLIAM FISHER, Market Place, Burton-on-Treat —
Vegetable and Flower Seeds, &c.
SAMUEL VATES, Old Milligate, Manchester—Vegetable
and Flower Seeds.
JAMES FARAR & CO., 36, Primsose Street, Bishopsgate, E.C.—Wholesale List of Garden and Farm
Seeds.
BIDDLES & CO., Loughborough—Flower and Vegetable
seeds.

Fratelli Rovelli, Pallanza, Italy, Catalogo e prezzo

COMMUNICATIONS RECRIVEO.—H. & Son.—J. D.—J. C. S.—
R. P. G.—B. S. W.—E. V. B.—J. B.—J. R. J.—Rev.
C. H. W. (Hanaks).—G. N.—J. F.—J. S.—H. O.—T. Taylor.
—T. B. B. (many thanks).—W. F. B.—J. H. H.—C. F.—
H. R.—J. A. (hanks).—C. W. D.—G. D.—T. T.
A. O. W (many thanks).—E. Goeze.—Griefswald.—M. F.—
W. E.—T. B. B.—G. F. H., Ceylon.—Dr. Bonavia, Etawah.
—J. W.—Harrison Weir.

Markets.

COVENT GARDEN, February 21.

Its subjoined reports are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list weekly, and are responsible for the quotations. It must be remembered that these quotations are averages for the week preceding the date of our report. The prices fluctuate, not only from day to day, but often several times in one day, and therefore the prices quoted as averages for the past week must not be taken as indicating the price at any particular date, still less can they be taken as rudies to the orice in the coming week. E.o.1 as guides to the price in the coming week. Eo.].

TRADE has been more lively this week, with a general improvement in all classes of goods. James Webber, Wholesale Apple Market.

FRUIT.-AVERAGE WHOLESALE PRICES.

Apples, ½-siev. 1 0 5 0
Cobs, per too lb...125 0 - 1.6 capples, per lb. 2 0 - 5 0
Crapes, per lb. 2 0 - 6 0
Lemans, per case ...15 0 - 25
Cobs 5 0 Stawberries, per ac. 1 6 ... 0

VEGETABLES -AVERAGE RETAIL PRICES.

s. d. s. d.	s. d. s. d.					
Artichokes, Globe,	Herbs, per bunch n 2- 0 4					
per doz 3 o- 5 D	Horse Radish, bund. 3 0- 4 0					
- Jerusalem, bush. 4 o	Lettuces, Cabbage,					
Asparagus, English,	per dozen 1 6					
per 100 ,,12 n- ,,	Mint, green, bunch 1 o					
 Bundle, small 5 o 	Mushrooms, p. baskt. 1 0- 2 0					
Beans, French, p. 100 3 6	Onions, per bushel 7 0					
Beet, per doz 1 o	- Spring, per bun. p 6					
Cabbages, per doz 1 o- 2 o	Parsley, per bunch o 4					
Carrots, per bun o 4- o 6	Radishes, per doz, 1 6					
Cauliflowers, Eng-	Rhubarb, per bued. o 4- o 6					
lish, dozen 2 o- 3 o	Salsafy, per bundle o 8					
Celeriac, per root o 4- o 6	Seakale, per punnet 2 o					
Celery, per bundle 1 6- 2 6	Small salading, pun. o 4					
Cucumbers, each 1 0- 2 0	Spinach, per bushel 4 o					
Endive, English, per	Sprue, French, bund. 1 6					
dozen 1 o	Tomatos, per lb 2 6					
Garlic, per lb o 6	Turnips, per bun o 4					
POTATOS.—Keut Magnums, 8os. to 1005. per ton; do., Regents, 8os. to 1005.; Champions, 705. to 8os.						

CUT FLOWERS .- AVERAGE WHOLESALE PRICES. Hyacinths (Roman), 12 sprays, 1 10-1 6 Lapageria, white, 12 blooms . . . 30-6 0 — red, 12 blooms . . . 10-3 0 Lilac, white Fr., bun. 8 0-10 0 Lily-0f-Valley, 12 spr. 0 9-1 6 Marguerites, 12 bun. 6 0-9 0 Mignonette, 12 bun. 30-9 0

PLANTS IN POTS.—AVERAGE WHOLBSALE PRICES.

PLANTS IN FOTS.—AVERAGE WHOLESALE PRICES.

Aralia Sieboldi, doz. 12 0-24 o
Aralia Sieboldi, doz. 12 0-24 o
Arabor-vitic (golden),
per dozen 6 0-18 o
Accommon), dozen 6 0-12 o
Begonias, per doz. . . 6 0-12 o
Begonias, per doz. . . 12 0-18 o
Bouwardias, doz. . . 12 0-18 o
Bouwardias, doz. . . 12 0-18 o
Bouwardias, doz. . . 12 0-18 o
Cimerarias, per doz. 8 0-10 o
Dracema term, doz. 1 o 0-10 o
Erica, various, doz. 9 0-10 o
Evergeens, in var.,
per dozen 0 0-18 o
Tulips, per dozen 20 o 11 o
Evergeens, in var.,
per dozen 0 0-18 o
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- Flowers continue to arrive from France in large quantities, prices of which vary so much that it is hardly possible to quote figures.

SEEDS.

LONDON: Feb. 20.—No fresh feature presented itself on the seed market to-day. Red Clover seed shows no quotable change. Of foreign seed the available supplies in London are unusually small. White Clover is reported in London are unusually small. White Clover is reported from Hamburg as exceedingly firm. Somewhat easier rates are accepted for Alsike and Trefoil. Extremely low prices are asked for imported Italian Rye-grass. Spring Tares realise former currencies. Haricot Beass continue very reasonable. The trade for blue boiling Peas is slow. John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.

CORN.

CORN.

On Monday at Mark Lane a moderate business was concluded in English and foreign Wheat at steady rates, as compared with Monday se'nnight. Flour was quiet, with liberal arrivals. Earley was fully steady, grinding sorts being il aoything the turn against the buyers. In Deans and Peas a fair trade was done at previous rates. Oats ruled firm, and generally 3d. dearer. Maize was not quotably altered in value.—Wednesday's Wheat trade was quiet, but steady rates were current. Flour was quiet and unaltered; Harley steady in value, with a moderate inquiry. Beans and Peas sold at Monday's rates, and Oats further advanced 3d., the common qualities of Russian being more especially im. Maize was slow at previous rates.—Average prices of corn for the week ending February 16:—Wheat, 37i. 3d.; Barley, 31; 11d.; Oats, 19i. 10d. For the corresponding period last year:—Wheat, 411; Barley, 33s. 1d.; Oats, 211, 9d. 215, 9d.

CATTLE.

CATTLE.

At the Metropolitan Market on Monday the supplies of stock were much about the same as on Monday se'noight. Danish cattle sold at 4s. 6d. to 5s. 2ar., Swedish, 3s. 8d. to 4s. The sheep trade was not quotably altered from that of the previous Thursday, except, perhaps, the sale was not quite so dragging. Calves sold without change in value. Quotations:—Beasts, 3s. 8d. to 5s. 4d., and 5s. 6d., to 5s. 10d.; calves, 5s. to 6s. 10d.—Thursday's trade was quite and featureless. Supplies were short, but were sufficient for the very small demand, and values of both beasts and sheep remained about the same as on Monday.

POTATOS.

The Borough and Spitalfields Markets reports state that good supplies have been on offer, but trade dull at the following quotations:—Magnum Bonums, 70. to 90.; Regents, 60. to 80.; Champions, 90. to 70.; Victorias, 70. to 80. per ton.—The imports into London last week consisted of 128 bags from Boulogne, 111 bartels 86 boxes from Bermuda, 100 sacks Bordeaux, 200 sacks St. Nazaire, and 105 tons from Brest.

COALS.

The following are the prices current at market during the week:—Walls End—Hettoo, 15s. 6d.; Hetton Lyons, 15s.; Lambton, 16s.; Wear, 15s.; East Hardepool, 15s. 9d.; Thoroley, 15s. 9d.; Tees, 16s. 6d.

Government Stock .- Consols closed on Monday at 101g to 101g for delivery, and 101g to 101g for the account. Tuesday's prices were, for delivery, 102g to 101g, and 101g to 101g for the account. The final quotations of Wednesday and Thursday were 101g to 101g for delivery, and 101g to 101g for the account.

BURMESE ORCHIDS.

HEATH AND SON beg to announce the arrival of a magnificent lot of the above, per s.s. Martaban, consisting of SACCOLABIUM GUTTATUM, S. BLUMEI MAJUS, many of the flower-spikes 18 inches long, with 150 to 200 flower-seats—foliage 2 inches in diameter, in masses of four to twelve growths; S. CURVIFOLIUM, masses up to thirty growths; DENDROBIUM FORMOSUM GIGANTEUM, from the same district as the magnificent varieties flowered by us, and for which we were awarded a Silver Medal, October, 1882; D. JAMESIANUM, splendid pieces, with 2-feet growths, and set with flower-buds; D. FYTCHIANUM.

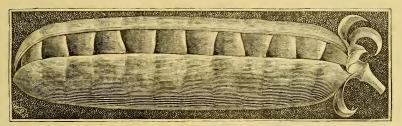
The whole will be Arranged and on View on Monday next, 25th inst.

HEATH & SON, ROYAL EXOTIC NURSERIES, CHELTENHAM.

THE EARLIEST LARGE WRINKLED MARROW

SHARPE'S EARLY PARAGON.

WRINKLED MARROW ALED PACKETS.
6d, % Pint 1s, 6d. e
Post-free. THE EARLIEST LARGE Pint 2s.



LARGE WRINKLED MARROW. Pint 2s. 6d., % Pint 1s. 6d. each Post-free.

IMMENSE VERY HARDY, AND MAY BE SOWN EARLY. SOLD BY ALL NURSERYMEN AND SEEDSMEN.

Trade Price on application.

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I VIES.—IVIES.—A quantity of fine strong plants, 2 to 5 feet. Also AS JERS, PHLOX, PYRETH-RUNS. DELPHINIUMS-strong chungs, now being moved. THE EXOTIC NURSERY CO., Lower Tooting, S.W.

DWARF ROSES, on Manetti, 24s. per 100,

MANETTI STOCKS, fine, ags. per 1000.

ASPARAGUS, 37s. Connover's Colossal, 35s. per 1000 ;

a-yr, Glatt, tos. per 1001; 2yr, Glant, 12s. 6s. per 1000

R. LOCKE, Royal Nurseries, Red Hill, Surrey.

CABBAGE PLANTS, 1,000,000 of Early Rainham and Enfield Market, 22 6d, per rooo of 12c.0. Red Dutch for Pickling, 52, per 1000; all from the very best stock. 3-yr. Connover's Colossal ASPARAGUS ROOTS, fore, in 84, per 1001 a-yr. do,, fme, 155, per 1000. Best Sovering RHUBARB ROOTS, Earliest in Cultivation, for Planting-out, 22, per dozen. PENNYROYAL and RUE ROOTS, 52, per roo. Spacial ONION SEE DYTATUS, £3 20. per toan. White Spacial ONION SEED 12. dd. per pound. All new and genuine. Terms cash.

genume. Terms cash. RICHD. WALKER, Market Gardens, Biggleswade, Beds.

CARNATIONS, PICOTEES and PINKS.

—We offer the above strong plants of the best varieties, our selection. Carriage and package free for cash with order. CARNATIONS and PICOTEES, 125. 6d. to acc. per dozen. Pairs PINKS, 5z. 109, p. per dozen; Pairs PINKS, 5z. 109, p. per dozen; Pairs true Old Crimon CLOVES, 4z. per dozen plants; white CLOVES, 4z. per dozen. plants; also Double PIRETHRUMS, good plants to name, 45. per dozen. ISAAC BRUNNING AND CO., Great Yarmouth Nurseries.

POTATOS. — Clearance surplus White Elephaut, Ashleaf, Sandringham Kidaey, Schoolmaster, Early Rose, St. Patrick, Mexican. FREEMAN AND FREEMAN, Norwich.

ILIUM NEILGHERENSE.—This lovely

SPECIAL OFFER TO CLEAR GROUND.

SUPERIOR TREES AND SHRUBS.

ABIES DOUGLASII, Transplanted, 1 to 2 feet, 1503, per 1003, 320 ta 15 feet, apo, per 1003, 320, per 1003, 320, per 1003, 320 to 6 feet, 1003, 1510 of feet, 1003, 1510 of feet, 1003, per 1003, 4 to 5 feet, 1003, 1510 of feet, 1003, per 1003, ALDER, 6 to 7 feet, 100 per 1003, per 1003, AUCUBA JAPONICA, BIBN, 2 to 2½ feet, 1303, 12½ feet, 300, 13 to 4 feet, 300, 13 to 5 feet, 1003, per 1003, per 1003, 10 SUPERIOR TREES AND SHRUBS.

CUPRESSUL LAWSUNIANA, 8 to 10 leet, 947; 10 to 12 feet, 948; 10 feet

feet, 100s. per 100.
PINE, Mountain, excellent covert plant, 6 to 12 inches, 40s.

per 1000.
OAK, English, 3 to 4 feet, 90s.; 4 to 5 feet, 130s, per 1000.
MAPLE, English, 2 to 3 feet, 5s.; 3 to 4 feet, 8s.; 4 to 5 feet, POPLAR, Lombardy, 4 to 5 feet, 60s.; 5 to 6 feet, 90s.

PRIVET, Evergreeo, extra strong, 3 to 4 feet, 40s.; 4 to 5 feet, SPRUCE, Norway, Transplanted, 10s. 6d,; 11/2 to 2 feet, 35s.

SPRUCE, Norway, Transplanted, 107. 6d.; 1½ to 2 feet, 33s. person.

PINE. Weymouth, 7 to 8 feet, 48s.; 8 to 10 feet, 6os. p. dozen. ROSES, splendid dwarf trees, finest kinds, our selection, from 6s, per dozen, 4os. per 100, and upwards.

FRUIT TREES, splendid.

Offered at the above low prices as long as stock is unsold, 30,000,000 Seedling Forest and Covert TREES for Nursery Finating, also at special prices. Descriptive CATALOGUE on applications.

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"NEWTON" NURSERIES, CHESTER.

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COCOA-NUT FIBRE REFUSE.

4d. per bushel; 100 for 25.; truck (floose, about 2 tons),

LIGHT BROWN FIBROUS PEAT, 5s. 6d. per sack;

SSACK, 25; SSACK, 4d. each, 5s. 6d. per sack;

BLACK FIBROUS PEAT, 5s. per sack, 5 sacks 22z.; sacks,

4d. each.

BLACK FIRRUSS FRAY, 55 per sack, 5 sacks 22r, sacks 2COAKSE SLIVER SAND, 12 of per bublel; 155, per half ton, 26r, per ton; in 2 bublel bags, 4d each, YELLOW FIBROUS LOAM, PEAF-MOULD, and LEAF-SPHAGNUM MOSS, 8r. 6d, per sack MANNAM MOSS, 8r. 6d, per sack per sack per sack per sack, per sack pe

Druty Lane (lately called 174, Coal Varel), W.C.

MEREDITH'S VINE and GENERAL
Manufactured and used by Joseph Merceith, when at the
Vineyard, Garston, of Massive Silver Con, gir Sylver
tion held at Hamburg. The Massive Silver Con, gir Sylver
Most Grancious Majesty Queen Victoria, for the best Specimes
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Gold Medals, both on the Continent and in the United Kingdom.
The above aucresses largely attributable to the use of this inPrice—Canisters, 11.; Sealed Bags, 28, 34, 6d., 6n. 6d.,
or. 6d. and 187, 6d. Sole Algent—JAMES MEREDITH,
Seedsman, 126, Bridge Street, Warrington.

BLACK PEAT for Rhododendrons and American plants for outdoor planting, by the truck-load of 4, 6, or 8 tons, 13s. per ton. LIGHT FIBROUS PEAT for Opting Fens, Azaleas, and all indoor plants, £6 or. per truck of 5 cartio

JAS. HOLDER AND SON, Crown Nursery, Reading.

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PEAT, LOAM, SILVER SAND,
PREPARED COMPOST. RAFFIA FIBRE,
TOBACCO CLOTH, &c.
Quality the Best in the Market.
(All Sacks included.)
PEAT, best brown fibrous. **a. 6d.*, per sack; 5 sacks for 20s.
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**OAM, sackled Orchaid. **a. 6d.*, per sack; 5 sacks for 12s.
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**OAM, per sack for 12s.
**OAM, sackled Orchaid. **a. 6d.*, per black] for 12s.
**AFF, FABER, for sat imported... **a. 6d.*, per black] for 12s.
**AFF, FABER, for sat imported... **a. 6d.*, per black] for 12s.
**PAPER, finest imported speciality & 4d.*, per black] for per sack.
**COCOA-NUT FIBRE REFUSE (see special advertisement).
**Terms, strictly Cash with order.
CHUBB. ROUND. CO.
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CHUBB, ROUND & CO., WEST FERRY ROAD, MILLWALL, LONDON, E.

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PEAT, LOAM, SILVER SAND, COCOA-NUT PIBRE REFUSE, TOBACCO CLOTH, PAPER and ROPE, &c.

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Superior quality, at exceptionally low prices.
PEAT, best Black Fibrous, from 4s, 6d. per sack.
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PEAT, specially selected for Orchids, from 6s, per sack.
LOAM, Yellow Fibrous, 1s, per bushel.
PEAT how Dub, best, 1s, per bushel.
PEAT NOULD, best, 1s, per bushel.
RAFFIA FIBRE, best, 9d, per pound.
TGBACCO PAPER, CLOTH, and ROPE, from 6d, per pound.
TGBACCO PAPER, CLOTH, and ROPE, from 6d, per pound.
COCOANUT FIBRE REFUSE, 1s, 6d, per bag; per truckSPHAGNUM MOSS, 4s, 6d, per bag.
VIRGIN CORK, 18s, per cwt.
The Trade supplied on Wholesale terms.
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For Beautiful Flowers and Fruits USE CHUBB, ROUND AND CO.'S PATENT

COCOA-NUT FIBRE REFUSE By CHUBB'S PATENT PROCESS,

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GUARANTEED BASOLUTELY PURE. FREE PROM ANY
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DESTROYS ALL SLUGS AND INSECTS. An elegant Bordering to Flower Beds. Combines warmth and cleanliness with valuable antiseptic and deodorising properties.

properties.

MOISTERN IN HEAT. HOLDS HEAT IN COLO WEATHER.

Terms, strictly cash with order. Prices as follows:—Sacks,
1c. 6d. each; 10 sacks, 13t.; 15 sacks, 18t.; 10 sacks, 20t.;
10 sacks, 3ct.; 11 sacks, 13t. 15 sacks, 18t.; 10 sacks, 20t.;
10 sacks, 3ct.; 11 sacks, 18t.; 10 sacks, 20t.;
10 sacks, 3ct.; 11 sacks, 18t.; 10 sacks, 18t.; 10 sacks, 3ct.;
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10 sacks, 3ct.;
11 sacks, 3ct.;
12 sacks, 3ct.;
12 sacks, 3ct.;
13 sacks, 3ct.;
14 sacks, 3ct.;
15 sacks, 3ct.;
16 sacks,

Manufactures, CHUBB, ROUND & CO.

Fibre Works, West Ferry Road, Milwall, London, E.

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**Covenfords, by Galankiek, V.B., yaby 25, 1883.—Mr. Smith:
Dear Sir. we have now tried your Insecticace on all the
Insects we can find on any of nor Plauts, including Orchids, and
all, while it neither sains of mid in stand destruction to them
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OCOA-NUT FIBRE REFUSE, newly made, as supplied to the Royal Hortscults ral Society and principal Nursesymen in Ngland, in sacks at 17, ag. each, or 13 sacks, 157, 30 sacks, 64, 57, sacks included. Truck-load, Prote-office order in chemic with all orders will oblige. Established 1872—1. STEVENS And CO., "Crephound "Yard, and 153, High Street, Battersea, S.W.

ORCHID PEAT, specially selected and prepared, as supplied to the leading Trade and private growers. Good sound Peat for Heaths, Frns, Greenburgheauth, &c., supplied in any quantity from Truckloads to a few Bushels. Price List free.

GATERELL AND SON, Bisterue, Ringwood.

THE HORTICULTURAL SUPPLY
ASSOCIATION is the cheapert and best House in the
Trade for really good LIGHT FIBROUS PEAT. Having
purchased root ons of the very best quality, the Association is
prepared to make special offers to the Trace, for quantities by
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sample bags, at 6d, per bag. Yery best, selected fir Orchids,
the Yard or Ton in truck-lards. Terms in application. In
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Alon Learn House, the Company of the Company
PEAT, at, per bag; five lags for viz. 6d.
Also the best and cheapest huse for LOAM, SAND (coarse
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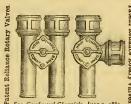
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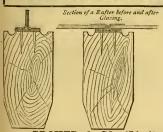
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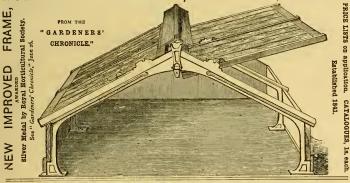
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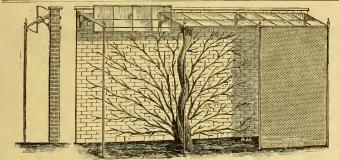
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WANTED, a SUB-MANAGER for a large Nursery and Seed Establishment—a gentleman from 31 to 35 years of age, and who has held a similar position, having had condierable experience in the management and routine of the nursery and seed histiness. Must possets a condition of the property and seed histiness, and possets a Applications must be accompanied with testimosials as to character and ability, which will require the strictest investigation. Address in the first instance to A. B., Gardent-Chronitele Office, 41, Wellington Street, Covent Garden, W.C.

WANTED, a HEAD GARDENER.—Must V perfectly understand his business in all its branches. The most satisfactory evidence required as to efficiency and moral engagements, and, if married steep that family, to JUHN CORBETT, M.P., Impney, Droitwich (mark "Gardens" on cover of envelope).

WANTED, a GARDENER, to live in the Lodge of a Convalescent Home for Persons recovering from Scarlet Fever. Must understand Kitchen Garden and Shrubberies. No children.—Apply, by letter only, to M. W., 54, Stanley Gardens, Beliste, London, N. W.

WANTED, an experienced GARDENER, to take charge of Greenhouse and Outdoor Gardening, at the Preston Pleasure Gardenia, and to live on the Premises. Must be able to Grow and Force Fruit for the Market.—Application, strain age, qualification, and salary required, to be ended to the control of the Control of

WANTED, a GARDENER and WIFE. W No kilden. Man must understand Stove and Green-house, Kitchen and Flower Garden, and Management of Cow. Under Gardener kept. Wife must be thorough Laundress, Cottage in grounds,—Apply, by letter, R. F., 77, St. John Street, E.C.

WANTED, a JOURNEYMAN GAR-DENER, by a Gentleman in Perth,—Must be active and steady, and willing to make himself generally usely Weekly wages £1.—Apply, by letter, stating age and enclosing copies of references, to Q. Z. Gardeners' Chronicle Office, 41. Wellington Street, Strand, W.C.

WANTED, a SINGLE-HANDED GAR-DENER, with help—Must be a thorough practical man, having knowledge of Orchids, Ferns, Stove and Green-house Plants, Vines, also Flower and Kitchen Gardening. To live in Lodge House. Vegetables and milk found. Good references required.—Apply, stating wages, B. HURST, Butbage Nurseries, Hinckley

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WANTED, an experienced FOREMAN, under the Head Gardener, about 25 to 30 years of age, married, with not more than one or two children. He would have the care of Vineries, Conservatory, Plant Stove, and Melon houses and frames. Wages, 182. per week with good house and garden.—Apply, with full particulars, to CRANSTON S UKSERV AND SEED CO., Limited, King's Acre, Hereford.

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Address as above, stating references and wages required, to the
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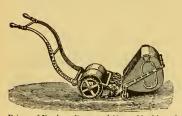
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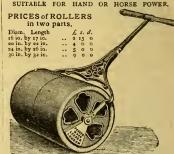


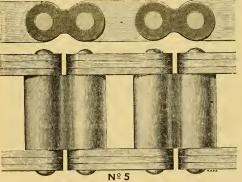


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GARDENERS' CHRONICLE.

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NOTICE to SUBSCRIBERS and OTHERS. Post-office Orders and Postal Orders should now be made payable at DRURY LANE.

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ROYAL BOTANIC SOCIETY GARDENS,

REMINITIONS of SPRING FLOWERS, WEDNES-DAYS, March 26, April 21.

EXHIBITIONS of SUMMER FLOWERS, PLANTS, EXHIBITIONS of SUMMER FLOWERS, PLANTS, And FRUIT, WEDNESDAY, July 22, June 18. Evening Feter, WEDNESDAY, July 22.

Schedules of Praces and Tickets are now ready.

COUNTIES AND TROCKS are now touch.

TOYAL BOTANICAL and HORTICULTURAL SOCIETY of MANCHESTER and the
NORTHERN COUNTIES.

The FIRST EXHIBITION of the SEASON will be held in the Town Hall, Manchester, on TURSDAY and WEDNESDAY, March 18 and 19.

BRUCE FINDLAY. Royal Botaoic Gardens, Manchester.

IVERPOOL HORTICULTURAL
ASSOCIATIONS.
ENHIBITION of HYACINTHS, TULIPS, AZALEAS,
&c., will be held in St. George's Hall on MARCH 19. ENTRIES CLOSE, March 14. Schodules from Scenetary,
Alto GRAND SUMMAR EXHIBITION will be held in
Schoed Park on AUGUST 2 and 4, NEXT.
Schedules in the Press, and will be ready shortly.

JOSEPH GORE, 34. Ullet Road, Liverpool.

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ne undersigned, BRUCE FINDLAY,
Royal Botanic Gardens, Manchester,

INTERNATIONAL FORESTRY
EXHIBITION Edinburgh, 1884.
Under the Patronage of Him Majasty Thre Queen.
The Exhibition will open on JULY is NEXT, and will remain open with the embrace everything connected with or to the exhibited embrace everything connected with order to the exhibition of the world. Free space for Workness' Models and Loan Collections. Medals, Money Prizes, and Diplomas will be awarded. For full particulars as to classes, space, &c., apply to CEORGE CADELL, Secretary.

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The above are strong crowns, rooted similar to Asparagus,
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AND F. SHARPE are offering their fine selected Stocks of all the best kinds of SEED POTATOS at very low prices, which may be had on application. Seed Growing Establishment, Wisbech.

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2 to 3, or 3 to 4 feet; 1950 do., 5 to 6 feet; 250 AUSTRIAN do.,
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Must all be healthy, clean-grown stuff, and recently transplated. Special offers for cash to
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A SPARAGUS for Forcing.—Strong crowns,
A which will produce a quantity of capital heads, 22. per
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A SPARAGUS.—Strong 2 and 3-yr. Connover's Colossal, 21, and 21, 6d. per 100, 155, and 20, per 100. Extra strong 3-yr. Glant, 31-6, per 100; 18t. per 100. Bags included Special quotations to the Trade. E. QUINCEY, Eurhey, Spalding.

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67 and 68, Cheapside, E.C., on TUESDAY NEXT, March 4,
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SEEDS, including Cupresses, Picase, Pious, Yuccas, Thuiss
of sorts, and many others.
On view morning of Sale, and Catalogues had,

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Rooms, 67 and 68, Chapside, E.C., on WEDNESDAY NEXT,
at half-past 12 o'Clock precisely, 800 Standard and Dwarf,
at half-past 12 o'Clock precisely, 800 Standard and Dwarf,
and the Company of the Company of the Company of the Company
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On view morning of Sale. Catalogues had at the Rooms, or at the Auctioneers' Estate Offices, 8, New Broad Street, E.C.

Thursday Rext.—Sunbury, Middlesex.
Only 16 miles from London.

By Order ALT 10 FIG. The Thomas of the Middlesex.
Only 16 miles from London.

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BUILDERS, and OTHERS.

MESSRS. PROTHEROE AND MORRIS

Norms, 67 and 68, Cheapade, E.C., on THURSDAY, March 6, at ro 'Clock precisely (unless an acceptable offer be made in the mennime).

In the Committee of the Commit

MESSRS. PROTHEROE AND MORRIS
Tooting, S.W., Clearance Sale.

MESSRS. PROTHEROE AND MORRIS
Tooing Common, S.W., about en minutes' walk from Tooting
of Mrs. Doughas Alston (who is leaving the residence, the lease
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see GARDEN FRAMES, two MOWING MACHINES,
Eombay Rosewords, two MOWING MACHINES,
Eombay Rosewords and Camellia and Carlo
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Auctioneers and Estate Agents, of and 68, Cheapside, and
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DENDROSIUM BRYMERIANUM, D. INFUNDIBULUM.
MESSRS. PROTHEROE AND MORRIS
will SELL be AUCTED. MESSRS. PROTHEROE AND MORRIS
will SELL by AUCITON, at their central Sale Rooms,
67 and 68, Cheapside, E.C., on FRIDAY, March 7, at half-past
20 o'Clock precisely, by arder of Measrs. Hugh Low & Co., a
vary large quantity of choice Burmese and other ORCHIDS in
the heat possible condition, comprising Dendrobium Rymerianum, true D. Wardianum, D. crassitude, D. eburneum, D.
Odontoglossum Alexandra, specially selected specimens; O.
luteo-purpureum varieties, Yaoda corrulea, Cypripediums, including non from Boroce, with leaves marbled on upper surface,
and entirely red-purple on the under; a plant in flower of
Phalenopsis Sanderianum, and other choice ORCHIDS:
at the Auctioneers' Estate Offices, 8, New Broad Street, E.C.

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Foots Gray, Kenk,

By Order of the Executive of the late Mr. R. Sim.

CLEARANCE SALE.

MESSRS. PROTHEROE AND MORRIS

Sidcup Hill Nursery, Foots Cray, 1 mile from Sidcup Station, on TUESDAY, March 11, M. 12 o'Clock precisely, a further pertine of the RESE 11, 12 or Clock precisely, a further pertine of the RESE 12, 12 or Clock precisely, a further pertine of the RESE 12, 12 or Clock precisely, a further pertine of the RESE 12, 12 or Clock precisely, a further pertine of the RESE 12, 12 or Foreign Late 12, 12 or Clock precisely, a further pertine of the RESE 12, 12 or Foreign Late 13, 12 or Clock precisely, a further pertine of the RESE 12, 12 or Foreign Late 13, 12 or Clock precisely, and the RESE 12 or Clock precisely, 12 or Foreign Late 13, 12 or Clock precisely, 12 or Clock precisely, 13 or Afet 13, 12 or Clock precisely 13, 12 or Clock precisely 14, 12 or Clock precisely 15, 12

Cambridge Heath, London, E. CLEARANCE SALE. Important to Horticultural Builders, Nurserymeo, Florists,

Important to Horticultural Builders, Nurserymeo, Florists, and Others.

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are instructed by Messrs. Alfred Carter & Co. (in consequence of the expiration of the Lease of this portion of their premises) to SELL by AUCTION, at the Store Yard at the back of their premises in Martha Street, Cambridge Heath, E., on THURSDAY, March 13, at 2 n Clock pecialey, the usual STOCK of a TIMBER NIERCHANT, including an assortment of Planks, Deals, Battens, Floor Boards, Match Lining, Mendlings, the Breculot 10 Sale. Catalogues may be had on the Premises, or of the Auctioneers and Valuers, 67 and 68, Cbeapside, and 8, New Broad Street, E.C.

GREAT UNRESERVED SALE under the will of the late Mr. Class. Lee.

M. ESSRS. PROTHEROE AND MORRIS are instructed to SELL to the control of the late of

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Liquidation.

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Wednesday Next.—(Sale No. 6608.)

Wednesday Next.—(Sale No. 6608.)

M. R. J. C. STEVENS will ESELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, March 5, at half-past 20 Clock precisely, First-class ROSES, FRUTT TREES, CONYERS, FLOWERING TREES and SHRUBS, 50 FICUS ELASTICA, CARNATIONS, OLLDOWN, LILLIUMS, and other BULBS, RUSTIC GARDEN WORK, 65. On view morning of Sale, and Catalogues had.

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SALE by AUCTION, at his Great Rooms, 38, King,
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March 6, a good Plant of the above.
On view morting of Sale, and Catalogues had.

Un view moruing of Sale, and Catalogues had.

Thursday Next.—(Sale No. 6609.)

ON CIDIUM TIGRINUM, true.

ON CIDIUM TIGRINUM, true.

LOWER SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., by order of Mr. F. Sander, on THURSMAN NEXT, March 6, at hellpest is a Clock precisely, a mass superh important and state of the Coventy of the genus. Also an extra face lot of the rare MORMODES LUXATUM EBURNEUM; the great ivory-white flowers of this species are borne on unright stems in a large cluster. Together with a fine lot of ODONTOCLOSSUM MACULAR TUM to Varieties, VANDA SANDERIANA, DENDROES, several ONCIDIUM species, and other VALUABLE ORCHIDS.

On view morning of Sale, and Catalogues had.

Of view moning of son, and consenges of the property of the pr

Labila anceps.

MR. J. C. STEVENS will SELL by
AUCTION, at his Great Rooms, 38, King Street,
Covent Garden, W.C., by order of Mr. F. Sander, on THURSDAY, March 20, at half-past 12 of Clock precisely, grand
masses of a new white type of LæLIA ANCEPS of great
beauty; the handstome flowers measure, in the dired state,
4/4 inches across, by a yellow, striped dark chocolate, and on
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M.R. J. C. STEVENS has received instructions from the Executors to ofter for SALE by AUCTION, EARLY in APRIL, the valuable BOTANICAL
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formed by the late Robert Hanbury, Esq.
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valuable COLLECTION of ORCHIDS and other PLANTS
formed by the late Robert Hanburg Handle PLANTS
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on WEDNESDAY, March 5, at a o'Clock precisely, by
M. F. W. ABRAHAM, HORTICULTURAL
AUCTIONERS and VALUER, 17, Tanfield Road South,
Coydoo, and Woking, Surrey.

Young's Auction Rooms, North End, Croydon.
IMPORTANT UNRESERVED SALE of NURSERY
STOCK, on SATURDAY, March 8, at 2 o'Clock
precisely, by
M.R. F. W. ABRAHAM, AUCTIONEER, &C.,
direct from the Nurseries.
Catalogues of Mr. Yo

TO BE LET, from March 25, the CARLTON ROAD NUKSERY (about three acres), with Cottage and Seed Stop.
Apply to Mr. CAWKELL, Ivy Cottage, Oldcotes, Worksop.

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and FORRIGN SNEET and PLATE GLASS, WNITE
LEAD, MILLED LEAD, OILS, and COLOUR MERCHANTS,
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PHODODENDRON NOBLEANUM, nice The bushy plants, 9 to 22 inches, 122, per dozen; other choice named sorts, about 2 feet, bushly, 22, 6d. each; FONTICUM, in all the leading varieties, at low prices. LAUREL, common, 1½ to 2 feet, 181, 21 to 3 feet, 125, 6d. per 100; CAUCAS, SICUM, 1½ to 2 feet, 185; ; 2 to 2½ feet, 200, per 100; ROTUNDIFOLIA, 1½ to 2 feet, 185; ; 2 to 2½ feet, 200, per 100; ROTUNDIFOLIA, 1½ to 2 feet, 185; i 20 to 2½ feet, 200, per 100. ROSES, in posts my selection, 32 per dozen, 15. j. M. ARROTT, Highfield Nurseries Matlock.

Special Offer-Cheap Pelargoniums, &c.

WILLIAM BADMAN offers as below, all
strong, healthy, and well-rooted:—
TRICOLOR — Mrs. Pollock, from single pots, 2z. 6d. per
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Sir R. Napier, Lady Cullum, 3z. per doz., 2oz. per 102.
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Smith's Improved Long Frame, 12. per packet; Smith's Masterpiece, 12 per packet. Cabbage: Smith's Alpha, 12 per packet; Smith's Incomparable, 8d. per onnee. Lettuce: Smith's Champion Cabbage, 12. per counce; Smith's Hardy White Cos, 12. 6d. per onnee. Peal: Smith's Improved Windows, 120 per quart. Broad Bean: Smith's Improved Windows, 120 per quart. Broad Bean: Smith's Improved Windows, 120 per quart. Broad Bean: Smith's Improved Windows, 120 per quart. Broad lean: Smith's Permier Early White, 12. per packet. Califower: Smith's Early Perfection, 12. 6d. per packet. Descriptions of the slower and it best vegetables in Hiterateablist, free.

RICHARD SMITH And Co., Worcester.

TO REST TO TREES.

The following being on land let for building purposes, and must be cleared by March next, will be given at the following prices. All are offered so long as susoid:

100,000 transplanted LARCH, stout and clean, 2 to 3 feet, 105, per 1050, 300,000 2-yr. Seedling SCOTCH FIR, Native, 15. 6d.

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per 1000.
100,000 byr. Seeding, 2-yr. transplanted, SCOTCH FIR,
Native, 4r. per 1000.
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100,000 byr. Seeding, 3-yr. transplanted, White AMERICAN
SPRUCE, 15t, per 1000.
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192. per 1000.
1000,000 byr. Seeding, 2-yr. transplanted, PINUS MON2,000 PINUS MONTANA, 12 to 18 inches, 12r. per 1000.
2,000 PINUS MONTANA, 12 to 18 inches, 12r. per 1000.
3,000 PINUS MONTANA, 15 to 24 inches, 12r. per 100.
3,000 PINUS CEMBRA, 18 to 24 inches, 12r. per 100.
3,000 PINUS MONTANA, 12 to 18 inches, 12r. per 100.
3,000 PINUS MONTANA, 12 to 18 inches, 12r. per 100.
3,000 PINUS MONTANA, 12 to 18 inches, 12r. per 100.
3,000 ABIES MENGESTI, 18 to 3 feet, 15t. per 100.
5,000 ABIES MENGESTI, 18 to 3 feet, 15t. per 100.
100,000 PICAS NEEDER NAMANA, 13 hours, 12r. per 100.
100,000 PICAS NEEDER NAMANA, 13 hours, 12r. per 100.
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MORRISON BROTHERS, Aberdeem.

CHOICE FLOWER SEEDS.— Aster,
Victoria, 1s. per packet; Balsam, Smith's superb (finest
double), 1s. 6d. per packet; Begonia, Tuberous-rosed Hybrids
from Gold Medal Collection, 1s. and 2s. 6d. per packet; Calceopacket; Carnation, extra choice, from a noted collection, 2s. 6d.
per packet; Cimerain, Smith's extra choice mixed, 1s. 6d.
per packet; Cimerain, Smith's extra choice mixed, 1s. 6d.
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POTATOS.—Myatt's Early Prolific Kidney.
Very good sample. Price and full particulars, per ton or
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Asparagus.—Asparagus.

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Ourplus Stock of the above, beg to offer ten thousand, 1. yr. old, for £5, cash; also 3 and 4-yr. old. Samples and price on application.

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POSES.—Standards, 2½ to 4 feet; ditto 1½ to 2, feet. Fine healthy plants, and embracing the best varieties in cultivation of Hybrid Perpetuals, &c.

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First-class Certificate was awarded at Kensington. A beautiful rose-coloured Self, very highly scented, of great size, very full, and of perfect shape; does not burst the cast x, a very free bloomer and vigorous grower, and perfectly hardy. See Gardnerf Chronicf, August 4, 1883, page 146. Frice 44, 52, and 65, a pair. (As the with order.

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TWELVE CARNATIONS and PICOTEES,

named sorts, 6r. Strong plants in 4-inch pots, grown in open property of the p

LILIUM AURATUM.—Good, plump, sound
Bulbs, 42, 62, 92, 122, 182, and 242, per dozen; extra
strong, your and 422, per dozen. All other good LILIES at
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Mr. WILLIAM BULLIS Extablishment for New and Rare
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DWARF - TRAINED FRUIT TREES, INES, APPLES, PLUMS, CHERRIES; also very fine Pyramid and Sanadard FEARS, strong, for Orchards. Chichester ELMS and POPLARS, 9 to 15 feet, Dwarf ROSES, Gloide de Dijon on Brier, has Estadard and Dwarf ROSES for great variety.

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SURPLUS STOCK CHEAP. - QUICK. SURFLUS STOCK CHEAP. — OUTCN, 3yr, 8r, 10r, 10rd (1) ditto, 3yr, 8r, 10r, 10rd (1) ditto, 13r, 10rd (1) ditto, 13rd (1) ditt

JOHN SHARPE is now offering to the Trade the undernamed sorts, of the firest character, his owo growing:—Abbey Yellow, Berkshire Prize, Normanton Yellow, Golden Globe, Orange Globe, Golden Takard, Long Red Mammoth. CATALOGUES on application.

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Asparagus for Planting.

BIDE, making Asparagus growing quite a speciality, cao this session offer some very fine Plants, 1-yr. and 2-yr., from drills, also extra good stuff, transplanted, 2-yr. and 3-yr., which, wherever planted, cannot fail to give the greatest satisfaction. For samples and price per 100 or 1000, anoly to greatest satisfaction. For apply to S. BIDE, Alma Nursery, Farnham, Surrey.

DWARF ROSES, on Manetti, 24s. per 100, MANETTI STOCKS, for per noceaticut, 245, per 100,
ASPARAGUS, 3-yr. Connover's Colossal, 15t. per 1000;
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Money cannot procure better stuff.
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TO FORESTERS and OTHERS.—We of them 2 to 3 feet high, and the rest 20 to 24 inches high, stort and good. Larger LARCH, 182. per 10-20. Samples sect on application. Also good GEORGE STEPHENSON, Nurseryman, Seedsman, and Florist, Appleby, Westmoreland.

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A magnificent White Wrinkled Marrow; height 2 to 21/2 feet; pods in pairs; long, straight, and well filled. Flavour excellent. As a Second Early Wrinkled Pea, there is nothing to equal much heavier cropper than that variety, and for Market Garden purposes very far superior to it.

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The Finest Second Early White Kidney in Cultivation.

Price 3s. per peck; 10s. per Bushel.

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THURSDAY NEXT.—(Sale No. 6609.)

ONCIDIUM TIGRINUM, true.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., by order of Mr. F. SANDER, on THURSDAY NEXT, March 6, at half-past 12 o'Clock precisely, a most superb importation of ONCIDIUM TIGRINUM, in splendid order and grand masses-this is one of the very finest of the genus. Also an extra fine lot of the rare MORMODES LUXATUM EBURNEUMthe great ivory-white flowers of this species are borne on upright stems in a large cluster; together with a fine lot of ODONTOGLOSSUM MACULATUM, in varieties; VANDA SANDERIANA, DENDROBES, several ONCIDIUM species, and other valuable ORCHIDS.

On view morning of Sale, and Catalogues had.

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FOREST TREES

H OR E S T T R E E S S to be sold cheap, 500,000 LARCH, 2 to 3 feet, 20s. per 1000; 3 to 4 feet, 20s. per 1000; 3 to 4 feet, 20s. per 1000; 3 to 5 feet, 20s. per 1000; 3 to 5 feet, 20s. per 1000; 3 to 6 feet, 20s. per 1000; 5 FUDE, 1 ½ to 3 feet, 20s. per 1000; 5 FUDE, 1 ½ to 4 feet. 20s. per 1000; 5 FUDE, 1 ½ to 4 feet. 20s. per 1000; 5 FUDE, 1 ½ to 4 feet. 20s. per 1000; 5 FUDE, 1 ½ to 4 feet. 20s. per 1000; 5 FUDE, 1 ½ to 4 feet. 20s. per 1000; 5 FUDE, 1 ½ to 4 feet. 20s. per 1000; 5 FUDE, 1 ½ to 4 feet. 20s. per 1000; 5 FUDE, 20s. per 1000;

NEW EARLY RHUBARB, Charles Kershaw's "Paragon."

This is desirable to the first artery of Rhush ever offered; in militarizing the first part of the first profession of the first profession and stalks are produced in such profusion that more than twice the weight can be pulled from this than from any other sort. The colour is a splendid red, flavour excellent, and it has this qualification over all others, in PNSFR SERDS.

PRICE-Per Plant, 1s. 6d.; per Dozen, 15s. Price to the Trade on application.

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THE SLEAD SYKE NURSERIES,
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SPECIAL OFFER TO CLEAR GROUND.

SUPERIOR TREES AND SHRUBS.

ABIES DOUGLASH, Transplanted, 1 to 2 feet, 1301. per 1000, 320. per 1000, 13 to 4 feet, 701. per 100, 320. per 1000, 13 to 4 feet, 701. per 100, 600. per 1000, 14 to 5 feet, 1001. j. 5 to 6 feet, 2001. per 100.

FINER, 6 to 7 feet, 100. per 100.

FINER, 6 to 7 feet, 100. per 100.

FINER, 6 to 17 feet, 100. per 100.

BIRCH, 1 to 17 foot, 201. 13/1 to 2 feet, 1301. j. 3 to 4 feet, 201. j. 4 to 5 feet, 1001. j. 3 to 14 feet, 1001.

CORSICAN FINE, 1/8 to 2 feet, 1301. j. a to 3/4 feet, 1801.

CUPRESSUL LAWSONIAN 6, 10 10 feet, 841. 10 to 12 feet, 861. per 1001.

ELM, Wych, 30 4, feet, 325; 4 to 5 feet, 50x; 5 to 6 feet, 50x; 5 to 6 feet, 50x; 5 to 6 feet, 50x; 5 to 7 feet, 50x; 5 to 6 feet, 50x; 6 to 7 feet, 50x; 6 to 5 feet, 50x; 7 to 6 feet, 50x; 7 feet, 100s. per 100. PINE, Mountain, excellent covert plant, 6 to 12 inches, 40s.

per 1000.
OAK, Eoglish, 3 to 4 feet, 90s.; 4 to 5 feet, 130s; per 1000.
MAPLE, Eoglish, 2 to 3 feet, 5s; 3 to 4 feet, 8s.; 4 to 5 feet,

POPLAR, Lombardy, 4 to 5 leet, 6os.; 5 to 6 feet, 9os. per 1000. PRIVET, Evergreen, extra strong, 3 to 4 feet, 40s.; 4 to 5 feet,

55s. per 1000. SPRUCE, Norway, Transplanted, 10s. 6d.; 1½ to 2 feet, 35s.

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30,000,000 Seedling Forest and Covert TREES for Nursery

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Have splendid Standard and Dwarf Tea, Noisette, Hybrid Perpetual, and other Roses. Also extra strong Dwarf Roses in Pots, suitable for Forcing. Special low prices on application

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OSIAH H. BATH Has the following varieties of SEED POTATOS to offer:-

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And other leading varieties.

Also a large quantity of JERUSALEM ARTICHOKES.

Prices, low, on application.

1 and 3, York Street, Borough Market, S.E.

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Peas, standard vars, 12, 12, 2d, 12, 6d, 22, per qt. Beans, standard varieties, 8d, to 12, 6d, per quar. Cabhage, Carrot, Parsin, Parsley, 6d, per ounce. Cabhage, Carrot, Parsin, Parsley, 6d, per ounce. Lettuce, Leek, Brussels Sprouts, 12, per ounce. Cucumber, Melon, Cauliflower, 12, 8 22, 6d, per pkt. Sedsmen, Forest Hill, S. E.

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Containing a Coloured Plate (natural size) of Eight Leading Market Garden Peas.

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ESTABLISHED OVER 60 YEARS.

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ENORMOUS CROPPER.

60 to 100 Pods on each vine.

Sow Seeds 6 inches apart.

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Primula, white or red, 1s. and 2s. 6d. per packet.
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Golden Queen, 5, 4, 5, 6, 7, 8 to 10 feet, hundreds of beautiful specimes.

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YEWS, Common, 3, 4, 5, 6, to 10 feet, thousands.

Golden, of all sizes up to 10 feet. We have many thousands as Pyramids, Globes, Standards, in point of variety and size unequalled.

CUPRESSUS ERECTA VIRIDIS, 3, 4, 5, 6, to 8 feet, thousands.

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"Lawsoniana lutea, 3, 4, and 5 feet, hundreds of beautiful THUIOPSIS DOLAERSATA, 3, 4, and 5 feet, hundreds. RHODODENDRONS, many thousands, 3, 4, 5, 6, 7, 8, to 10 feet. The plants are covered with buds.

AZALEAS, Hardy, the finest varieties known, 2, 3, 4, and 5 feet. Beath of the plants with buds.

PICEA FINE Chinese, 7, 8, and 10 feet high.

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DOUBLE GLOUCESTER.—This remarkable variety is one of the most productive Potatos ever introduced. It bears an enormous crop of good sized tubers, which are of excellent quality for the table. It is entirely when are of excellent quality for the table. It is entirely free from disease. Its compact habit of growth, and its capability of bearing cutting well for seed (it is advisable that each piece should have at least two eyes), renders it a very economical and profitable variety. It is of excellent flavour and good colour. We feel sure it will become a popular variety for the garden, and, as it is so remarkably productive, that it will also become a Farmer's Favourite.

Price 4s. per peck; 14s, per bushel.

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First-class Certificate of Merit, International Potato Committee, 1982. From Success and Woodstock Kidney. A very fine, second early white Kidney; tubers long, flat, smooth, and handsome, a great cropper and excellent quality. A first-rate garden Potato; very distinct, and a rare acquisition. We hold the entire stock of this valuable variety. It is excellent not only for exhibition but of high-class quality for table use.

Price 1s. per pound; half-peck, 6s.; peck, 10s. 6d.

WHEELER'S GLOUCESTERSHIRE KIDNEY maintains its position as one of the earliest and best Potatos in cultivation.

Price 3s. per peck.

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WHITE CLOVE CARNATION.

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Per Pair, 3s.

The usual Discount to the Trade.

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The largest stock in Europe.

4, 3 and 2 feet, from 21t. to 17, feet, at 51, 32, 64, and 22, 64, and 25, 64, and

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COLLECTION of SHRUBS and TREES for general planting,

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Extra language and TREES of APPLES, PEARS,
THUIA LOBERLES, &c., from 31. 6d. to 14.
THUIA LOBERLES, &c., from 32. 6d. to 14.
THUIA LOBERLES, 10. 4 feet.
RETINOSPORA AUKRA, 6 to 15 inches.
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CAUCASICUM LAURELS, 1 to 24 feet.
TRISKYEW. No. 124 feet.
MOSS ROSES in vars.
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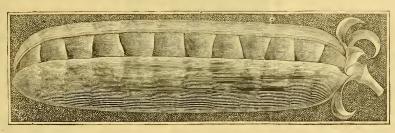
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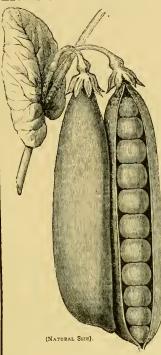
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Gardeners' Thronicle.

SATURDAY, MARCH 1, 1884.

GLASGOW BOTANIC GARDEN.

OTWITHSTANDING the boasted position which "cannie" Scotchmen claim for Glasgow as being the "second city in the empire," both its great commercial sisters in wealth and enterprise, Manchester and Liverpool, if they have not more interesting or better appointed botanical gardens, are far more successful, financially speaking. Man-chester, of course, fifteen years ago was in very deep water until the spirited enterprise of Mr. Bruce Findlay, with a strong will and indomitable perseverance, pulled his company out of the quagmire. By a series of Whitsuntide exhibitions which have become world-famous, the shillings of the multitude in these busy hives of industry in the Lancashire and Yorkshire districts, flowed in to, we have no doubt, a grateful Chancellor of the Exchequer; and now Manchester is reckoned, and no doubt it is, the most successful unsubsidised botanical garden in the kingdom. The garden at Liverpool is taken in hand by the municipality, and consequently wants for nothing in the way of good keeping. Of course all municipalities are apt to be niggardly, because they have to face their tax-paying constituents and give an account of their stewardship, but be that as it may the curator and his staff are certain to be supported in a very different way from a private company that cannot even pay the interest of their debt. The Glasgow garden happens, as will be seen from the last published balance-sheet, to owe the Corpora-tion £40,000, and it is quite obvious that it is only a question of time when it will pass under municipal rule : and the sooner the better, too, every lover of horticulture will say. The £40,000 has been spent to some purpose; for, 1st, the grand Winter Garden, known formerly as the Kibble Conservatory (see pp. 271, 279), has been acquired; and 2d-even more important still-a set of houses 320 feet long, with a short range at either end at right angles, of 105 feet, each varied in width to suit the subjects set down as a sort of permanent tenants, has been built of Teak-wood by Messrs. James Boyd & Sons, and thoroughly equipped in every respect internally for varied plant life (see p. 275); and it is to these houses that I wish to direct your readers' attention.

Beginning at the tail-end of nur subject first, these Teak houses, quite recently finished, do not present externally much of an ornate character. There is nothing at first sight that would indicate an expenditure of £10,000 about them, but when the sightseer gets in and about them his opinions are sure to change. Everything done is so good and substantial, the Caithness pavemented passages, the Welsh slate tables, the piping, ventilation, and general fittings at once indicate that the designer of the range insisted upon generally useful structures, combined with extreme durability. None of the houses are too lofty for their inmates, and but for the great mistake of making the Victoria Lily-house or tank from 6 to 10 feet too small in diameter, which is an unfortunate oversight-better have had no Victoria-house at all-the range would, horticulturally speaking, be as nearly faultless as possible.

In the centre of the range is the Palm-house, 85 feet deep, with a frontage of 55 feet, and 42 feet 6 inches in height. Around the interior are

shelves for smaller Palms, and in the body of the house a couple of beds filled with soil in which the large Palms are planted out. The roof of this house was purposely kept low, as Palms after attaining a certain altitude cannot be well seen unless by the formation of a series of galleries; and by filling up the top of the house with their leaves, they also shade the smaller plants around them, and thereby pre-judice their healthy growth. The height of the house erected here is quite sufficient for exhibiting typical moderately-sized specimens. With efficient heating apparatus one special feature in the construction of the house may be noticed, viz., the introduction of a small heating pipe round the lantern of the roof, This great improvement it has been found stops to a very large extent the drip from the roof, which in houses of old construction seriously damaged the The boiler-house for the whole range is underneath the Palm-house-a most advantageous arrangement-which caused some trouble in construction, as a ventilation drain had to be driven from it under the Ewing range to the bank of the Kelvin. The latter range forms a nucleus for supplying the new range, and for nursing onwards bedding plants and similar plants.

The principal subjects in the Palm-house comprise Borassus flabellilormis, with its beautiful shining green leaves, making a capital fellow to the well known umbrageous Latania borbonica; so also does the round-leaved Livistonia (L. rotundifolia), fronted with great plants of Fourcroya cubensis and argentea. In the nooks and corners are noble plants of the prominent Zamia horrida, and several handsome tufts with woody crowns of various Macrozamias, These, along with towering plants of Seaforthia elegans and Livistonia sinensis, with no end of smaller Palms round the side tables, make an interesting tropical-house. There are two central beds, each 15 feet in width, and the path between grated, to allow the heat to ascend from the stack of pipes underneath, with a solid-looking stone kerb to form the borders. The side tables are of Welsh slate, and in order to husband moisture for atmospheric purposes, a layer of cocoa-fibre rests on the tables, into which the pots of Palms, &c., are plunged.

The house on the east side of this is the succulent-house -possibly, next to Kew, the best appointed house for species and varieties in the kingdom. Most of the plants are in capital health, and Mr. Bullen has them arranged according to groups, which is important for the student and for the general sightseer. In the centre bed are very prominent plants of Agave Salmiana, and many others, among which was the rarer Mexican variety with short, elegant, swordshaped leaves of fine glaucous surface, and quite a host of ornamental Agaves, among which we noted applanata, univittata, Ixtli, ixtlioides (very distinct), attenuata glauca (with broad, concave leaves of the most captivating green), macrantha, Lindeni (very beautiful, from having an irregular prominent silver margin adorned with short stumpy spines). margined with Beaucarneas, Yuccas, Dasylirions, Opuntias, Fourcroyas, and many others of the grosser growing succulents, render this house one of the most important in the range. By the way, not the least prominent of this centre group was a grand specimen of Aloe platylepis, with four highly ornamental Tritoma uvaria-like spikes, towering above its fellows. On the side benches the groups were specifically distinct, first coming Euphorbias, then Opuntias, Fourcroyas, Mesembryanthemums, Echinocactus, of which Leopoldi, with its fierce-looking spines, stood out distinct; and then Phyllocactus in numerous sortsnone, however, at this season more stylish looking than P. anguligera with flowers studded along both edges of leaves like heads, then Crassulas, Sedums, Cn-Myledons, Echeverias, Agaves, Rhipsalis, Beaucarneas, Pilocereus, Echinopsis, Yuccas, Gasterias, Cereus, and among them C. Tweedei is the most ornate, standing up like a column of stone; Haworthias, Mammillarias, and Alnes, of which there is a fine assortment. This in time will prove to be both an interesting and instructive houseful.

On the west side is the economic-house, of similar dimensions in every way. Chief among the lot in the centre is Heritera littoralis, with a stem as straight as a gun-barrel, carrying very large ovate leaves with very prominent venation; then the wild Banyan tree (Ficus indica), the Anchovy Pear, the Cinnamon as well as the Ginger and Chocolate plants; the Indian Fig tree (Ficus eburnea), with handsome obovate leaves and singularly prominent white

venation; the Coffea liberica, much larger and stouter than the common C. arabica; the Clusia grandifolia, with stiff leaves, and as concave as a saucer, and many other medicinal and useful plants, such as Tea, sugar, quinine, Guava, Mango, &c., all in good order, having plenty of space for extending themselves.

Adjoining this is the stove fernery, full of fine fresh foliage. In it were Drynaria morbillosa, Asplenium Gardnerianum, a fine pot Fern, and Asplenium scandens, with lots of Maidenhairs in their many forms; the handsome Nephrolepis davalloides, a grand mass of Microlepis hirta cristata, and some climbing Lygodiums. Suspended from the roof were several tropical Orchids, which always revel in the plethora of moisture arising from such a lot of greenery. Saccolabium giganteum and several Moth Orchids (Phalænopsis) were evidently enjoying life in this climate.

Next to this again is a high-temperatured house, with several specimens of Eucharis, Crinum, the large-leaved Acalypha, the pretty rose-painted Phyllanthus (P. rosea picta), a handsome and useful plant for botanic gardens. The many forms which these exotic plants take on is interesting to observe, and it is chiefly in such gardens as I write about that the public can see such things. Here the Aralia umbraculifera shows up its foliage, crowded in whorls, and the leaves ovate and plain-so different to many of its compeers; and then again the Columbian Maranta sanguinea at once arrests attention from its leaves throwing, as if it were on second consideration, great footstalks 2 of 3 feet long, which are surmounted with tufts of smaller leaves, and all nicely coloured. Crotons in variety, Pandanads, and Dragon's-blood plants give colour and variety to the group.

At right angles to this is an intermediate-house, in which Orchids live among other plants, but are not in quantity such as many people would desire to see. Still, there are many nice Dendrobes, some capital Moth Orchids—the spotted and barred-leaved Schilleriana being in excellent style, and so are several Cattleyas, Roezl's Odontoglot in fine flower and clear and vigorous. Among the grosser growing lot are masses of Eucharis in fine flower, the lasciculated Hæmanthus with its highly ornate spotted stem, some of the newer Crotons, the exceedingly grotesque-looking Philodendron crinipes, with the centre lobe of the leaf saddle-shaped and having two ear-like reniform wings at the base, &c.

The circular house, which forms the extremity of the range in the east, is the Victoria-house, which is fitted up in every way to suit water plants but not to give space for the Victoria leaves which in summer not only extend over the wall of the tank but get on to the path. This along with Nympheas and other water plants fully occupied the spatula-like-formed tank; on the side stages are Orchids, Bromeliads, and some other ornamental plants. It may be stated that, not-withstanding the cramping of the Victoria, it had thirteen flowers expanded last season.

The houses east of the succulent-house are chiefly filled with New Holland plants and Azaleas, of which there is a large and well managed lot. These, with the denser growing Himalayan Rhododendrons, occupy the large house in the east wing in which the visitor generally enters.

At right angles are the cool Orchid-house and the greenhouse fernery. The stock of Orchids is only limited, and it seems a pity that Mr. Bullen, who always has been a keen Orchidophilist, should not have more of them to cultivate. As it is, there are among the Odontoglossums, crispum, Pescatorei, nebulosum, a graad lot of Oncidium varicosum growing and flowering magnificently, suspended in baskets and otherwise in this cool house, in which also were lots of Ladies' Slippers, the finely fringed Dendrobium fimbriatum in mass of bloom, as also Cologyne cristata, and the sweet-scented Trichopilia and many others. Among the Ferns are Pellea ornithopus, the handsome Gymnogramma triangularis and Pteris straminea, Lastrea tenericaulis, with prominent pinnatifid frondae; the singular Goniopteris refracta, with fronds opposite, and leaves entire; Alsophila Williamsii, Balantium Culcita, Nephrolepis umbrosa, &c.

In addition to this range are four span-ronfed houses detached for propagating and other purposes, each about 40 × 12 feet. The whole range is heated by two of Bullen's 8-feet Glasgow boilers, to which are attached about 2 miles of 4-inch piping, and they

seem to do their duty well, and could do more, we understand, if required.

Not to speak of the Ewing range, nor of the most interesting shaded house for filmy Ferns and mosses, we proceed to take some notice of what is known as the Kibble Conservatory (see p. 271), which was also built by the Messrs. Boyd, and by them remodelled about three years ago. As you enter there is a spacious pentagonal corridor, with a span-roofed house at either side, that is, at right angles, of 40 × 22 feet. On the one side is a nice collection of Heaths, with the front stages covered with plants in bloom, such as Primulas, Cinerarias, &c. In the corresponding house are New Holland plants with Epacris in flower, and lots of Acacias; while in addition to the climbers of ordinary cast in the corridor is Lonicera fragrantissima, with gnodlooking ovate leaves set opposite each other on wirylooking stems—a very good plant for a full house. The Kibble proper is circular, with a border of 10 feet wide, then a path 14 feet wide, then a bed 16 feet in width, then a path, and then the centre. The coolness of the climate has given an immense impetus to the growth of the Tree Ferns since they were planted some two or three years ago. Among them are quantities of Cibotium Schiedei, Dicksonia antarctica, some of them with 10 feet stems; the grand distinct Cyathea dealbata, Alsophila prænitens, Moore's Todea barbara, as dark green as a Scotch Leek; Dicksonia Smithii and D. regalis in extra fine cut frondage, the Chinese Cibotium Barometz; these, along with some smaller fry, fill up the centre, which is about 40 feet diameter.

On the border surrounding, warded off by the path, are some grand specimens of Cibotium princeps, with great chaffy rachis and beautifully formed opposite leaves, the pinnate fronds turning up and forming a splendid outline for the eye to rest upon. Then the spiendia outline for the eye to less span-sikkim Rhododendrons towering up, some of them towards the lofty roof, studded with buds in such quantities as will make a display in spring worthy of going a day's journey to see. This is the place for such gigantic species as Nuttallii, Jenkinsii, Dalhousianum, and such leggy fellows as ordinary growers cannot provide accommodation for. Among them are several Acacias, the New Zealand Flax, a noble plant of Astrapæa Wallichii covered with bloom, hosts of Camellias, the Eucalyptus globulus, Araucaria Bidwillii and A. excelsa, together with several Palms of the Kentia race. Unquestionably this is one of the finest promenades, covered with glass, where plants have been collected to show their growth, proportions, and beauty, that I have ever had the privilege to see. In times past, as a quasi singing salnon, and a meeting-place for entertainments of various sorts, it turned out practically a failure; as a great plant-house, capable of showing what Nature in that way can produce, it promises to he an abundant success. The grounds have been remodelled, and the garden seems to be well appointed in every way. A. [For illustrations see pp. 271, 275, 279; figs. 49, 50, 51.]

New Handen Plants.

PHALENOPSIS VEITCHIANA BRACHYODON, n. var.

A very interesting surprise, and no doubt an exceedingly rare and nice thing. The sepals and petals are pure white, the lateral sepals with brown spots at the inner and superior part of the base. There is also a slight tinge of the lightest sulphur on those organs. The side laciniæ of the lip are purple at the top, white at the base, stem with numerous brown small spots. Anterior laciniæ of a dark purple, verging to brown, and some spots of the same colour on the light whitishochre ground and margins. The apex of the lip is retuse, and nearly bidentate. The great stoutness of these teeth suggested the name. Callus normal. Column fine amethyst. Messrs. II. Low & Co. kindly sent me the flowers with the following remarks:-The plant on arrival was set aside and marked owing to its peculiar appearance. The leaves in appearance something resembled those of Phalænopsis leucorrhoda lightly mottled on the upper surface, and with a light purple tinge underneath. Imported leaf 6 inches long by 2½ wide. Roots round. The plant has a very sturdy

habit. Flower-spike like a very strong P. rosea, 15 inches high, standing very crect. Flowers well thrown out from the spike. Below the first flower there are three eyes (dormant branches!) which would seem to indicate that the plant when established will branch. H. G. Rehb. f.

DENDROBIUM VEXABILE, n. sp. (?), hyb. nat.

I am sorry to say this is an old and very unwelcome acquaintance of mine. I was, in April, 1878, with my excellent friend Mr. H. Low, and amidst a multitude of Dendrobium luteolum appeared a plant which made me think of Dendrobium Ruckeri. It had, however, light sulphur-ochre-coloured flowers, partly white; the side lacinize of the lip with oumerous aarrow lines, the anterior lacinize very wavy, sulphurtransverse, rhomboid, with a small fleshy mid-lacinize, nearly obliterate, and a fleshy mid-line, covered with short hairs. I believe Mr. Sander compared the growth to that of Dendrobium Falconeri. There are no mauve stripes, but purple ones on the side lacinize. I never had any other news about this, but if it was not an accidental monster it may reappear some day. H. G. Rehb. f.

VANDA TERES (Lindl.) AUROREA, nov. var.

A lovely variety. Its sepals and petals are white. Petals with an exceedingly light hue of rose, perhaps a sign of fading, as I was informed lately by Mr. W. Lee, who sent a grand Cattleya in the way of Wagneri. Lip lightest ochre-coloured in the throat, rose on the lobes, with two rows of small purple dots.

unsightly, and shortlived. Even to the present day examples of the results of the ordeal by fire on Cattleyas are not wanting, although, thanks to the knowledge of the subject spread from such extensive establishments as Mr. Lee's, the cases are rare. Now and then, however, we see small collections which were begun with enthusiasm advertised for sale, and a glance at the plants when staged in the auction rooms invariably tells the same story—they have been oddled into that state of misery which renders them not worth keeping and hardly worth selling. On the other hand, such is the hold which Orchid growing obtains on him who once takes it up that it is seldom we see the collection commenced in earnest, and by one who has made up his mind to take hirts from his neighbour's experiences, come to the hammer

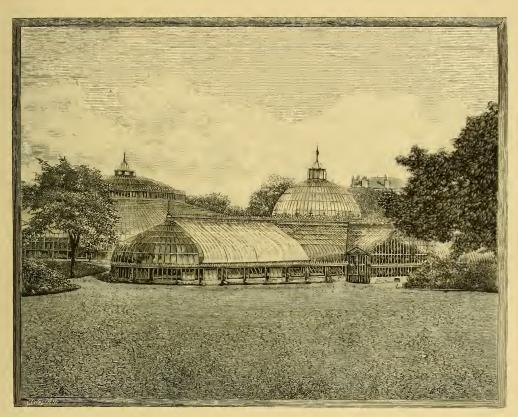


FIG. 49.—THE KIBBLE CONSERVATORY IN THE GLASGOW BOTANIC GARDEN. (SEE P. 270.)

coloured, with an orange blotch at each side of the tuft of hairs. The stem was not like that of Dendrohium Ruckeri, but more like that of Dendrohium luteolum, reddish, thicker, with a strong tendency to constriction at the joints. The late Professor Schrader, of Göttingen, used to prescribe thus: "Write a label, lay it aside, and do not think any more of it." I followed Schrader, hoping Mr. H. Low might forget this specimen among his many fine plants. Alas! Mr. H. Low forgets onthing, and after six years he sends me a specimen, with a demand for a name. After all, there is more satisfaction in naming it than there is in the case of certain Cattleyas, which are gifts of the goddess Eris, notwithstanding their beaute de diable.

I must add that in February, 1880, Mr. Sander sent another thing, of nearly the same stamp. The mentum was very short and twisted, with the lip Column light rose-purple. It came into flower with Sir William Marriott, Bart., the owner of Vanda Parishii Mariottianæ, grown by Mr. T. Denny. I had it from Messrs. H. Low & Co. H. G. Rehb. f.

MR. LEE'S CATTLEYAS.

THOSE who remember the poor condition of the cold-house Odontoglossums of twenty years ago will readily be able to understand in its fullest sense the lamentable state into which the Cattleyas were fast drifting before Mr. Lee and a few other enterprising and clever gentlemen took them in hand some years ago. It is true that in a few of the principal collections some or other, but rarely all of them, were to be found in fair condition, but in nine out of every ten of the smaller collections the plants were miserable,

in its infancy. It is to such persons that Mr. Lee's extensive and well-kept Orchid collection is of inestimable service in its educational capacity, and it is to such that he always accords a gracious reception.

After all the successful culture of Orchids is simple enough provided the beginner starts with a full determination to study his plants, and, above all, to see to the sanitary arrangements of his houses, and to the providing of a careful and well balanced top and bottom ventilation to be open night and day. It appears that in the matter of glazing Orchid-houses our glaziers have become a trifle too clever, their perfectly fitting joints having the opposite to the desired effect. In this matter Mr. Lee has had important results from seeing that each lap is left open enough to admit of the passage of a thin sixpence, and this plan is to be carried out on the new large Phalæoppishouse, which is about to be commenced. The spacious

Cattleya-house (fig. 43, p. 30S, vol. xix.), 100 feet long, 21 feet 6 inches wide, 12 feet 6 inches to ridge, has now had a trial of a year, and certainly never was the good influence of a cleverly planned structure more pointedly asserted than in its case, the growths made by the plants during that time being, in many cases, superior in size to those made in their native habitats, and what is of more importance equal to the imported bulbs in the firmness of their healthy tissues. The result has been an extraordinary show of flowers during this mouth, which has attracted visitors from all parts.

About 500 immense flowers of Cattleyas are to be seen in this house at a glance, chiefly Trianæs, but such Trianæs are not often to be seen. In addition to the many fine plants in bloom among the freshimported pieces are some of the finest plants of the best named varieties in existence, prominent among them being that most gigantic and lovely form, C. T Osmanii. The fine rosy-petalled flower has an expansion of 8 inches, and a broad labellum, crimson margined with rose on the lower half, and stained with orange in the upper portion. Near it is the original specimen of C. T. Dodgsoni, and here and there along the house are nicely-bloomed plants of C. Backhousiana. There is no need to approach this lovely variety closely to discover its merits, for it is visible the whole length of the house, its intense maroon-tinted crimson labellum being much more telling than others which, on close inspection, seem brighter. C. T. Normani is here represented by a large plant well bloomed. It is a variety of the first merit, having much the appearance of C. T. Backhousiana, even to the feather in the petal. Many other noted forms are here, and among them one of the best-shaped and whitest C. T. albas ever seen.

Some of the above-mentioned have cost, I believe, one and two hundred guineas apiece; but let not the uneducated in Orchid lore hold up their hands in horror at the outlay. The day has arrived when the rare works of Nature take rank with the rare works of Art, and surely it is as excusable to give a couple of hundred guineas for one of these grand and variable Cattleyas because it is beautiful, excellent, and never likely to be imported again in exactly the same form, as it is to give ten thousand guineas for a picture for reasons of a like nature. Experience, too, teaches us that the values of well cultivated plants rise instead of fall; no more pointed proof of this fact could be given than the case of the true old autumn flowering labiata; even as near to our time as 1876 Rollisson and others supplied it at about 5 guioeas each, and better plants than those which have fetched 50 guineas during the last two or three years. Arranged among the Cattleyas are a couple of plants of the true Coelogyne cristata alba with several spikes each, some good Lælia harpophylla well bloomed, plants of Brassavola glauca, and Epidendrum Wallisii, and a fine specimen of the rare orange-yellow Lælia flammea, a hybrid of Messrs. Veitch's between L. cinnabarina and L. Pilcheri it gives a new and telling colour among Orchids. The whole of this house and its entrance lobby with its rare Cypripediums, Odontoglossum Roezlii, Pitcher plants, &c., present such a sight as even many Orchid growers have never seen equalled. The Phalænopsis-house, which is to be superseded by a new model structure, is full of bloom of P. Schiller-riana, with some few P. grandiflora, P. amabilis, P. intermedia and its variety Brymeriana, P. Stuartiana, &c. Along the whole of the side of this house on a shelf near the glass are arranged a quantity of plants of the beautiful white Angræcum citratum, their long spikes of bloom (some of them 2 feet 6 inches in length) hanging gracefully over, and mingling well with the Phalænopsis. This Orchid is not so variable as many, but we observe the fine large round-flowered plant which we noted last year holds its own and is probably the best ever seen of its kind.

In this house, too, the rare Vanda Parishii Marriottiana is producing its large wax-like mauve flowers. The cool houses are well supplied with flowers in which of course the varieties of Odontoglossum Alexandræ and Piscatorei predominate, but good masses of O. pulchellum majus, O. Rossii majus, O. blandum, O. facetum, O. lyroglossum, O. prionopetalon, O. mulus, O. Andersonianum, some fine varieties of O. triumphans, and many others are promineot, while in each of the houses the glowing orange and scarlet of the Levlia harpophylla and Sophronitis grandifora, give a cheering effect at this season. In every house flowers abound, the Dendrobes giving quantities of different varieties of D.

nobile, the curled looking D. n. Tollianum not being the least beautiful; D. Wardianum, D. heterocarpum, D. Ainsworthii ×, D. Findlayanum, D. primulitum, D. Lowii, D. Jamesianum, the beautiful D. luteolum chlorocentrum, with flowers over 2 inches across; and a grand form of D. finbriatum, which was originally in Mr. Day's collection. It beats all in its section for the brightness of its orange tints and size of flowers.

The Lycaste-house is as showy as the other departments, many dark and several of the pure white forms being there arranged with fine plants of the lovely white Cymbidium eburneum, large masses of C. Lowianum (one with three spikes of about a score blooms each), Zygopetalum crinitum roseum, and well bloomed pans of the pretty little white-flowered Odontoglossum Oerstedii. This last does very well grown like Sophronitis in a cold house. The Masdevallias are just beginning their main flowering in the long lean-to house, which only contains part of them, with M. tovareosis, M. Veitchiana, M. Lindeni, and several varieties of M. ignea, of which the roundflowered M. i. Stobarteana and the high-coloured M. i. Massangeana are perhaps the best. In the chimæra lobby a fine plant of M. Roezlii (the black chimæra), some M. bullata × M. erythrochæte are n bloom; and among the curious things are Schomburgkia undulata, Angræcum pellucidum, A. arcuatum, and Saccolabium bellioum. Many fine forms of Authurium Scherzerianum lend the show of their scarlet spathes, and the vigour of all the plants seems to say that Mr. Woolford has not much trouble with the sick list.

The Henbageous Honden.

VARIETIES OF NARCISSUS PSEUDO-NARCISSUS "MAJOR."-Few tribes of plants have caused more perplexity to botanists than the Narcisseæ. Salisbury, Haworth, Herbert, who laboured almost simultaneously in the Daffodil field about fifty years ago, each elaborated an arrangement of his own, without any very satisfactory results, except that botanists, both native and foreign, were glad to acquiesce in any plausible system of classification which disposed of so troublesome a class. In fact Haworth—who described not only every variety he had himself seen, but added to his list and classified all that had been described by others-seemed for a time to have left nothing for successors to do. He divided the Narcisseæ into sixteen genera, containing 146 species, and that at a time when none of the new hybrids had yet been introduced. As an example of his minute subdivision it may be mentioned that he made ten species of N. corbularia, the Hoop-petticoat Daffodil. also made the variety N. abscissus (the Clipt-trunk Daffodil) into a separate genus with five species, none of which he had himself seen, but he inserted them, as he tells us, "with a view to excite inquiry after them." Between these two genera comes in Haworth's arrangement, the genus Ajax, in which he has twenty-four species, including all the rest of the Trumpet Daffodils then known either in Nature or cultivation, and probably several which were never known at all,

In 1869, nearly forty years after the publication of Haworth's monograph, Mr. J. G. Baker, of the Royal Herbarium, Kew, proposed in the Gardeners' nicle a far more simple and easy arrangement of the Narcisseæ, including them all in the one genus, Narcissus, and dividing them for convenience into three classes, according to the length of the crown. He arranges the whole genus into twenty-one species. The Trumpet Daffodils, which, exclusive of Corbularia, form two genera and twenty-nine species in Haworth, are all included in the single species N. Pseudo-Narcissus. It is satisfactory to find that in the Genera Plantarum of Bentham and Hooker Mr. Baker's classification is approved and sanctioned; and as that book is likely to be an occumenical authority for many years, we need not be alarmed at the number of new Daffodils which are appearing year by year, every one of which has quite as much claim to specific distinction as many of those enumerated by Haworth.

I propose to speak briefly of a few of the better known and older forms of the larger Trumpet Daffodils, confining myself to-day to those which are not smaller in size than the typical N. Pseudo-Narcissus. Of the white-flowered Trumpets, and the varieties of minor and minimus, of which I have collected several, I shall perhaps ask leave to write at some future time. I shall take it as favour if any one will contradict and correct anything I say in the following notes, which I write as much "with a view to excite inquiry" into the history of these interesting flowers as because I have anything new to tell about them.

Parkinson's account of the first appearance of the large Double Daffodil of gardens is too well known to repeat. Opinions as to what the flower was before it became double have often been given. Those who assert that they can produce it by cultivation out of the common single wild Daffodil have never proved their words, though for many years they have been challenged to do so. I continue to receive so many promises about this that I am not altogether without hope that the feat may be performed, though there are two things that will require explanation:-1. Why does the wild Daffodil in Devonshire produce double flowers quite distinct from those of the large garden Daffodil? 2. Why did the wild Daffodil, which was well known to Parkinson both in its single and its double form, never turn into the large garden variety before his time? The nearest single I have ever seen, both in form and colour, to the common garden double Daffodil, was sent to me two years ago by Mr. Peter Barr, to whom it came from the banks of the Arno, in Tuscany. The same geotleman who sent it to Mr. Barr sent me in that year many bulbs which be hoped would prove to be this single variety. They grow, he says, in great abundance in the meadows between Florence and Pisa, single and double flowers being mixed together. He is unable to keep them single in his garden in Italy, as they soon become double. I regret to say that all that have yet flowered of these in my garden have been double, and cannot be distinguished from the common kind.

It is possible that these Daffodils may have been introduced double from England to Italy, and have degenerated to single, and that they again revert to double when planted in a garden; but why does this reverting to single never happen in England in any of the ten thousand fields and orchards in which the great double Daffodil is naturalised?

I mention next a form not so vigorous in growth as the large double Daffodil, but flowering freely, and increasing rapidly. It has the outer or perianth segments of the flower sulphur-coloured, and the crown clear yellow; and when grown side by side with the common wild Daffodil is twice its size. It does not occur in Hawoth's enumeration, nor do I know its history, but I found it by chance in a cottage garden in Buckinghamshire.

Another variety, which Mr. Barr identifies with

Another variety, which Mr. Barr identifies with Ajax spurius, is exactly like the last in all but colour, which is uniform golden-yellow. Both varieties are early and free flowering, seldom producing barren leaves. Both force well, and are about the best of the major forms. N. spurius is the Trumpet major of many Dutch catalogues. It is naturalised in at least one place in Iteland—in county Cork—where it grows in company with typical N. Pseudo-Narcissus, but flowering about a fortnight earlier—about the middle of February.

The Tenby Daffodil is another major form now becoming a favourite in English gardens on account of its earliness, the hardiness of its flower in enduring rough weather and frost, and its rich golden colour, but the shape of its flower is not nearly as elegant as in the two varieties described before it. instance of Haworth's mistakes, he calls the Tenby Daffodil "lobularis," but identifies the figure in Bandout locations the light in Rot. Mag., No. 1381, which undoubtedly represents it, with obvallaris, a name which Mr. Barr has adopted for it. The Tenby Daffodil is naturalised in one or two parts of Ireland, and on the banks of Windermere, where it is mixed with the common wild Daffodil. It produces seed more freely in my garden than any other Daffodil. It was unknown in Holland till Mr. Barr introduced it. The self-coloured varieties imported annually from Holland, where they probably originated in cultivation, bearing the names of major and maximus, differ slightly on different bulb farms. They are, however, for the most part tolerably distinct from one another. With me maximus is by far the best of the two, and preserves its character, though it increases slowly, and does not flower freely.

The varieties bought as major, though they increase in quantity, produce very few flowers, and those generally deformed, having the crown disfigured by deep irregular gashes. I will not dispute that these are the "great Spanish Daffodils" of Parkinson, though I seek in vain for evidence that either of them is, or ever has been, found wild in Spain; yet all authors follow Parkinson in ascribing them to that country. N. major is included in local botanical catalogues of the South of France, but when I ask to have it sent I get a rather large pale form of N. Pseudo-Narcissus. Much the same may be said about bicolor. I believe that the bicolor figured Bot. Mag, No. 1187-the only old coloured plate of the variety which I can find—is of garden origin. When I send to the neighbourhood of the Pyrences for N. bicolor I get something intermediate between our wild Daflodil and N. muticus, or the Clipt-trunk Daflodil of the Pyrenees. These Clipt-trunks often occur amongst our own wild Daflodils, when a slug has nibbled the nose off a bud just piercing the ground, but in this case a corresponding mutilation of the tip of the outer segments of the flower shows the cause of it. The fine garden form called lorifolius is distinct the shape of the flower; but I have some wild hulbs from a field in Dorsetshire exactly corresponding to it except in size. It is interesting to mark ing to H except in size. It is interesting to mark this divergence from the type. I mention one other large form, named princeps, long cultivated in Hol-land, but not mentioned by Haworth. As imported by Mr. Barr I find it first-rate for forcing, producing flowers the first year nearly as large as those of Emperor; but when planted out in my garden the flowers degenerate to the size of the common wild species, and are very sparingly produced.

In conclusion, I repeat that the only large forms of N. Pseudo-Narcissus besides the garden double Daffodil which I know to be naturalised in the kingdom are Tenby and spurius. Nor can I hear of any being wild in the South of Europe, if we except the N.

Telamonius in the Vale of the Arno.

I find to-day two single-flowered Italian Daffodils in flower. I mentioned above that Mr. Bars sent me a flower two years ago as single Telamonius. I had passed these flowers several times as spurius, but I find them quite distinct, the Italian flower being somewhat more robust, and having the outer segments striped with green. The bulb-leaves, however, are less broad than those of double-flowered Daffodils which came from the same locality, and I hesitate before pronouncing the two plants quite similar. C. Wolley Dod, Edge Hall, Maipas, Feb. 25.

DORONICUMS .- I think I could make some of the most blase of gardeners open their eyes just now did they look into a cool greenhouse here, in the soil bed of which I planted some time since all my stock of Doronicums thickly. I have two kinds, and am not quite sure which is which, but a few plants have stout glossy round leaves, whilst all the rest have leaves much like those of a Cineraria hybrida. austriacum, the other caucasicum, but which is which I do not know. There is comparatively no difference in the flowers, and all the plants are blooming most profusely and beautifully, and being under glass the flowers are singularly pure and fresh. Those who go into ecstacies over yellow Marguerites or Cornflowers would be elevated into a seventh heaven of joy could they have a handful of Doronicum flowers-they are so delicately lined, so elegant and refined. The blooms average 3 inches across, and each has some sixty or seventy narrow petals or florets. The eye is relatively small, as its average dimensions are seven-eighths of an inch only. about Orchids, where in all that family of costly flowers can be found any thing that can compare in wondrous beauty with a Doronicum bloom? I hope lady readers will universally enquire for these flowers, and thus encourage the culture of one of the earliest and most charming of hardy plants. Quercus.

ANEMONES.—The season has been a most generous one to the garden Anemones, for they have been blooming beautifully all the winter. Why do not we see a big bed of these in all large gardens, not necessarily in the flower garden, but in the reserve garden, where a constant supply of flowers would be found? My bed is of second season plants, but a second one from seed sown last June, the seedlings being dibbled out when strong enough, are just pushing up flowers, and there will be a grand show in a few weeks. The blooms of course do not come to their full dimensions just yet, but if gathered when half-expanded, and put into water, they will open splendidly, and make a truly grand posy. I have kept flowers fresh and

bright for a fortnight. Seed is so cheap and strains so good there is no reason why gardeners should not have a few hundreds of plants raised every year.

PULMONARIAS.—How beautiful is the large red-flowered kind, saccharata grandiflora, blooming just now. It is one of the very earliest of herbaceous plants, and is really a lovely thing. Bees favour the flowers greatly. The plant is of the hardiest, and when the bloom is gone and the leaves come up they are found to rival those of Dieffenbachias in marbled markings and beauty. This is a fine plant wherewith to margin subtropical beds, or, infleed, big beds of any sort. As a hardy foliage plant it has scarcely a rival for the purposes indicated. Quercus.

GOLDEN VALERIAN.—A patch of this rich-hued foliage hardy plant is now a striking object in my garden. It nearly resembles a yellow Centaurea ragasina, but is much more easily grown; in fact, unless touched to be divided, it simply wants to be let alone. After the flower-stems spring the plant has no merit, but in the early spring its golden-hued leafage is beautiful, and makes a charming feature. Quercus.

ORCHIDS AT UPPER HOLLOWAY.

AT Mr. B. S. Williams' Victoria and Paradise Nurseries it is quite a pleasure to find so many fine named varieties of Cattleya Triame in bloom after the great number of poor and middling varieties we have seen about of fate flowering among the more recent importations. After all, the fine and distinct varieties are rare even in these days of large importations, and it therefore amounts to this, that those who wish for quality and yet expect variety in the flowers of their C. Triame must either buy a named and described collection of acknowledged good sorts, or adopt the slower method of bringing fine and distinct forms in bloom as they present themselves. The beauty of the varieties Dodgsoni, Itilii, Russelliama, &c., is well known, and Mr. Williams now has in bloom many which are well worthy to class with them, and of which a short description will be serviceable to many.

Cattleya Triame formosa is a massive variety, with

Cattleya Triance formosa is a massive variety, with pale blush sepals and petals, and a rather long labellum, with the lower portion magenta-crimson, and the upper part veined ioside with orange, and

feathered on the outside with rosy-lilac.

C. T. Williamsii.—A well-formed flower, and, viewed from all points, one of the finest of named Triancs. Its sepals and petals are light rose, lip bright dark magenta, the colour merging into dark maroon as it extends up the throat, the outside portion of the labellum veined with purple. The whole plant also is distinct, many of its parts being stained with dark red, and the joint of the leaf and the flower-sheaths are of a rich crimson-brown.

C. T. Rougieri.—This is a vaunted Continental variety. It in some respects bears a resemblance to C. T. Williamsii, but seen side by side with it the

variety Rougieri is a long way behind.

C. T. splendidissima has very much the form and many of the other characteristics of C. T. Dodgsoni. The sepals and petals are white, the latter being 2½ inches in width, and having an expansion of 7 inches. The labellum is dark rose, and it has a much wavier edge than that of Dodgsoni. C. T. rosea gives a very pleasing variety; its welf-formed flowers are entirely of a delicate pale rose, the only departure being a slightly darker blotch on the labellum. It is distinct from those varieties found in gardens under the name C. Warscewiczii delicata. C. T. Regina is a very lovely plant, with flowers of the most exquisite form, and of the most pleasing tints. The sepals and petals are pearly white; the lower half of the labellum is bright mauve, broadly bordered with a white frill, and having in the throat a bright light yellow tinge. It will always be a great favourite.

Cattleya T. Thomsoni has a light rose well-formed flower, but the great peculiarity which renders it distinct from any other is the extraordinary manner in which the sides of the labellum which usually cover the column are thrown back, thus exposing that organ fully to view, and imparting a novel character to the flower. C. T. tyrianthina of Backhouse is a neathooking kind, and very floriferous, with flowers of

medium size, petals bright rose, lip majenta-mauve with orange throat.

C. T. marginata was imported by Mr. Williams, and the singular circumstance is, that the whole of the plants in the importation were exactly alike. The flowers of this variety are very large, but rather narrow petalled, light rose with a darker blotch, and some yellow in the labellum, and a broad white margin round it, which makes the flower very attractive.

C. T. Backhousiana.—This variety is very distinct; out of the thousands of recently imported plants not one has appeared exactly like it, the deep maroon-crimson of the lip running far up the throat, and the purple feather in each of the petals rendering its identity easy and certain. C. T. alba.—It will not be fair to omit this chaste old favourite, which, when true, is as valuable now as it was ten years ago; a fine form of it is now in flower at Mr. Williams', with the whole of the flowers as nearly snow-white as it is possible to get in a Cattleya, the only colour being a very faint tinge of yellow and pink in the throat. A striking feature in the collection here is the large quantity of the best named varieties of Vanda tricolor and V. suavis; they are already furnished with a few flowers, and examination discloses the just pushing spikes, which will give a supply of bloom to extend over the whole summer.

Fresh imported plants do not find much favour here; the space is, therefore, occupied by established plants, many of them with a good character. Among the fine things in bloom are Odontoglossum luteopurpureum hystrix, a very fine thing, as showy as a good O. Wilckeanum; Calanthe nivalis, a variety with snow-white flowers, and without any colour in the lip; C. Turneri, C. Regnieri, Galeandra Devoniana, with its terminal bunch of large flowers, with Gloxinia-like labellum; many Lælia harpo-phylla, Dendrobium Boxalli, D. Findlayanum, quantities of D. Wardianum, D. nobile, D. Ainsworthii, and other Dendrobes. The cold-houses are gay with Odontoglossums of many sorts, among them being prominent O. Chestertoni (true), some good O. Iallii, O. triumphans, and O. Pescatorei; one fine branched spike of over fifty flowers of the last-named presenting a lovely object, which would need no accessory as a plant for table decoration. In the intermediate-houses Miltonia cuneata, with its large white lip, many Cypripediums, Phalænopsis, Oncidiums, &c., are in be found in bloom; and that difficult plant to manage, Epidendrum bicornutum, is growing very strong, and sending up several spikes in a warm, moist, sheltered house: lew white Orchids are prettier, or have beaten more growers than this

One cannot fail to notice the healthy appearance of all Mr. Williams' stock, and the absence of insect pests and all traces of them.

JENSEN ON THE POTATO DISEASE.

(Concluded from p. 240.)

VII. HIBERNATION OF THE DISEASE.—In order to see whether diseased tubers left in the ground from the previous year may be expected to give diseased shoots in spring, the following experiment was tried:—Eighty tubers were infected on December 15, 1852, by dipping them in spore-charged water after their skins had been broken by being pricked with a fork. On December 28—

	Temperature during the time, about	Gave conidia on March 26, 1883.
Sixteen were buried 2 inches deep in a garden	41° F.	t
Sixteen were buried 4 inches deep in a garden	41* F.	2
Sixteen were buried 8 inches deep in a garden	41° F.	2
Sixteen were placed in a cellar	45° F	0
Sixteen were placed in an ordinary living-room	57° F.	o

They were examined on March 26. Those in the living-room were as hard as horn, and gave no condida. Most of those in the cellar were in a similar condition, none gave condidi. Of the forty-eight placed in the ground, twenty-five had rotted so completely that they could not be found. One tuber, 2 inches deep, gave condid; two tubers, 4 inches deep, gave condid in great profusion; two tubers, 8 inches deep, gave condid in great profusion.

Another experiment was made by keeping a large number of Potatos (180 lb.) in a box in a cellar in Copenhagen. They were placed there in October, 1881. About Christmas they were picked over, and the diseased ones, which were many, removed, yet about 20 per cent, were found diseased on May 10. Of these thirty tubers were cut open and placed under bell glasses, of which nine gave conidia on the 13th, and fourteen more on May 15. The temperature of the cellar would be ordinarily about 40° or 41° Fahr., but every fortnight it was used for some domestic purpose, when it was heated by a stove. Now we know that the disease does not spread at a temperature of 41° Fahr., so that unless this artificial heating had taken place no fresh tubers would have become diseased, and the large proportion of tubers which gave conidia in May seems to point to the fact that the mycelium had not hibernated from Christmas to May, but had originated at some more recent date.

VIII. OTHER ORGANISMS CAUSING DECAY IN THE POTATO.—The so-called "wet rot" has been known in Europe long before the Potato disease appeared. Its occurrence is favoured, but not caused, by the presence of the Peronospora. It is especially apt to occur upon the Potatos which are kept during the winter in graves, and is caused by a Bacterium.

Another Bacterium causes the sap of the Potato plant to turn black or brownish black. This species is also associated with the Peronospora, and is more common in the foliage and stem (causing the black patches so characteristic of the disease) than in the tubers, although it is sometimes found in them. Mr. Jensen has produced the Peronospora upon the leaves of Potato plants unaccompanied by this Bacterium; in these instances the spots were of a light colour.

Much of the above information has not as yet been published by Mr. Jensen-such, for example, as the temperature table, the hibernation experiments, &c. It will, therefore, be the more interesting to the committee.

REMARKS .- Mr. Jensen's assertion that the period at which the general outbreak of the Potato disease takes place tends to alternate in successive years certainly took me by surprise, for I was always under the impression it occurred in England generally about the second week in July, subject to the amount of raintall. Before accepting his dictum upon this point I was anxious to find, if possible, whether or no it was supported by any evidence obtainable in Great I have, therefore, summarised the valuable reports which for the past seven years have been given in the Gardeners' Chronicle. These appear to have been made during the last week in July and the first two or three days in August. The 900 reports for the years 1877—1883 were classified into four groups: - (1) those which reported the disease absent; (2) those which reported it just commencing or doubtfully present; (3) those which spoke of its presence in more or less distinct terms; (4) those which spoke of it being exceptionally virulent. The result may be stated in a tabular form, as under :-

in other words, these were late years; while 1878, 1880, and 1882 were early years. In order, however, to see whether this was really the case, the following table has been constructed, showing the percentage these various figures bear to the total number of reports :-

			Year.	Absent.	Slightly.	Distinctly,	Severely.
Late			1877	50 4	16.5	28.8	4.3
Early			1878	41. I	12.4	31.0	15.5
Late			1879	43-7	11.5	31.6	13 2
Early			1880	30. 7	6.9	56.5	5.9
Late			1881	8n 3	13.9	5-8	
Early			1882	8,8	17.5	55 a .	18.7
Late	••	••	1883	68. 2	14.1	17 7	

From the above it is obvious that the number of reports in which the disease was absent alternates very markedly, with one exception (1879), and it is also clear that 1877 was a late year, 1878 was earlier; and while there is very little difference between 1878 and 1879, yet 1880, 1881, 1882, and 1883 were most distinctly early and late alternately. It is not always the case that facts fit so well to a theory as these do. The year 1879, however, should have been late, whereas if it was not early there was certainly very little difference between it and the preceding year.

Let us now see what the rainfall in the months of May, June, and July for these seven years was. the reports are from Great Britain and Ireland, it is necessary that we should have the mean rainfall for each month of these countries. I have had some little difficulty in obtaining this, but at last the Rev. Henry Ffolkes, of Hillington, kindly obtained it for me from Mr. Symons, F.R.S.

verage Rainfall for the Months of May, June, and July, for the past Seven Years, for Great Britain and Ireland:—

		May.	Juoc.	July.	Total.
1877	 	In, 2.88	In. 2.82	In. 4 °3	In. 9 73
1878	 	4.24	3.27	1.48	8.99
1879	 	2 63	4.72	4.66	12.03
188o	 	1 47	3 01	5 13	9.6r
1881	 	2.30	3.49	3.31	910
1882	 	2.38	4.21	5.09	11,68
1883	 	2.23	2.87	3.67	8 77

From the above table it is obvious that the great rainfall of 1879 (12.03 inches) almost extinguished the alternating tendency, and in point of fact made what otherwise would have been a late year into a medium. The next highest rainfall was in 1882 (11.68 inches); this would have been an early year, but the rain made it very early, reducing the absent reports to 8.8 per cent., against 80.3 per cent. of the preceding year (1881).

Mr. Jensen says the disease appeared early in Denmark in 1877. Certainly this was not the case in

of them speak of it being "earlier than usual," four others of it being "very early," and from Somersetshire it was reported at the end of May and beginning of June; from Essex, Sussex, and Wilts, on June 25. In Clare it appeared on June 4, whereas, in previous years, its advent had been noted as being ten days later.

1879 has already been shown to have been a late year, made a medium by the excessive rainfall in May, June, and July. Yet from Westmoreland and Clare it was reported "later" than usual; from Cheshire, Suffolk, and Wilts it was not reported till the middle of July; and in Galway the tops were said to be "as green as Leeks. This time last year (1878) there was not a green leaf to be seen."

In 1880 it was reported from Suffolk as early as June 30, and from Wilts in the first week of July.

In 1881 no less than 80 per cent. of the reports made between July 30 and August 2 speak of the absence of the disease.

In 1882, on the other hand, the disease appears very early, for in only 8.8 per cent. of the reports do we find it absent (made for July 29 to August 2). In Lapark it was noted as being earlier, for Middlesex as "unusually early," from Wilts "very early," from Cornwall one report says a "month," and another "five weeks earlier than usual."

In 1883 the disease was late. One reporter from Hants says, "Considerably later than usual;" 68 per cent. of the reports were free from it during the last week of July; therefore I think it may be taken as proved by the Gardeners' Chronicle reports that the Potato disease has a tendency, subject to the rainfall of May, June, and July, to alternate between a late and an early date in its outbreak.

In conclusion, I would only add that the perusal of the reports for any year will convince the reader that the general outbreak does not occur, as is not in-frequently imagined, suddenly. Reports from one district will speak of it as absent, and the next from the same country, as present perhaps severely. Very many reports, too, speak of it in such terms as having "appeared about here in many places, but it has not attacked us yet." Charles B. Plowright, King's Lynn, Feb. 8.

PROTECTING ROSE CUTTINGS FROM HARSH WINDS .- I always propagate each successive October some Roses I am anxious to increase from cuttingsgenerally the newer kinds, or varieties that do particularly well in our soil or situation; but more especially for comparison with the same or other kinds with myself or others on stocks. There is still another reason almost equally potential—passing over the saving effected—that is, the interest and zest experienced in watching them rooting, and the innate satisfaction you experience when you find you have succeeded. I am now referring to the simple process

TABLE OF THE REPORTS UPON THE POTATO CROP FOR THE SEVEN YEARS, 1877-1883, GIVEN IN THE GARDENERS' CHRONICLE,

The reports were made up during the last few days of July and first two or three days of August in each year. The first column under each year shows the number of reports which speak of the disease being absent at the time the report was written. The next columns, 1, 2, and 3 show relatively the degree with which the disease existed—1, slightly; 2, distinctly; 3, severely Of course there three late reports were or less arbitrary.

Of course circle curse such groups are more or less architects.																																		
							1877.				1878.				1879.				1880.				1881.				1882.				1883.			
					Present.			Present.			ıı.	Present,			it.	Absent.	Present.			Absent.	Present.			ent	Present.			sent.	Present,					
						Abs	1	2	3	Abs	ı	2	3	Absent	1	2	3	Abs	1	2	3	Abs	τ	2	3	Abse	τ	2	3	Abs	1	2	3	
Scotland						18	I	1		23				32	1	1		11	1			8	2			3		7	٠	11		z		
England— Northern Countie	s.,					14	2	2		zo.	٠	2		ın	4	3		3		5		7	2			3		6		9				
Midland Countie	5 44					13	13	3		12	9	4	1	15	7	. 15	6	4	2	15		14	1					13	4	17	5	2		
Eastern Counties						5	2	5		2	2	6		4		5	3	ī	1	4	1	6	1	1			1	6		3				
Southern Countie	s					1	١	11	2	2	1	6	6	1	4	21	2	1	2	6	4	8	2				١		7	5	1	4		
Western Counties						5	3	10	3	1	1	11	9	1	2	5	6	6	I	14		21		4		1	13	9		7	3	8		
Wales						4		2		1	T T	2	2	1		4	2	1		3	1	2	2					1	2	1	2			
Ireland						9	2	6	1	2	2	9	2	15	2	3		3		8		2	2					2	1	4	1			
Channel Islands						1	١				z			1		1		1		2		x								1				
	Tota	ıls				70	23	40	6	53	16	40	20	80	21	58	24	31	7	57	6	69	12	5		7	14	44	15	58	12	15		

From this it will be seen at a glance that the greatest number of reports of the disease being absent -that is, of not having made its appearance at the time the reports were made-for sooner or later we may take it for granted it did attack the Potato crop-are the years 1877, 1879, 1881, and 1883;

Great Britain if the reporters can be trusted, and if gardeners do not know the Potato disease when they see it I do not know who does. Here it was a late

On the other hand, 1878 was an early year; so much was this the case, that of the 129 reports sent in four

-within the reach of the humblest-of putting in the cutting in the open air. So far I have not lost I per cent., and as the leaf-buds have expanded they seem started on their career. Not so yet. Perhaps not 5 per cent., are rooted. The fierce March winds have hitherto been the funeral dirge of a large portion

of those I tried. I am putting moss and fine hay between them as protection against it, as they must not be wholly covered. W. J. Murphy, Clonmel.

PRUNING MARÉCHAL NIEL ROSE.—Looking over or rather up at the fine growths made by Maréchal Niel Rose trees under glass last year, I can but note how, differing from Vine rods as a rule, these Rose rods, S or more feet in length of fine robust growth, have broken at every bud, with the exception of perhaps three or four at the most at the base; of course every shoot will carry a bloom, and the exhaustion from so doing is so great that if the long rod he left to carry bloom another year, the product will not be one-half so good as that of this year. Do we not cripple our Maréchal Niel Roses by reltaining from hard pruning,

FORESTRY.

FOREST WORK FOR MARCH.—The bitter parching blasts of March tell most detrimentally on newly planted trees and shrubs, and clearly proclaim that the work of transplanting should be suspended for the present, and until such time as more genial warm weather sets in. Should it be necessary, or rather unavoidable, to plant during the present month proper precaution must in all cases be taken to expose the roots as short a time as possible to the drying influence of the air. A covering of any material such as damp straw, or even old mats, is readily obtained, and should always be used in transferring plants from

rocking with the wind. Should any be found they must at once be tramped up and placed in an erect position, or, better still, with a slight inclination to the point from which the prevailing winds of the district usually blow. Stones should never be placed in the holes formed by the plants when rocking about, as it is not only injurious to them, but next to useless for the purpose intended. Considering the strain and consequent damage to the roots of trees when rocking with the wind, it well repays us to use every effort to avert it, either by a timely staking or firm trampling of the soil around the collar of the plants.

March is usually a busy month in the home nursery, for between the refilling of vacant plots and meeting the planters' demands those employed in this

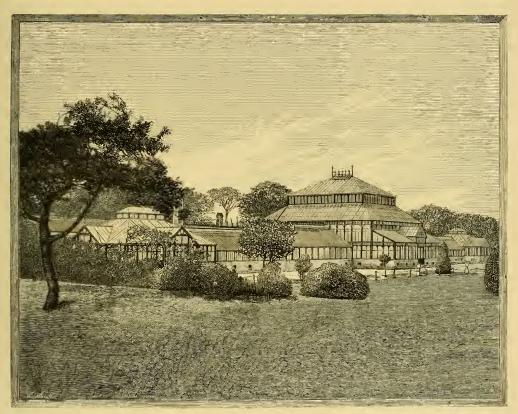


FIG. 50.—THE NEW RANGE OF PLANT HOUSES IN THE GLASGOW BOTANIC GARDEN. (SEE P. 269.)

because strong growth seems to be the very life of the plant, and the only wood that will give good flowers? I propose as soon as the flowers from the present shoots are all cut, to shorten back all these long growths to one or two dormant buds, in the expectation that other fine rods will go up, and produce next year a grand lot of blooms. Perhaps it is a wise provision of Nature that these best buds should remain dormant, that they may be made to develope in proper course by hard pruning. That old plants of Maréchal Niel are wondrously recuperative I have seen ample evidence, and an old one with a very large stem cut back to within 2 feet of the soil is, now pushing buds out of hard wood and rind that bid fair to make spleodid growths during the summer. That growth is unusually early this year there can be no doubt. Flower-buds are showing, although the house is a cool one; and with a prospect of an early Rose harvest early hard pruning should be all the more favourable to strong new rods. A. D.

the home nursery to the plantation. It is also well only to lift sufficient plants for immediate requirements, and not to keep, as is usually the case, quantities laid in ready for use. Watering is highly beneficial to March transplants, but can only be resorted to in the case of evergreens, being impracticable in general forest planting, at least where such is carried out on an extensive scale. In the latter case puddling the roots previous to planting is of the utmost benefit, and may be practised with the most satisfactory results. In all cases, however, where possible, it is best to defer the transplanting of trees and shrubs until next month unless we are favoured with unusually mild weather during the present. After the late succession of storms with which we have been visited, it is particularly necessary during dry weather to go round newly formed plantations and thoroughly examine the plants, to see that none are

branch of forest work are kept pretty busily engaged. The roots of young nursery stock should be well puddled and covered during their transit, and kept out of the ground as short a time as possible. Cut out all double or competitive shoots, as well as strong side branches, from plants while being removed from one situation to another. When lining-out, give young plants ample room, which will not only induce robust growth but the formation of strong fibrous roots as well. Overcrowding is highly injurious and should be avoided.

The thinning of mixed plantations should be completed by the end of the month, as considerable risk is incurred by felling after the buds begin to burst. Pine and Fir plantations may be left to the last. Thinning should be regulated by situation and exposure, as well as by the previous treatment of the trees; almost as much damage being done by a too

sudden and reckless clearance as by overcrowding Where woods have been neglected the thinning must be gradually performed, and proportionate to the age and size of the trees. Remove, as early as possible, timber from the woodlands, particularly from those portions where the stools are intended for reproduction. Bind faggots, and during dry weather have them stacked or carted to the drying shed for use as required. Layering for game coverts may now he proceeded with, and the pruning and dressing of ever-greens completed as early as possible. No time should be lost in pruning off such branches as have become broken or twisted by the violence of the late storms, and the greatest care should be taken to guard against the lodgment of water in any of the mounds. Great damage has been done to trees and shrubs by the terrific storm which passed over this district on Wednesday night and Thursday morning, the 20th and 21st ult. All the plantations on this estate suffered severely, and in the park many fine specimen trees have been levelled with the ground. For the past six weeks we have had a succession of storms, but that of the 20th and 21st was certainly the most severe, and has occasioned an amount of work that will take some months to accom-

Open drains, and the outlets of covered ones, will require attention, as they are in many cases apt to get choked with an accumulation of fallen branches and leaves. The excessive rainfall of the past month necessitates strict attention being paid to drainage of all kinds. Have all fences put in thorough repair, and look well to tree-guards, rabbit-proof netting, and erections of various kinds for preventing the attacks of game.

Finish the repairing of roads, drives, and walks, and examine woodland rides, as rabbits are apt to undermine these with their burrows, thus rendering them highly dangerous for the removal of timber. See that wire fences are not too tight during frosty weather, a slight slackening of the wires will prevent overstraining and breakage. A. D. Webster, Fenrhyn Castle, North Wales.

Che Erboreinm.

CERASUS PSEUDO CERASUS, THE FALSE CHERRY.—This is earlier in bloom than any allied tree in the Cambridge Botanic Garden. It is desirable on account of its earliness, and because of its moderate size. The flowers are pale pink in colour, and possess a pleasing perfume. Cuttings are easily rooted. It was tried by Mr. Knight as a fruit tree, but there has been no evidence here of its being useful as such. The fruit is small, of pale red colour, and is said to be of pleasant sub-acid flavour. It has been found to force better than any other kind.

TILIA PETIOLARIS, D.C. — In British gardens a tree is often found under the names of Tilia americana pendula, T. alba pendula, platyphylia pendula, or argentea pendula. It is distinctly one of the handsomest of its class, is quite hardy, and ripens seed. Sir Joseph Hooker has investigated the history of this line tree, generally supposed to be of Northest American origin. This, however, turns out to be an error, and the tree is now referred to a species which is probably native of the Crimea. T. petiolaris is like a pendulous variety of the white Lime, but has longer leaf-stalks; smooth, not crumpled leaves, and a five-lobed warted seed-vessel (not ellipsoid five-angled and smooth). A figure is given in the Bot, Mag. (1884), t. 6737.

TALAUMA CANDOLLEI.—Like some of the Magnolias the flowers of this plant give off a grateful aroma as they expand, and were it not for their fugacious nature the various members of the genus would undoubtedly become popular subjects for the stove or warm conservatory for this property alone. The large pale yellow spoon-shaped petals are of great consistency, and overlap each other in the manner of a rosebud, while the nearly white sepals are more spreading. The only valid distinction between this and a Magnolia is that the matured fruits become fused together, and fall away in irregular masses, whereas in the latter they are persistent. Several plants of T. Candollei have flowered in the Palmhous: at Kew, and there is a figure of the species in the Balanical Register, 1709.

Prehid Notes and Cleanings.

PHAIUS TUBERCULOSUS, Bl. - Mr. A. Sillem, Laurie Park, Sydenbam, S.E., kindly informs me of his flowering now five inflorescences of this in the finest development, and one of those, a six-flowered one, is on my table, thanks to this gentleman. The flowers are much superior to the first developed ones. There would also appear to be a great difference in colour. The flowers at hand are nearly red over all the side lobes of lip, and there are but very small ochre dots, while those seen first were ochre with small red spots. The mauve colour of the anterior lobe of the lip is very intense, and the three orange long calli in the disc of that lobe are very bright; and so is the mauve-purple base of column. As it is, the species is very ornamental, very desirable, and we may expect its always lasting rare, since it is one of the shyest travellers to be found. H. G. Rohb. f.

EFFECTS OF CUTTING AWAY THE BACK BULBS OF ORCHIDS .- An apparent attempt to show that some new discovery connected with the cultivation of some particular kind of plant or other has been made, however opposed the practice may be to common sense and experience, is not always, when made public, so harmless as might be supposed, as for instance the mischievous practice of cutting off the back bulbs of Orchids, the advantage of which was held forth in a contemporary a year or two since, and by which, in a case that came to our knowledge, an owner of a fine lot of Dendrobes was unluckily led to improve, as he hoped, their health and appearance by removing the old bulbs before blooming time; for would not the plants look much nicer with nothing but the flowering growths then pushing their buds? Besides, according to the doctrine, all the strength of the roots would be concentrated in the leading bulbs; so a clean sweep was made of the whole of the back growth, with the result that might have been anticipated, for the advancing flowers turned yellow and withered away. But this was not the worst mischiel, for some of the plants died outright, whilst others were reduced to the condition of imported stock that had been half killed in transit.

OLCHIDS AT MR. DORMAN'S, SYDENHAM.

The fine collection of Orchids here is particularly rich in coul and intermediate temperature plants, such as Odontoglossums and Cattleyas; of the latter the Triances alone are a treat to see, combining as they do the various forms and colours, from those that are all but white to the splendid high coloured C. Trianæ Backhouseana, with its inteosely deep-shaded lip and crimson-feathered petals. There are many fine forms of other species, such as C. Mendelii, C. speciosissima, C. Mossiæ, C. Warneri, and C. Skinneri, including the rare C. Skinneri alba, that will later on make a telling display. Of Lælias of the L. purpurata and L. elegans section there are a grand lot of fine specimens, which forecast by their big plump bulbs and numerous flower-sheaths what the bloom will be later on. Quantities of Lycaste Skinneri were in flower, amongst them being the scarce and beautiful L. Skinneri alba. Here also in bloom were several forms of the light-coloured Lælia anceps, each differing from the others. With these was a fine lot of well-grown Auguloas, comprising A. Clowesii, A. Ruckeri, A. uniflora, and others. Cologynes of the cristata section, including C. cristata Lemoniana, were flowering well so as to nearly hide the leaves and bulbs, carrying as many as seven flowers on a spike. In the adjoining house in the same range are grown the warmest species, in which are numbers of Phalænopsis with stout, healthy foliage. One plant of P. violacea has leaves 4 inches across; of P. Stuartiana, one of the best forms we have seen was in flower, with the spots larger and better defined than usual. Odontoglossum Pescatorei and O. vexillarium are grown together, and have a house to them-Both species are in splendid condition, especially the last-named, which from their size and number must be a sight worth seeing when in bloom. One specimen we understand bore 114 flowers last season, and has now some fourteen leads. sweet-scented Dendrobium, D. japonicum, was flowering nicely. There is an extensive stock of Odonto-glossum crispum filling a large span-roofed house,

many of them consisting of the finest selected forms, large plants with strong plump bulbs that, when fully in bloom, must be a feature in themselves. The unique plant of O. crispum aureum magnificum, shown and certificated last year, is coming on with two immensely strong spikes, two others having been removed to avoid distressing the plant; in habit it is quite distinct, the leaves are large, 2 inches wide, the bulbs are of immense size and of the deepest brown colour, almost black, the spikes are stout, dense, and erect; the colour of the flowers is yellow, with markings in the way of O. Ruckerianum and O. Ander-sonianum. In the house principally occupied by Masdevallias are located the cream of this deservedly favourite genus; they are in good condition, a fine plant of the singular and beautiful M. Shuttleworthii was in bloom, the individual flowers 91 inches from tip The house almost wholly devoted to Dendrobiums will be a sheet of bloom shortly. Amongst a host of the leading kinds, D. Ainsworthii x, D. heterocarpum, D. crassinode, and D. Wardianum will soon be loaded with flowers; the plants are strong, some of the bulbs of D. Wardianum are 4 feet long. extensive collection throughout bears evidence of the care and attention bestowed on it.

"SELECT ORCHIDACEOUS PLANTS,"—Mr. Robert Warner has, we bear, been awarded a Silver Medal for his Select Orchidaceous Plants at the Calcutta Exhibition.

FRUITS UNDER GLASS.

VINES .- The heavy falls of cold rain and sleet which we have recently experienced, will have had an injurious effect upon early Vines that have their roots in unprotected borders, for these must of necessity have become saturated, and their temperature brought to a very low point, thereby keeping roots in a state unfitted to properly carry on their functions. Early Vines subjected to these adverse conditions suffer in a degree which those growing in protected borders are not exposed to; I would, therefore, again impress upon those who purpose planting not to overlook the considerable utility of well made inside borders. Houses in which the fruit is thioned should have a 'night temperature of 65°, with a little air on on those that are closely glazed. We contrive this by having pipes fixed in the front wall, one end covered with perforated zinc, and the other abutting on the warm pipes. As soon as the thermometer commences to rise from solar heat admit a little air by the back ventilators, and allow it gradually to reach 85°, giving additional air at intervals cautiously so as to avoid cold draughts; close before the sun loses its power, at the same time damping the borders and all other surfaces, During dull weather raise the day temperature only 10° above that recommended for the night, and preserve a moderately moist atmosphere. Continue to disbud and stop sublaterals. Sponge foliage that is attacked with thrips or red-spider; by the way I have never seen satisfactory results accrue from the use of sulphur placed upon heated pipes, which has been frequently advised to destroy the latter; but the practice of sponging the foliage, although not unattended with mischief if carelessly done, is remedial if promptly undertaken and persevered with. Any seedless berries that were overlooked at the time of thinning should be cut out as soon as seen, and the shoulders of the larger bunches carefully suspended. Persevere with the work in successional-houses, keeping late Hamburghs still open and as cool as

PEACHES AND NECTABINES.—Trees that have set too many fruits should be thinned as soon as it can be seen which will swell freely, remembering that a good surplus should be left until the critical period of stuning is over. If possible obtain an even crop with those that have taken the lead upon the upper surfaces of the strongest wood, and as far as practicable do not over-crop the weakest. Follow up the disbudding and heeling-down of young shoots as they become fit, likewise mulch the borders with cow and horse manure, and see that they are sufficiently watered when that is required; those that are shallow and well drained requiring particular attention, while trees whose roots have filled their borders will be much assisted by occasional soakings of weak liquid-manure. Those that have extended over a considerable space of trellis produce finer fruits and more

satisfactory crops than do those that are restricted, therefore where an inferior variety exists between two valuable ones it is well to cut it away by degrees, allowing the others to fill its space. On mild nights maintain a maximum temperature of 58°, and still admit the circulation of air by the front ventilators. Syringe and ventilate early on clear days, and allow the warmth to increase gradually with more air given until it reaches 75° to 80°; syringe thoroughly at closing time, but avoid directing the water so as to tear the young leaves. Pay unremitting attention to the requirements of the second house, and close a third if an unbroken supply of fruit is required during the season. In fertilising the blossoms carefully attend to those that are deficient of pollen, and where ants abound exterminate them : these diligent pests in their search for honey sometimes cause wholesale destruction by removing stamens. Be careful that there is no lack of moisture in the borders, for a check to the trees when in blossom from this cause will prevent a good set of fruit. Retard the latesthouse by keeping it open until the blossoms begin to expand, and keep trees that have been recently planted, also those that have had their roots lifted, mulched with short manure.

MELONS. - Short days and a deficiency of sunlight are unfavourable to these plants. As the roots of the early plants reach the outside of the ridges or hillocks add more warmed soil, firmly pressed down. Train the main shoots and stop them when they have reached 3 to 4 feet up the trellis, carefully thin and tie-out laterals and nip out their points at one or two joints beyond the female blossoms. Impregnate as many of the latter on one day as can be found open, selecting, as they commence to swell, the most perfect fruits for the crop. It is usually difficult to induce other fruits set on a plant upon which one or more are swelling, hence the advisability of securing several blossoms together. Cease syringing while the plants are in blossom, and after the crop is insured mulch with short manure, and water regularly and copiously with tepld diluted manure-water, preventing either from coming into contact with the stems. Keep plants in pots in a steady bottom-heat, and see that these are also top-dressed and well nourished with liquid manure. In preparing fermenting material for heds employ three-fourths of leaves with one of stable litter. Well mix these together, and throw the bulk in a heap, which turn occasionally until the rank steam has escaped, when the beds can be formed. Plant successional plants in their fruiting quarters as they become fit, bearing in mind that a few planted at frequent intervals yield a more satisfactory supply of fruits than do large batches planted at longer intervals. Two highly-flavoured valuable varieties for general crops are William Tillery and Blenheim Orange, the former green and the other scarlet-flesh, Thos. Coomber, Hendre Garden, Monmouth.

Che Pitchen Garden.

SEED SOWING .- Small sowings may now be made in a warm situation of the following seeds :- Early London, Dean's Snowball, and Veitch's Autumn Giant Cauliflowers; Snow's Winter White Broccoli, Drumhead and Early Ulm Savoys, Brussels Sprouts, Cottager's and Scotch Kales, and a box of Curled Parsley (in heat) for transplanting later on, Make another sowing of Broad Beans and Peas, and draw a little soil up to those sown early in January, and stake the latter forthwith. This done lay on five or six inches thick of rotten dung on either side the rows of Peas, which will serve a threefold purpose, viz., that of protecting the young haulms from cutting winds during the present month, maintaining the roots in a more equable condition than would otherwise be the case, and conserving the water given them during the summer months. Old Cabbage stumps should be removed fortwith, and the ground be made ready for Potatos, of which a small planting of the Early Kidneys may be made at once in drills, 5 inches deep, 2 feet asunder, and 10 or 12 inches apart in the row. It will be advisable to defer planting the main garden crop of Potatos a fortnight longer, with a view to their escaping the dangers of late frosts. If the ground has been liberally manured for the preceding crop, and is moderately rich, it will not be necessary to manure it for the Potato crop; in fact the latter, under the circumstances, will be hetter in quality and quantity without it. Onion, Parsnip, and Carrot seeds should be sown as recommended in last Calendar, as soon as the condition of the ground will admit of the work being done. Early plantings of Cauliflowers should, if not already done, have the Spruce boughs with which the plants have been protected removed and be earthed up. Seed-beds and seedlings just coming through the surface of the bed will require to be protected with a piece of netting from the ravages of birds.

PREFARING GROUND FOR ASPARAGUS.—Where new plantations of Asparagus are contemplated the ground should be got ready for planting next month; it should be deeply trenched, and a liberal supply of well-rotted manure be incorporated with it as the trenching proceeds. There should be a uniform depth of 3 feet of soil at least, and if it be of a sandy alluvial nature it will in every respect be suitable, providing the drainage is good, for the growth of Asparagus. Existing beds should at once have the short dung that was laid on them last autumn covered with a few inches of soil from the alleys, which should then be lined off afriesh. This soil after a few days exposure to the weather will be sufficiently dry to rake over, and, where leaf-mould is plentiful, a few inches thick might then be put on the beds. This in my opinion adds considerably to the crispness of the produce and improves its colour.

FORCING DEPARTMENT .- French Beans growing in early vineries and Peach-houses will require extra attention in the application of water both to the roots and overhead, otherwise red-spider will be sure to attack the plants, and spread to the parmanent occupants of the house. Sufficient batches of seed should be planted at frequent intervals to maintain the supply. Top-dress succession crops when about inches above the rim of the pots with warmed soil, similar to that in which the plants are growing, and pinch out the points of the shoots to make them Young plants of Brussels Sprouts, Cauliflowers, Lettuce, Leeks, &c., should be pricked out in a frame on gentle bottom-heat as soon as large enough, preparatory to being planted in the open later on. Sow Moore's Cream and Muir's Prolific later on. Sow Moore's Cream and Muir's Frontie Hybrid Vegetable Marrows, and Stockbridge Ridge Cucumber seed singly in 3-inch pots. A sowing should also be made of red and white Celery, of the varieties most approved of, Turner's Incomparable White and Leicester Red being excellent soits. See that the supplies of Asparagus, Seakale, and Rhubarb are equal to the demand, and that pits and frames in which Potatos, Carrots, and Radishes are growing have sufficient air admitted to them to prevent the plants making a weakly growth; the former, howe latter and the condition of the weather, which latter being favourable the sashes should be taken off crops of Potatos, &c., early in the morning, and replaced late in the afternoon. H. W. Ward, Longford Castle Gardens, Wilts.

Plants and thein Sultune.

FERNS .- Whilst the potting of the stove plants is being carried on many seedling Ferns will probably have been saved from the pots of those plants in which they have germinated accidentally. Where many cut Fern fronds or small plants are required for decorative purposes these seedlings should be looked after; they will invariably make more robust plants than when increased solely by division, Davallias excepted. The strongest of these young plants should be potted singly into thumbs or small 60's, from which they can be shifted as they become well established. The smaller plants should be pricked off into seed-pans or around the edges of small pots. A good stock of young growing stuff of Adiantum cuneatum, A. concinnum, A. formosum, and A. gracillimum, with Pteris argyrea, P. cretica, P. serrulata, and P. tremula, would at all times be of essential service for decorative purposes in small pots. To these also should be added several of the Aspleniums, as A. bulbiferum, A. Belangeri, A. flaccidum, which can be raised from spores or increased from the numbers of young plants that are to be found on most well developed fronds. Some few seedlings, too, of the

golden and silver forms of Gymnogrammas will be found useful, and when well looked after will quickly overtake the old plants. The Davallas are readily propagated by division of the rhizomes, the small growing forms being invaluable for cutting purposes. D. bullata, D. Mariesii, D. dissecta, and D. elegans are of the best, and will well repay a little extra attention given them. Lygodium scandeos should be grown by those who have much demand for dinner-table decorations, being the best of all climbing Ferns for cut purposes. When required for such, each frond should have a good length of string, to which it can be trained and readily removed when needed. The following Ferns are all useful for filling vases and rustic baskets for indoor decorations, most of them having great persistency under adverse circumstances, viz., Asplenium bulbiferum, Cyttomium falcatum, Davallia cannaticosis, Lastrea Sieboldi, Nephrolepis tuberosa, and N. exaltata, Niphobolus lingua, and Platycerium alcicorne. Todea superba, with ordinary attention, will thrive for a great length of time in a case or under a bell-glass. The use of such Ferns as we have just named would be much preferable to drawing the supplies from more delicate kinds that easily suffer.

All the stock of Ferns should be gone through

closely for repotting, as may be necessary. We disposed to think that Adiantum cuneatum will disposed to limit that random with the best grown in nearly or quite half loam, when required to supply cut fronds. These will not, as a rule, be so large in the pinnæ as if they were taken from plants growing in a mixture containing a great quantity of peat, but will be all the better calculated remain fresh for a greater length of time. that may now be making a fresh start should have all the light possible for some months to come, to develope a sturdy growth; a temperate-house will be found the best, without an excess of or stope a stury growth; a temperate-house will be found the best, without an excess of moisture. Under such conditions the fronds will be harder and better calculated to retain their freshees when cut. Most Ferns that are of vigorous growth will succeed in a mixture of peat and loam. Leaf-mould would be beneficial to the smaller-rowing section when it is of coal to the smallergrowing species when it is of good quality, instead of quite so much loam. There are, of course, some exceptions, such, lor instance, as the Gymnogrammas, which succeed best in all peat, and are potted as hard as a New Holland plant; the Cheilanthes and the Nothochleenas thrive best under the same treatment. Nothochleoas thrive best under the same treatment. A few pieces of charcoal mixed with the peat suits these delicately-rooted Ferns. All the true Gleichenias grow most freely in peat, with an abundance of drainage as a safeguard against the extra amount of water they require. G. flabellata of the Mertensia group succeeds best with an excess of loam over that of peat, developing much finer fronds than when in the latter compost alone. Keep an eye on such as Leucostegia immersa. This handsome deciduous Fern will soon he nutting ma firsh lot of fronds. This and similar immersa. In the state of the declared from a source be putting up a fresh lot of fronds. This and similar kinds should be reported before any growth is far advanced. Any Tree Ferns that give indications of putting up a crop of fresh fronds will be benefited by having some sphagnum moss bound around the stem, if the same should not already have been done. if the same should not already have been done. Where it has been practised in previous seasons a fresb supply will be necessary close up to the crown, where fresh roots are likely to be emitted. The moss is a great encouragement to the perfecting of finer fronds, and is also a conserver of moisture to feed the roots that are put forth up the stem. We would not advise this treatment with stems that are already of extra circumference, but others would in most cases be improved in annearance. Whilst the notmost cases be improved in appearance. Whilst the potmost cases be improved in appearance. Whils the potting operations are being carried out, keep a close
watch after insect pests—of which brown scale and
the are the most troublesome. Those fronds that
are the worst affected should be removed before any
fresh ones come in contact with them, and the others
carefully sponged where possible. If such as the
Maidenhairs are troubled with scale, severe thinning of the fronds will be requisite to lessen the numbers.

FORCING DEPARTMENT.—All kinds of plants that are grown for forcing purposes will now be found to come along far quucker than a month back. See therefore that the supply does not get io excess of the demand to any great extent. All the hardier plants that have been forwarded in heat should be moved to a trifle cooler house to expand their flowers, or else have the temperature of the forcing pit slightly reduced. The flowers may not be so fine, but this will hardly be perceived, the advantage being in greater substance and a prolonged flowering season; when in full flower a slight shading will be uccessary in bright sunshine, and close attention to the watering. Any cut bloom that is required should be cut early in the morning, avoiding doing so in the later hours, when the sun is on the plants, as much as possible. Do not expose those plants that are past their best to sudden changes of temperature, and if only a slight protection can be given it will certainly repay the trouble, either in forwarding the plants for another season or keeping them in better condition for being planted-out. Tannes Hudson, Gunnersbury House Gardens, Acton, W.

MONDAY.

APPOINTMENTS FOR THE ENSUING WEEK.

Mar. 4 Sale of Camellias, Roses, &c., at the City
Auction Mart, by Protheroe & Morris.
(Sale of Hardy Plants and Bulbs, at Stevens' TUESDAY, Auction Mart, by Protheror & Australian Sale of Hardy Plants and Bulbs, at Stevens' Sale of Hardy Plants and Bulbs, at ProRooms.

Linnean Society meets at 8 p. 8. Papers to be read-i-1, "On the Rehations between Professor II. G. Mivart. 2, "On Indian Cyperus," by C. B. Clarke. 2, "Metamorphous of Filaria sanguinis hominist Cyperus," by C. B. Clarke. 2, "Metamorphous of Filaria sanguinis hominist Cyperus," by C. B. Clarke. 2, "Metamorphous of Filaria sanguinis hominist Cyperus," by C. B. Alger, "by Dr. J. Schaarschmidt, "Aghanstan Alger," by Dr. J. Schaarschmidt, "Aghanstan Alger," by Dr. J. Schaarschmidt, "Sole of Imported Orchids, at Stevens' Rooms.

FRIDAY, Mar. 5

SATURDAY, Mar. 8

SATURDAY, Mar. 8 Index of Hardy Plants and Bulbs, at Stevens' Rooms.

Mar. 3 Sale of Lilium auratum Bulbs, at Stevens'

H AVING regard to the enormous increase of our metropolitan population, it is not to be wondered at if those whose vocation it is to furnish this vast gathering of people with vegetables, fruits, and other garden products, are found constantly pushing their gardens farther and farther out into the country, and are absorbing as fast as they can all suitable ground that comes in their way. When we regard the sad stories told of the state of agriculture, of farms going to ruin for lack of tenants, and thousands of acres of fertile land left lying waste for lack of cultivation, it is not possible to help comparing with it what seems to be the prosperous condition of MARKET-GAR-DENING around our metropolis and large towns. Those familiar with the market trade see growers in every direction grasping, not only every field that offers within easy distance of their homesteads with avidity, but even engaging land in remote districts to grow for the season Potatos, Peas, and similar crops. That this expansion indicates prosperity there can be no doubt.

Market-gardening in the hands of mere farmers (a class, by-the-bye, for which the well trained market-grower shows scant respect) or of amateurs too often results in failure and loss. On the other hand, well trained men make it pay, and not only so, but all around them is greatly benefited. The land is better cultivated and made far more productive, far more labour is employed, and it is well paid. The wages of the working class employed in metropolitan market gardens, when helped by what their wives and elder members of their families earn during the summer months, suffice to make the mouths of the poor farm labourer to water, for whilst the regular pay is 3s. per day, summer over-time often adds 6s. or 7s. more per week; and the wife, with day-work as a rule, and piece-work in the best flower, fruit, and vegetable-gathering season, often earns as much more, so that of real poverty amongst the market-gardening population little is known except what is created by their own foolish habits. Then, too, rent is higher, and higher rates are paid, so that when to these things are added the blessings to society resulting from increased production of the best edible material. it becomes evident that wherever market-gardening is practised it is a great boon to the locality.

The bona fide market-gardeners seem to hold their purely agricultural brother cultivators of the soil just a little in contempt. The latter are too limited in their range of thought and action, and in the scope of their cropping and general work. We have actually heard market-gardeners charge the farmer with lacking energy in times of trouble and pressure, and as preferring to sit down and growl lustily over the badness of the times and seasons than to set to work and evolve what good may be got out of ill. Market-gardeners have their losses, their troubles, their competitions with foreigners, and heavy ones, too; they have their bad seasons and oft disasters to their crops from wet or frost, but still they bear up, and not only live, but thrive. As

to the bugbear of foreign competition we admire the manly spirit shown by one large grower who said but the other day that, though it seemed to hit them hard at first or at times, yet it did them good in the end. It spurred them on to better cultivation, to the growth of more varied crops, and, not least, it helped to create so strong a penchant in the public taste for all kinds of garden products, that when the foreign supply ran short-and it did sometimes-the home growers reaped the benefit by greatly enhanced prices. But though this may seem to lead to the suggestion that farmers should take to market-gardening, there is much force even in this case in the old adage Ne sutor ultra crepidam, for nothing is easier than for the farmer accustomed as he is chiefly to exceedingly routine methods of culture and cropping to get out of his depth.

Our market-gardening friend said that he owed as much of his success in his trade to his regular frequenting of Covent Garden Market for thirty years, as he did to any thing. It is said to be a school of instruction, where men learn, not merely how to sell profitably, but also what to sell, to follow the public taste, and thus at home to keep pace with its requirements. Farmers are at a disadvantage as far as knowledge of this kind is concerned, and they, unless men of unusual energy and intelligence, are too apt to find that in market gardening there is no royal road to success. No man is born a gar-dener, he must learn his vocation, from his youth upward, and when he becomes a tradesman, cultivating perhaps 100 to 200 acres of highly-rented soil, he finds that besides being a good gardener he must be a good business

We do not write thus to check any one's honest aspirations, but it is well all should un derstand that success in market-gardening will be only commensurate with capacity.

- WALL TREES,-Almost universally there is a wondrous wealth of bloom upon Apricot trees this season, and it is rapidly expanding, so that the next few weeks will be critical ones for the future of our earliest and most enjoyable of wall fruits. We may, perchance, find the season to continue soft and favourable, and if so a grand crop of Apricots will be assured. March is, however, a treacherous month. It too often steals a "march" upon unwary gardeners, and ruins the prospects of their wall fruits. It will be as well, let the weather be as promising as it may, to be ready with some protection, for frosts come like thieves in the night. Peach and Nectarine trees are full of promise of bloom also, and generally all wall trees indicate a great floral show. If cold cutting east winds and keen dry frosts prevail, protection will be worth any trouble; but it will be but fair to the season to give it its due, should its mildness render a fruit crop easy and assured.

- AMARYLLIS AT HILLINGDON PLACE .- For several years past Mr. HENRY LITTLE has been a foremost cultivator of these, and he exhibits at the spring meetings at the Royal Botanic Society and at South Kensington. He has now a very fine collection occupying one of FOSTER & PEARSON'S frames, raised a few feet above the ground, and with one hot-water pipe all round level with the rims of the pots so as to give a gentle stimulus. The pots in which the Amaryllis are growing are plunged in a bed of cocoa-fibre up to the rims, and are now throwing up strong flowering-stems. They are not forced, but allowed to come on gently, and air is given on all suitable occasions. A more promising lot of plants can scarcely be imagined. But they do not include the whole of the collection, for in an intermediate-house there is an overflow both of Amaryllis and Orchids. Mr. LITTLE's tenure of Hillingdon Place being a little uncertain, he has to erect glass structures with some caution, or else more glass is needed to accommodate the many treasures gathered together at Hillingdon Place.

- A TEXAN PLAGUE-PLANT.-According to gentlemen who have recently come to this country from Texas, a plant of which they have brought specimens to Kew is fast becoming the terror of graziers. Unfortunately the said specimens were not in flower, but as far as can be judged from the long

silky pinnate leaves and the general aspect of the plant, it may be Astragalus Bigelowii; of course without flowers it is impossible to venture a positive opinion in such a case. The plant, whatever it is, is spreading rapidly from the south in a northerly direction. Great patches from half an acre to an acre in extent occur frequently, and, to render matters worse, cattle are very fond of it. As soon as they begin to feed on it, however, they lose flesh very rapidly, their eyesight is affected, and they soon die. A friend of the gentleman who furnished these details lost nine horses recently through their having fed on this plant, about which it would be desirable to have more information.

- COSTUS IGNEUS .- Under this name Mr. N. E. BROWN describes, in the Illustration Horticole (1884), tab. 511, a Zingiberaceous plant from Bahia, with erect stems, bearing at their extremities tufts of broadly oblong acute glabrous leaves, from amid which proceed the flattish oblong flowers, each about 2 inches in diameter, and consisting of two unequal flat roundish orange lobes.

- FRUIT AND FLORAL COMMITTEES. - We learn that the Syndical Chamber of Belgian Nurserymen has decided to institute monthly Floral and Fruit Committees, like those which have been found so useful at South Kensington.

CULTURE OF ALPINE PLANTS .- Our corre spondent, M. CORREVON, of Geneva, has been appointed Director of the "Jardin d'Acclimatation pour les Plantes Alpines," a garden established under the auspices of the Swiss Association for the protection of plants, and designed to promote the legitimate culture of these plants. By discouraging extermination by ruthless and ignorant collectors, and by securing an adequate supply by appropriate methods of collection, and specially by propagation by seed, the Director hopes to be able to gratify the taste for these plants without incurring the risk of destroying them. The establishment for the sale of seeds and the experimental garden will be in the immediate vicinity of the city, at the Plainpalais. M. CORREVON takes charge on April 1 next, and from what we have seen of his practical skill as a propagator, and from his clear insight into the requirements of this class of plants, as illustrated in his articles in these pages, the undertaking should prosper.

--- THE LATE MR. HENRY PARKER .- The will (dated February 16, 1883) of Mr. HENRY PARKER, late of the Centre Row, Covent Garden Market, who died on December 29 last, was proved on the 19th ult. by HENRY WILLIAM BRIDGMAN and JAMES WEBBER, the executors, the value of the personal estate amounting to upwards of £29,000. testator bequeaths £2000 each to the British and Foreign Bible Society, the Church Missionary Society, and the Religious Tract Society; £1000 each to the Church Pastoral Aid Society, Charing Cross Hospital, King's College Hospital, Brompton Hospital for Consumption and Diseases of the Chest, and the Brompton Hospital for Cancer; £500 each to the Young Men's Christian Association and the Covent Garden Lifeboat Fund; £1000 to the rector and churchwardens of the parish of St. Paul's, Covent Garden, the dividends to be distributed annually at Christmas in sums of not less than 5s. and not more than £1 among the thoroughly deserving poor of the said parish; and considerable legacies to his niece, nephews, executors, old friends, and old servants. The residue of his property he gives to his old and faithful servant THOMAS DAY.

- RHODODENDRONS AT MESSRS, R. B. LAIRD & Sons' WINTER GARDEN, EDINBURGH .- A visitor to this establishment during the winter or spring will invariably find some of these gorgeous plants in flower. A splendid plant of R. Falconeri, or rather a seedling raised from it, named Lady Balfour of Burleigh, is now in bloom; the plant is a large standard with the head entirely covered with immense trusses of remarkable size and beauty: also to be observed are fine plants of R. Nobleanum, of which the firm appear to have some very bril-liantly coloured examples. These are unsurpassed for forcing as winter decorative plants. There are also masses of R. præcox, very delicately tinted, looking charming amidst the Hyacinths, Tulips, Azaleas, &c., with which the stages of the Winter Garden are filled. There are also fine trusses of Rhododendron argenteum from their Pink Hill Nurseries, as well as those of jasminishorum, Taylori, Duchess of Edinburgh, and others.

—— NOTES ON ACACIAS,—When the Chrysanthemurins are over we do not possess any kinds of pure yellow flowers that add so much to the gay appearance of the cooservatory as the various kinds of Acacias. Classed usually as New Holland plants, they have suffered, but in a less degree, the neglect that has overtaken that interesting section, and it is possible that they, and some of the more heautiful of the other, may become again as much sought after as are now the more easily grown and ephemeral greenhouse herbs and anouals. If we have nothing equalling the brilliancy of a Telopea, a

racemes; A. Riceana, a sort with foliage similato the first, but without that peculiar mealiness on the
underside, and whose flowers are scentless. This is
a rapid and slender grower, and well suited for a
pillar or the roof of a conservatory. A grandiflora
has larger golden balls than either of the other two,
and undivided, Willow-like leaves; it is also somewhat later in opening, and is therefore good for succeeding those. A. Drummondii is one of the most
floriferous, a neat grower, but not naturally so, as we
see it usually grown and shown, and, in fact, looks
less beautiful when so tied-in and pinched and trained
into primness. A curiously leaved sort, called A.
platyptera, is worthy of more cultivation, as it is one
of the very earliest bloomers and is quite distinct in
appearance. The culture of the Acacia is not at all

dry state of the soil, that must be thoroughly soaked when it becomes too dry, and a night temperature from 40° to 45°, suits them admirably.

— GENTIANA WALUJEWI, Gartenflora, 1884, tab. 1140.—This is a tall-growing, herbaceous, perenial, with narrow, elliptic, glabrous leaves, and whitish tubular flowers, each about 1½ inch long, and aggregated in terminal clusters. The species is new, and was discovered by ALBERT REGEL in the mountains of Eastern Turkestan.

— PROPAGATING COMBRETUM PURPUREUM.

—It is possible that this gorgeous stove plant, which is so easily grown in an ordinary stove, has fallen Malmost out of general cultivation through the



FIG. 51.-VIEW IN THE KIBBLE CONSERVATORY, GLASGOW BOTANIC GARDEN. (SEE P. 269.)

Callistemon, a Metrosideros, or a Grevillea among greenhouse plants, excepting zonal Pelargoniums, we have no yellows in winter and spring exceeding the brightness of the Acacias. The Calccolaria cannot be had in bloom at that time. Azalea mollis, if it is yellow, is also mixed with pink, or some other red tint, which therefore detracts from its purity of hue. We have almost lost Azalea sinensis, and fortunately the ever-present Pelargoniums, Primulas, and Cineraira, cannot be made yellow, and so reliance is placed on the Geoistas to furnish the missing colour; but Geoistas are all alike, speaking generally, although G. speciosa is a great improvement on G. racemosa floribunda, and G. Atleeanus differs from all three; but the differences are at the best only minute, and oot noted by the laity at all. The Acacias that furnish early flowers are A. dealbata, a pretty leaved sort with deliciously aromatic-scented flowers in short

difficult to any one equal to growing an Azalea or a Camellia; two-thirds peat, one-third good sound loam, with a considerable admixture of clean silversand, a small portion of charcoal or burnt earth, may be mixed with the soil for these and most other species of New Holland plants. Over-potting and over-draining are two points not to be overlooked in Acacia growing, for frequent shiftings will make unwieldy plants that will not reward the grower with a good flower harvest; that is best attained by smallish pots and feeding during the most active period of growth with liquid-manure; and giving too many crocks means giving a great deal of water in spring and summer, and running the risk at the same time of causing the plants to suffer sometimes from the want of it. A few large concave pieces regularly disposed in one layer, with rough lumps or stiftings over these, will be found the best. In winter a moderately

difficulty experienced by gardeners in rooting cuttings of it. Every man likes to have a reserve plant or two of all his best plants, but if any particular one should prove itself not ameoable to his methods of increase, he would rather not be the possessor of it, as, in case of loss, he would not have the excuse that it was not of so much moment, he having duplicates in his stock. If an old plant he shaken out, and pieces of the root be cut from the stock 3 or 4 inches in length and as thick as a crow or a goose quill, and have short shoots of last year's wood grafted on them, precisely as is done with root-grafted Roses, he has a ready and almost certain method of increasing his stock. The root-pieces, after being attached, may be slightly clayed, and potted in sandy peat, in pots no larger than are required to hold them convenienty. These must be then placed in a close propagating case, furnished with bottom-heat, plung-

ing the pots up to the rim. Close attention must be given to airing and watering, and so soon as growth begins the plant must be moved from thence into a less close box for a tew more days, and afterwards into the stove pit, giving a shift as soon as the pot is filled with roots.

— RASPBERRY BAUMFORTH'S SEEDLING.—
Planters of Raspberries should not omit to obtain
this excellent sort, and when once they have given
it a fair trial they will plant it in quantity. It has
the character of being an excellent bearer, in good
seasons bringing a fair second crop of fruit to maturity.
The plant is vigorons, carries stont dark green foliage,
and large broad-pipped dark crimson fruit. It is
much valued on the strong loamy soils of Bucks.

- ANTS IN TRINIDAD .- British gardeners, who often complain, and not without reason, of the damage done by ants, may congratulate themselves to a certain extent after hearing what Mr. PRESTOE, in his recent Report on the Botanic Gardens, Trinidad, has to say concerning the ravages of these objectionable insects in the West Indies. "As locusts in North Africa, and rabbits in Australia," says Mr. PRESTOE, "are a national calamity for their destructiveness to herbage and corn crops, so are the parasol ants in this island for destructiveness to trees and shrubs of all kinds, particularly exotic ones." The labour of combating these ubiquitous pests is very heavy in Trinidad, as they occur in colonies of large area, and are composed of thousands of nests, extending over 1000 or 2000 square feet, The destruction of a colony some 50 feet over, employs four or five men ten to twelve days, according to the depth and nature of the strata. Where the use of boiling soap-water is impracticable sulphurous fumes are blown into each chamber, as it is opened by means of a machine with fan and tube. Care has to be observed to keep the ground clear of insects, otherwise the feet and legs of the workmen would be severely bitten. Mr. PRESTOE thinks that it is unlikely that the island will ever be free from these pests; for, though all within range may be destroyed, there is a continuous supply from without, impregnated females being brought in myriads to the shores on the Orinoco current. These are to be seen occasionally in the Gulf, floating in patches several inches thick, I to 2 feet wide, and many feet long. So far the habits and economy of these West Indian ants are only imperfectly understood, the best account of them known to Mr. PRESTOE occurs in BELT'S Naturalist in Nicaragua, a work which has been frequently mentioned in these columns. Mr. PRESTOE agrees with Mr. BELT, that the ants in question feed on "a kind of fungus, for growing which they obtain the leaves of certain trees or plants, when suitably dry, and apply them to the fungus mass for its sustenance Even in the neighbourhood of a and extension." small colony "no plant is secure from attack, and its leaves may disappear in a single night; for, the workers being in infinite number, could clear a large tree in a single night, each making but one journey.

ARDISIA JAPONICA is an interesting dwarf shrub with scented white flowers and scarlet berries about the size of those of the widely cultivated and deservedly popular Chinese A. crenata. Unlike this last-named species, however, A. japonica will flourish in a cool conservatory, and probably, if fairly tried, might succeed in the open air in many places in Britain. As a decorative berry-bearing plant for winter effects it can be successfully grown where its more tropical relative could not exist for lack of the increasing heat. A form with prettily variegated foliage is cultivated at Kew, and makes a pleasing pot-plant on the shelves in the large Temperate-house.

—— CAMELLIA M. RAYMOND LEMOINTER,— One of the P.cony-flowered race, with whitish petals, diminishing in size from without inwards, whitish, striped and veined with rose. When the flowers first expand the white predominates, but as the flowers get older the rosy tint suffuses the whole petals. It has been raised at Lille from C. speciosa, and is figured in the Illustration Horticols, t. 509 (1884).

— PERIFLOCA GRECA.—As a covering for a sunny wall or trellis this South European Asclepiad is thoroughly well adapted. It is remarkable for the rich velvety appearance of the conspicuous hairy brownish flowers; the folioge, too, is decidedly

graceful, and the plant is a vigorous and rapid grower, perfectly hardy in this country. The following paragraph, written by an evident admirer of this strange yet handseme plant, perhaps does no more than justice to it:—"One of the loveliest climbers that ever gave a leafy covering and a profuse floral serven to wall or trellis. Why it is not in every garden it is difficult to understand. We hear frequent complaints of how few wall-coverings we have; yet this, one of the hardiest and most floriferous of any, has been utterly neglected." The milky juice, in common with that of a good many members of the same natural order, is poisonous, and in the East is said to be used for the purpose of poisoning wolves.

—— IRIS FIMBRIATA.—It is close upon a century since this species was added to our collections, yet it is far less frequently met with than its merits deserve. Being a native of China it requires greenhouse treatment in wioter to flower it in perfection. The flowers are of a delicate pale lavender colour, with the bright yellow spot and radiating lines on the falls so frequent in this genus. The margins of all the segments, together with the stigmas, are beautifully fringed, giving the flowers an exquisitely attractive appearance, rivaling or even surpassing many Orchids, to which, moreover, the Iris is no distant relation. A large plant, with branching many-flowered stems, has been flowering for some time in house No. 5 at Kew, In gardening books it is generally recorded under the name of 1. chinensis, and there is a figure of it in the Botanical Magazine, t. 373.

— IRIS RETICULATA.— This kind is so lovely that it is well worth flowering in pots for the pleasure of its ornament in the greenhouse. Though it will probably not bear forcing, it comes in a little earlier if a few strong bulbs are potted and placed in a cold frame. With this treatment the colour is in no way deteriorated, and small pots with several flowers open at once are most effective. This has been tried in the Cambridge Botanic Garden, and the varieties would no doubt succeed equally well.

— ALLIUM NEAFOLITANUM.— Of the white-flowered kinds, this is probably the best, not only because of its superior beauty, but on account of the slight presence only of that unpleasant odour which many pretty allies of the Onion have the misfortune to possess. For this reason the flowers may be gathered with propriety for indoor enjoyment, and the pure white starry blooms meet with much admiration. It has been found pretty and good for pot culture at Cambridge.

-- MARKING GARDEN LABELS .-- In spite of the various ingenious adaptations of wood and metal, we do not seem to have got anything better, cheaper, and easier dealt with at short notice than zinc labels with an iron stem, such as were figured in the Gardeners' Chronicle, and those made of strips of lead to be stamped with letters or figures. Writing may be assumed to be not indelible. Let the makers of ink that is reputed to last as long as the metal say what they please, it does become obliterated, or at least to such a degree that the reading of the words, &c., becomes a work of difficulty. That being so, the next best method is that of stamping the letters or figures into the label by means of steel dies, which work is best done when the letters are arranged on the limbs of a pair of shears or pincers, eight or nine letters on each. Sometimes the whole alphabet is arranged on one pair, but then the letters furthest from the fulcrum can have but little force exerted on them, and the impression is therefore faint; but by having one-third of the alphabet on each, the jaws are not made needlessly long. The figures can be treated in similar fashion. As we know from experience loose dies are constantly getting mislaid, but pincers, being larger objects would be less likely to be missing when wanted. Under each die on the opposite limb a little boss or anvil is placed, upon which the label is held in making the impression, and the handles of the instrument being made of considerable length and strength, a great amount of pressure can be obtained, and which can be so regulated by the operator as will fit it for use on either lead or zinc,

—— EUPATORIUM ROSEUM,—This robust plant is a fine thing when seen planted in clumps or masses, and especially near water, which situation appears quite its proper habitat, as it will then grow from 5 to 6 feet high, and form an enormous Cauliflower-like head of dull rosy flowers. The flowering season is from August to September, when the flower-stalks begin to assume a shabby appearance, and may be finally cut down to the ground in October. It is well suited for parts of the pleasure grounds remote from the dwelling, and for the wild garden. It is propagated by division.

— FREESIA REFRACTA ALBA.—This flower, so useful for all kinds of bouquet purposes, where something white is desirable, is beginning to find its way into the florists' shops. The flowers are so neat, and so readily mounted, besides being produced in good quantity by the bulbs, that it is no wonder that its special merits have been noted by the growers for market. It is, as yet, in no way abundant, but a beginning has been made and the increasing of stock will go on apace.

— MARACOUJA.—Under this name we recognise our old acquaintance. Passiflora edulis, the fruit of this well known stove creeper being recently on sale in Covent Garden. The colour can hardly be called a pleasing one, it being black, with a grey bloom on it, but the perfume is delightful. The true Muraculas are species of Taesonia.

— Messrs, John Warner & Sons, of the Crescent Foundry, Cripplegate, who sent a large and valuable collection of their special manufactures, such as windmilla, steam pumps, water-wheels, garden engines, &c., to the Calcutta Exhibition, have, we hear, been awarded no fewer than three gold and ten silver medals,

— MR. GEORGE WILLIAMS is, we hear, leaving the service of the Earl of MEATH, Kilruddery Castle, Co. Wicklow, to commence busioess, at an early date, as a market-gardener, in the neighbourhood of Macclesfield, Cheshire.

— THE WEATHER,—General remarks on the temperature, rainfall, and duration of bright sunshine, for agricultural and sanitary purposes, during the week ending February 25, issued by the Meteorological Office, London:—The weather, with the exception of a few bright intervals, has been generally cloudy or dull, with frequent falls of rain. Thunder and lightning occurred in the west during the night of the 19th. The temperature has been about equal to the mean in "England, N.W.," and "Ireland, S.," but has continued from 1° to 3° above it elsewhere. The maxima were registered in most places on the 20th, and varied from 45° in "Scotland, N.," to 54° in most of the English districts and in "Ireland, S.," The minima, which were recorded on the 19th in most parts of Great Britain, on various dates in Ireland, and on the 24th in the north of Scotland, ranged from 25° in the "Midland Counties," to 35° in "Eogland, S.W.," and 28° in the "Channel Islands," The rainfall has been a little less than the mean in "Scotland, E.," "England, N.E.," and 18 the "Channel Islands," and about equal to it in "England, E.," but more in all other districts, the excess in Ireland being considerable, Bright sunshine shows an increase in duration in nearly all districts, the sexess in Ireland being considerable, Bright sunshine shows an increase in duration in nearly all districts, the sexess in Ireland being considerable, Bright sunshine shows an increase in duration in nearly all districts, the percentages of possible duration varying from 17 in "England, S.W.," to 35 in "Scotland, E.," and 38' in the Channel Islands, Depressions observed:—At the commencement of the period the barometer was highest over Scandinavia and the south-east of France, and lowest to the westward of our islands, In the former region the high-pressure area soon gave way, but in the latter it increased somewhat, and extended westwards. During the first few days a series of large depressions travelled northwards, outside our western and norther oass, causing strong sou

— GARDENING APPOINTMENTS. — Mr. A. GREGORY, late Foreman at Kilruddery Castle, Co. Wicklow, as Gardener to Mrs. Ergown, Oakland, Rathgar, Co. Dublin. — Mr. Chas. Fowell, late Foreman at the Duke of Graffon's, Euston Hall, as Gardener to Edward A. Ball, Esq., Roll's Park, Chigwell, Essex.

THE PROPAGATOR.

THE PROPAGATION AND CULTURE OF N.EGE-LIAS.—The following are the different methods of increasing Nægelias (corm-forming Gesneras):—1, from cuttings; 2, from leaves; 3, from corms; and 4, from seed. It is, perhaps, advisable at the outset to point out the necessity for the early propagation of those plants the cuttings of which form bulbs. If the plants are propagated early in the season, the young bulbs formed by the cuttings will have reached a stage of development by the winter that will sustain and support them under the many trying circumstances which that season brings in its train. But should this operation be delayed till late in the summer, the young bulbs, being undeveloped and weak, and therefore unable to resist the searching tests of winter, die almost to a bulb.

I. FROM CUTTINGS. -A large number of plants should be set aside for propagation and well tended till they are 6 or 8 inches in height. They must now be cut down to the first leaf above the pot, and made into cuttings. Commencing at the top of the plant, the first cutting should be made, which should four or more leaves attached to it; the next and following cuttings should be made so as to leave an inch and a-half of the stem below the leaves. The main stem of the latter kind of cuttings should be divided down the centre, thus making, as it were, two cuttings of one, and having on each piece a leaf and an eye. They are now ready to be placed into long thumbpots. The soil used should be composed of half yellow loam, one-third peat, and one-quarter sand, which should be sifted, or, better still, rubbed through a quarter of an inch sieve and well mixed together.

In potting the Nægelia cuttings, those having a single leaf attached to the stem must be tied to a small stick, to support them in an upright position.

Having watered the cuttings they should be placed in a cutting frame over a brisk bottom-heat. greatest care must now be exercised to see that the glasses" are taken from off the frame, for one hour in the night and in the morning, and under no circumstances must they be allowed to become dry. Also to protect them from the bright rays of the sun, sheets of newspaper should be placed over the "glasses" as a shade. As soon as the cuttings are rooted they should be removed from the frame and potted into large 60-sized pots, and repotted as necessity dictates.

2. FROM LEAVES .- The leaves selected for propagation must be well matured or "hard leaves they should be severed with a sharp knife and close to the leaf. On the under side of the leaf, the midrih and principal veins branching therefrom should be notched, the former in three or four places and the latter in one or two. The notches, however, must not be made so deep as to cut through the rib or vein. Some well drained pans should now be filled with soil, similar to that mentioned above. The soil, however, should be an inch higher in the centre and made to slope gradually downwards to the rim of the pan. The leaves must be spread upon and pegged loosely to the surface of the soil-the under part being next the soil. Having well watered the leaf cuttings with a fine-rose pot they must be placed in the cutting frame over a brisk bottom-heat.

So soon as the young plants have made their appearance, and grown to the height of half an inch, they must be pricked off, and placed each in a thimble-pot. Those in thimble-pots must be placed upon an open hottom-heat, i.e., without the protection of the case. As they grow larger in size and strength they must be potted into small 60's, and replaced upon the open bottom-heat, and repotted

until they attain the requisite size.

3. NÆGELIAS FROM CORMS .- A sufficient number well-drained pans should be filled with the scil previously mentioned, ready to receive the scale-like particles of the corms. A selection of well-ripened corms should be made, and commencing at the large end of each one, the scale-like particles of which it is composed should be separated one by one. These particles must be sown like seeds on the surface of the soil, with which they should be partly covered. pans must now be placed in the cutting-frame, and it s not until they have been in the frame for three or four days that they must be watered with a fine-rose

pot. When these particles have sprung up, and grown half an inch high, they must be potted, each into a thimble-pot, and replaced upon bottom heat until they are strong enough to be potted into small 60's. They must be repotted into larger pots as the plants increase in size and strength.

4. FROM SEED.-When large quantities of one, or, indeed, many sorts are required (without the necessity of being true to name), the better means is to obtain them from seed. They should be sown early in January, and in pans arranged like those for the corm-particles. A piece of glass must be placed over each pan to protect the seeds from the constant dripping of water from the roof—the whole of the pans should be placed upon a warm shelf. When the seedlings have grown a quarter of an inch in height they must be pricked off and potted into thimble-pots and replaced upon a brisk bottom-heat. As the plants grow larger and stronger so they must be potted into larger pots and replaced upon the bottom-

HYBRID NÆGELIAS.—Seeing that the seed plays so important a part in the multiplication of Nægelias, it will be well to say a few words upon hybridisation. If a strain on one particular variety is required the plants of that variety should be separated, and each plant fertilised with its own pollen, and care taken to prevent any other reaching the pistil.

Only the largest flowers of the plants should be fertilised, and the remainder removed in order that the whole of the strength and nourishment may be concentrated in the former. But should new varieties be our object a selection should he made of two or more distinct ones, such as Mrs. Fox Strangways, zebrina splendens, and each one may be crossed with the other, while observing the same directions as mentioned above. The plants must be fertilised three days in succession, and it is a fact well worthy to be remembered that the best time for effecting this operation is between the hours of 12 and 3. plants so fertilised must be removed and placed in a warm airy house and on a front platform or shelf, where they will be safe from the destructive effect of the syringe. Here they may be allowed to remain until the seed is tipe.

THE CULTURE OF NÆGELIAS.-The old corms, or bulbs, should be potted in small 60-pots, in soil composed of half yellow loam, one-third leaf-mould, and a quarter river sand, and they must be started into growth early in April. The pots must be placed on a bottom-heat, and when the bulbs have thrown up shoots and grown to a height of 4 or 5 inches, they must be potted each in a 48 sized pot, or if it is more convenient, three can be placed in a 32-pot, in such positions as to form the angles of a triangle. They must be replaced on bottom-heat, where they must remain until they begin to show signs of flowering, At this period they may be removed to a platform in an airy, warm house, till they bloom, but so soon as the flowers begin to open they should be removed to the conservatory or greenhouse. Negelias are very useful for indoor decoration. The following will be found to be good and distinct :- N. cinnabarina, exoniensis, fulgida, bicolor, Hon. Mrs. Fox Strangways, Leopard, Mont Blanc, refulgens, zebrina splendens, T. O,

A PLEA FOR BRITISH FERNS.

As a student for some years past of our native British Ferns, it becomes more and more a matter of surprise to me that they should receive so little attention, and that the culture, especially of the numberless beautiful departures from the normal types, should be limited to so very few persons that, to the hest of my belief, the collections worthy of the name around London might be told upon the fingers. This lack of general interest is sufficiently evidenced by the fact that, comparatively speaking, hardly any of the nurserymen in the country either keep a stock or know anything worth mentioning about them, the result being that at the horticultural and floral shows these lovely plants are all but utterly ignored, though exotic Ferns of considerably less attractiveness are exhibited in profusion. Here, however, it may be argued that the lack of demand justifies their absence, though I doubt the logic; we will, therefore, go outside this aspect of the case and look to our national botanical collection at Kew for a decent display of this most interesting branch of our native flora; but

here again we are doomed to disappointment, for although a few specimens may be found scattered about amongst the exotics in the Temperate-house, and a few others are discoverable in the rockeries, yet every Fern lover who has seen it will agree with me in stigmatising the collection as unworthy of the nation, the comparatively few forms exhibited being, so far as culture is concerned, nearly all of the shabbiest possible description compatible with existence, while hosts of the most beautiful and striking varieties are altogether unrepresented, and even the normal forms betray by their position and treatment an absence of that knowledge and careful supervision which we are certainly entitled to expect in such a place as Kew.

That in our national collection of plants our native Ferns should be thus treated is a matter of regret to all who know their capabilities, especially when one calls to mind their facility of culture on the one hand, and on the other the wonderful delicacy, beauty, and singularity of such forms as

Asplenum trichomanes cristatum

tichomanes incisum
Athytium Filx-formina var.
Vetarine
A. 1-f. var. plumasum, Horsvar. plumasum, Ax

var. calathrix

var. calathrix

var. trizeline

cotymbiferum, James

cotymbiferum, James

taste poeudo-magustata

var. procidadon

vernonine

Scolopeedrium vulcare erispum

Towkin var.

provincia v , corymbiferum, James Lastrea pseudo-mas ciistata pseudo-mas ciist

-and hundreds of others which space precludes me from naming, all of which are as hardy as the normal types from which they sprang, and, notwithstanding their superior beauty, would be as easy of culture in thousands of gloomy nooks in our crowded cities where now nothing green gladdens the cye because flowers will not grow, and the people are ignorant of the very existence of these plumy gems and worthy substitutes.

Last summer, in the Zoological Gardens at Clifton, I had the pleasure of inspecting a magnificent collection of some hundreds of the best varieties of our native Ferns ranged for a long distance by the side of the public path in representative groups of each These were duly protected from the wind by shrubberies, and presented at once a most delightscene and a splendid field for study of the curious and the beautiful in their many extraordinary

departures from the normal forms.
Here, however, in London, I know of no such public collection, though I believe Colonel Jones, to whom Clifton is indebted for the plants there dis-played, offered a similar collection to Kew; but why, I ask, should we not have a fair representative gathering of the most marked forms, well grown and shown to advantage, so that the public at large might learn the capacity for varied beauty with which Nature has endowed the Ferns of our native country, of which at present the majority of people only know the existence by seeing a few uninviting dried or bedraggled specimens in the hands of street hawkers, or bundled up like rubbish heaps in the corner of some nurseryman's shop, whose windows, it may be, are monopolised by exotic Ferns, many of less beauty, and nearly all of more difficult culture? In our parks there are scores of shady nooks and corners all ready to hand where our British Ferns, even the most delicate varieties, would be at home, and where a splendid collection might be located and kept up with a title of the expense and labour lavished upon row after row of formal carpet-hedding designs which, to my mind, in most cases mar rather than adorn the prospect, owing to their utter artificiality and lack of harmony

with their surroundings.

That our national collection of Ferns should be a That our national collection of Ferns should be a complete one is, I am fully aware, quite out of the question, new varieties continually being raised under culture or found wild, so that the known forms number many thousands (Mr. G. B. Wollaston, for instance, has some 3000 or more); still I venture to think that adequate room and proper accommodation should be afforded for the most marked and typical variations and especially for sports found in a wild state, since these undoubtedly should rank among our native plants, whatever objections botanists may urge against what they are sometimes pleased to call "mere garden varieties." C. T. Druery.

NOTES FROM SWANLEY.

As might be expected, nothing could look better than did Messrs, Cannell's houseful of Cinerarias, the richness of the colours, the size of the blooms, and the universal regularity of their markings being quite remarkable. Many are true seedlings, and others the produce hy offsets of the pick of former certificated hybrids, and the plants having been assorted and arranged in hatches, the effect of a houseful, seen from one end, was unrivalled. Of course, the sorts March Past and Victory were in considerable quantities. Of scarlet Pelargoniums there was not so much to be seen, as regards numbers, in bloom, the flowers being kept constantly cut for safe purposes, and the plants undergoing mutilation for the purposes of propagation. Remarkable for hrightness were Mitis, a single-flowered scarlet; Miss Hamilton, and Kate Farmer. An extra good sort for the winter is Mr. Bruuning, and another, very fine in its way, is the double zonal, Jules, which should he avoided for that purpose as it is found to be rather shy at that season. A fine hybrid nosegay that was flowering grandly is Jean Hill, a plant carrying extra large trusses of deep pink flowers in great numbers; these are elevated above the foliage in true nosegay style: this and Dr. Octon should make capital summer bedding kinds.

With an admiring look at a glowing scarlet with enormous pips, named Kate Greenaway, we will take our departure hence and view the choice collection of Cyclamens which is being assiduously collected and raised here. The stock fills two long houses—one holding the young plants which are intended for blooming next season, and the other the blooming plants. Although we miss the fine masses ot colour and the well bloomed plants, such as Messrs, Veitch & Sons, Mr. Wiggins, and others exhibited at the last meeting of the Royal Horticultural Society, still it is evident we have but to await the results of another season to see the energetic and indefatigable proprietor of the Home for Flowers well up to the front rank as a Cyclamen grower. The stock contains all the usual forms and markings prevailing in the C. persicum giganteum breed, and is marked by the presence also of a few pleasingly blotched varieties that are sure to be admired if they are faithfully reproduced in the future stock of plants.

The flower of the place is undoubtedly the Primula sioensis, and these are now at their best, and will so continue until the prevalence of bright weather dulis their colours. Admirable as are the older forms of pure double white for effective decorative worth, the palm must go to the coloured strains of single flowered varieties and to Gilbert's double hybrids. There were several long houses filled with these, chiefly one-year-old plants, although in one house were some masses of flower seen on two-year-old plants, standing pyramids of bloom 2 feet high. We noticed a very fine white single sort, named The Queeo, prettily fringed and yellow eyed; Marquis of Lorne, an equally good red (this sort and a good flesh-pink named rightly Delicata had the admired dark bronzy-green Fern leaves; indeed, many of the race possess this desideratum); Swanley Purple, White, and Red are excellent colours and very profuse.

The old double white variety is much improved on, as is visible in a dense or opaque white form of the flower, possessing an additional advantage in the heavily fringed margin. Of the coloured double flowers Mr. Gilbert's varieties were to be seen in very nicely grown examples, the best being Mrs. Laxton, white; Marchiocess of Exeter, Mrs. Crabb, the very large white Princess of Wales, and Earl Beaconsfield. One of Hillier's varieties, called Anne Hillier, a flesh coloured sort of a pleasing shade, was deserving of mention.

Amongst the innumerable plants to be found here the visitor is sure to alight on something old that is again to be taken in hand and reproduced for our pleasure, and amongst these may be mentioned the varieties of Polyanthus, of which Mr. Cannell hoasts he has all those known in English gardens, and if we may judge of the correctness of this statement by the quantity of ground covered with labelled kinds it is very possibly correct. Anything new in winter-hlooming Begonias is always welcomed, and doubly so when it is a very free-flowering, compact-growing plant like B. Carrieri. There are many pink and scarlet winter-flowering Begonias, but a good white was unknown. B. Dregei is poor beside it.

Home Gorrespondence.

Azara microphylla.—I am much surprised that in your notice of the somewhat inconspicuous blossom of the above-named graceful and ornamental hardy shrub you make no mention whatever of the delicious perfume which they exhale, which almost exactly resembles that of Vanille and which I consider a great additional recommendation. My large specimen is now covered with its small golden flowers undereeath almost every spray and branchlet, and quite perfumes the air all around it for some distance from the shrub. With me this shrub has never been the least injured even by the severest winters we have had from 1879 to 1881. W. E. Gumbleton.

Prolification in Sciadopitys.—We have previously alluded to the peculiarities presented by some native-grown cones of Sciadopitys(see p. 112, vol. xvii.,



FIG 52.- PROLIFEROUS LEAF OF SCIADOPITYS.



FIG. 53.-PROLIFEROUS CONE OF SCIADOPITYS.

1882), and now take the opportunity kindly afforded us by M. Carrière of representing a small cone grown in France, and affected in the same manner as that described by us previously (fig. 53). We also take the opportunity of figuring one leaf, if leaf it is to be called, which not only divides, but bears a bud and whorl of leaves in the fork (fig. 52). This is copied from a larger illustration by M. Carrière in the Revue Horticole.

Protecting Plants from Frost 200 Years Ago.—Eaclosed are some extracts of letters from Sir Hans Sloane to Mr. Jno. Ray on the above subject, written 200 years ago; they are taken from some MSS. which came into the hands of Nr. J. D. Enys. Mr. Enys thought that many of your readers, as well as myself, would be interested to know the beginning of heating greenhouses, out of which the various systems have grown, and has kindly handed them to me to send to you. Henry Mills, Enys, Penrhyn, Cornwall.

"London, Nov. 15, 1684.—Mr. Watts, having a new contrivance (att least in this countrey), viz., he makes under the floor of his greenhouse a great fire-place, with

grate, ash-hole, &c.; and conveight the warmth through the whole house, by the help of tunnell, see that be hopes, by the help of weather-glasses within, to bring or keep the air at what degree of warmth be pleases, letting in upon occasion the outward air by the windows. He thinks to make, by this means, ane artificial spring, sumer, winter, &c., of which I something doubt but in that matter experience must be the only judge."

"London, Dec. 20, 1684.—Yesterday I was att Chelsey garden to see how the plants were preserved there this cold weather. I found that in the day time they putt no fire into their furnaces, and that in the night they not only put in some fire but cover the windowes where they stand pitcht-canvasse, taking this of and opening them as much as the air or wind permitt."

"London, March 7, 1685.—I was the other day att Chelsey, and find that the artificys used by Mr. Watt have been very effectuall for the preservation of his plants; insomuch that this severe enough winter has scarce killed any off his fine plants."

Ribled any off his fine plants."

[To the above interesting communication we add the following from Dr. Semple's revised edition (1878) of Field's Memoirs of the Botanic Garden at Chelsea:—

"In the month of January of this year [1680] Mr. John Watts, a member of the Society, and one whose name has been mentioned as a contributor to the recetion of the wall, was appointed to have the care and management of the garden at £50 per anound, besides the allowance of one or two labourers; and in the following year a greenhouse, or stove, was erected in the garden at an estimated expense of £138. It was situated in the lower part of the ground, not far distant from the river," and was doubtless the house in which Watts carried out his experiments in geothermal heating. Both Evelyn and Ray mention this, and the latter speaks of a Tea-shrub as cultivated there. The Romans, teste Martial, had forcing-houses of glass (specularia), but in this country it was not till the reigo of Charles II, that such structures were erected. Ed.]

Choisya ternata,—We have the pleasure to enclose a few blooms of Choisya ternata. We find that this most fragrant plant flowers at once if placed in a temperature of 55° to 60°. The flowers sent were brought on in an intermediate-house, and then taken into an ordinary cool-house. We took the plants from the cold frames the first week of February, so that it has opened very quickly. The flowers are from plants grown here, plunged out in the summer. We find it sets buds as freely as an Azalea. We have had a nice stock of this plant for the past five years, and deem it worthy of very extended culture, and it could, we think, be had in bloom from Christmas to May without difficulty. We notice the wood when cut has a very pungent balsamic odour. Robert P. Ker & Sons, Liverpool.

cut has a very pungent balsamic odour. Robert P. Ker & Sons, Liverpool.

Early Potato Planting,—There is a weak point about Mr. Merritt's plan of planting Potatos early as described last week. It is, that should, as is so often the case, a heavy hailstorm come, the hulk of which would fall into the furrow on in which the tubers are planted, the soil would not only be heavily saturated with moisture, but it would be made excessively cold, and if followed by a sharp frost at night the thinly-covered tubers could hardly escape serious injury. Or course, the season may prove so kind as to present no dangers to early-planted Potatos, but, agaio, it may be quite the reverse. Those who are troubled with a sticky soil would, apart from frost, find the furrows saturated with water, that it would bake, and become excessively hard and tenacious. Of course, in sandy or porous soils no such harm may result, but those who know little of clay soils are hardly qualified to expatiate upon the merits of any system of culture in which they are concerned. I have often planted Potatosin furrows after winter ridging, but invariably have first dug the furrows deeply with a fork, then drawn a shallow drill with a hoe, and, having laid in the tubers, have forked the loose soil from the ridges or 5 inches. In this way the sets are protected by a ridge of soil, and are not exposed to daoger from flooding or late frosts. Just before the tops push through arake run roughly over the ridges leaves an even surface, through which the shoots come with ease and regularity. Well-prepared sets planted thus towards the end of March are safer, and seldom less early in cropping, than are those planted in February. Only a very careless grower would permit his seed stock to get into the matted state described by Mr. Merritt. As to his recommendation of huntr refuse and vegetable ash as dressing for Potatos that I cordially endorse. It consists largely of phosphates and potash, and these are among the most valuable elements in any Potato manuer. A. D.

and these are among the most valuable elements to any Potato manure. A. D.

Mr. Merritt's remarks (at page 250) on this subject are worthy of attention by practitioners who are situate on light soils, but they are scarcely suitable for those living on the stiffer soils of the country, which are certainly the commoner. He speaks probably having in view the well cultivated and almost artificial soils of vegetable gardens of long standing, and where furrow planting has its advantages, or

where, at least, the evils are counterbalanced by them. In heavy land the furrows are the wettest spots, collecting as they do nearly all that falls on the two sides of the ridges, and in consequence the land is coldest there, and ungenial to Potatos or any other vegetable. The warmest and driest place would be on the ridge itself. For my part, I much prefer planting on ground that has been dug as early as he states and laid up roughly. This land will be in fine condition in early spring for this or any other crop, and will not have wet places alternating with dry ones, as ridged ground always has. Having planted in a variety of methods, I am constrained to give the preference to planting on the flat, and not in drills or by dibbling, but by simply pulling out a quite shallow basin of 3 or 4, inches in depth with the end of a broad hoe. This must be done by the side of a line, so as to have regular work, and the set should be covered by another haud following, who collects the dry soil from the surface around the shallow basin thus made. You thus get a shallow planted set dry son from the surface around the standow basine thus made. You thus get a shallow planted set covered with dry soil, and so far frost-resisting, and practically standing in the natural position for a Potato, on the surface of the ground. The act of covering it over forms a small mound, which is added to the first the material districts. Potato, on the surface of the ground. The act of covering it over torms a small monal, which is added to at each further moulding up, thereby aiding to drain all excessive moisture away from the plant. Mr. Jensen's experiments and trails with Potatos seem to have settled the fact that the disease propagates itself fastest on plants surrounded by a moist, warm air, just such as exists between closely planted Potatos. Many growers recommend to to 12 inches between the sets, and 2 feet between the rows for early sorts and medium growers. I think this is much too close, for if the disease should appear everything in proper order to assist its widest development in the event of warm and showery weather setting in. Detailing my own experience will be of more advantage than advising any certain method. I had been only partially converted to thin planting of the Potato although I had long before given up thick seeding, as regarded all other crops, but observing the extraordinary field crops lifted by some Croatian farmers from out of widely planted mounds (I think these were 4 feet apart), I resolved to give it a trial in vastly better land, and not at 4 but at 2½ feet apart each way. The sort was a good prolific one, of excellent table qualities, named Prinz Friedrich Carl, not unlike a Regent in appearance. These were set in the way indicated above, and the crop grew so enormously both at root and top, that some difficulty was found in getting earth to mould-up with, and I repented not having put the sets at the farmers' distances apart. Other sorts planted in rows much thicker together produced an inferior crop of very much smaller Potatos from an anderior crop of very much smaller Potatos from an angeus abace of land, and were affected with the displanted in rows much thicker together produced an inferior crop of very much smaller Potatos from an equal space of land, and were affected with the disease to a very great extent, while the wider planted ones, although late in ripening, almost escaped the attack of Peroosspora. After that 1 always planted wide, according to the growth of the haulm, and so effected a saving in sets; the crop was freer from disease owing to the complete airiness around each mound, and perhaps because the spores fell in the spaces between the mounds where there were no roots to infert. M

Lilium giganteum.—An example of the most successful cultivation of this plant with which I am acquainted occurs at Brynmeirig, near the Penrhyn state quarry. Last season there were over half-a-dozeo plants of this majestic Lily in flower, several of which attained a height of about 10 feet. They are planted in the recesses along the outskirts of a Rhododendron that he be able to the afforded being evidently conin the recesses along the outskirts of a Rhododendron bed, the shelter thus afforded being evidently conducive to the most luxuriant growth. The soil is good stiff loam, resting at no great depth on shaley rock, and though the position is well sheltered on all sides by tall trees, still the aspect must be considered as east. The surface of the soil, from having been undisturbed for years, has become quite hard, indeed so much so, that I have often been surprised at the healthy, strong nature of the plants, more especially on considering the care and attention that are usually lavished on this king of Lilies. The Rhododendrons are from 4 to 5 feet high, and their dark green surface is certainly a most appropriate contrast to the light shining green of the Lily. A. D. Webster.

to infect. M.

Hepaticas.—I have grown these for years, but so far I have not been fortunate enough to have found a seedling growing either on or around the plants. Perhaps it is owing to their flowering here during an unfavourable time to the settling of their seed that we do not find young plants, or seeds, if formed, do not mature. Perhaps any one growing the single varieties under glass, as in a cold frame, might be more successful in this direction. Some writers were quite enthusiastic about these plants, but one can hardly understand this state of feeling in connection with such modest wee things as Hepaticas are. But it must in justice be said that this was during the hardy plant "revival" of a few years ago, when many things were said and written that will not bear the

reflection of to-day. Having grown the plants during a long period, and noted the practice of others as well, I am convinced there is nothing like letting the plants alone when once established in good soil. By good soil I mean that which is naturally fertile, has been well cultivated, especially deeply trenched and abundantly manured. If you have this you may grow almost any herbaceous plant if good soil is supple, mented by warm shelter from buildings and treesther Frimula tribe will thrive under such conditions it the craze of perpetually lifting and dividing is not indulged except at very long intervals. To keep the Hepatica in health, when there is some likelihood of the soil having become poor, nothing is better than slight coverings of decayed leaf-mould or old Mushroom beds; this should be fixely screeced and given at any time during autumn or winter. M. at any time during autumn or winter. M.

Slugs and Dry-rot, — The following curious passage occurs in Dr. J. G. Jeffrey's British Conchology, vol. i, p. 130, under Limax:—"They (slugs) are, however, sometimes useful in eating that kind of fungus which causes dry-rot, and another kind which infests cellars and makes choice port wine what is termed 'corked." This is curious, if correct. One would hardly think the latter fungus confined its attack to "choice" port. W. G. S.

New Inventions.—We have received from the Collapsible Packing Case and Parcels Post Box Company, Byfleet, Weybridge, a sample of a tin box made

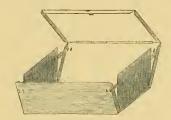


FIG. 54 .- COLLAPSIBLE PARCELS POST BOX

by them, and intended for the use of horticulturists in sending things through the post. The one advan-tage that we can see in a box that collapses is that great numbers of them can be sent in the collapsed

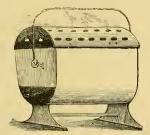


FIG. 55 .- ELCOME'S IMPROVED FUMIGATOR.

state in a small cubical space; we have also noticed that such boxes arrive with plants and blooms in them, and which, owing to the box having collapsed at the wrong time, were reduced to the consistency of jelly. This would seem to indicate that post officials jelly. This would seem to indicate that post officials are not sufficiently careful with things collapsible, or that the boxes, which are of tin, require some slight strengthening of their parts. We give an illustration (fig. 54), which is one-fifth the size of the original. Fumigator.—Mr. Elcome, 4. Chestnut Villas, Woodland Road, Upper Norwood, sends us one of his improved fumigators for horticultural purposes (see fig. 55). It is strongly made of stout sheet-iron, has a cover perforated with holes, to allow the smoke readily to escape, and a stout bow handle wherewith to carry it. The fumigator can also be used to burn charcoal or coke if necessary, and is not expensive. Practical men who have used it speak highly of its merits, not the least of which is the short time it takes to fill a large house.

Potato Disease.— I have forwarded to you a sample of Veitch's Improved Ashleaf Kidney Potato, and should be glad of some information as to the cause of the disease. I have grown about 2 acres of different varieties of Potatos for the last ten years;

the soil is sandy, and I have sown 6 cwt. of guano per acre in the drills before planting the Potatos, in addition to a very little farmyard manure. The produce was very satisfactory up to the last two seasons. The Kidney varieties are affected more than the round, and they all appear sound at lifting time, in fact it does not show itself until after Christmas. About one fourth of the Kidneys are affected. T. S., Chertsey. [The Potatos sent by "T. S." have been destroyed by the well-known Potato fungus, Peronospora infestaos. The case is a very bad one, showing large livid patches and cracks outside the tubers, the interior being full of brown corroded and putrescent material. The case is also an instructive one, as the material. The case is also an instructive one, as the tubers were grown in sandy soil, and showed no traces of disease at the time of lifting; the putrescence commencing from the inside towards the outside of the tubers after Christmas. "T. S." does not say whether the foliage of the plants was diseased in the autumn, but no doubt it was. There is no help forthcoming in such a case—the Polatos are dead and rotten. Now we venture to say that "T. S." case is not an exception, but a good example of the rule that in a very large number of cases the disease starts from the interior of the Polato tuber, and finds its way to the outside, often after storing and during the winter and spring months. At the time of lifting its by no means uncommon, on cutting open an apparently sound Potato, to find a small disease patch in the middle. Therefore published results of the apparently sound condition of Polato tubers at the time of lifting go for very little; we want to know the condition of the tubers in the following spring. Such of the readers of the Gardeners' Chronicle as have read the correspondence on the sand filtration of spores will have observed that Mr. Plowright and Mr. Jensen object to my experiments with dry sand. When the experiments were repeated with wet sand another correspondent, "A. D.," p. 58, wrote that, "Really, the result (i.e., non-filtration) was just what might have been expected." If this is not blowing hot and cold, I don't know what is. "A. D." concludes his letter with the following poetical remark, "Tis true, many Potato tubers show disease in the flesh, but not in the skin, but how it got here there is no evidence to show," for if it is certain it did not get there through the skin and rootlets it must have desecnded by the seen in the flesh, but not in the skin, but how it got here there is no evidence to show," We think, seen in the flesh, but not in the skin, but how it got here there is no evidence to show," We think, seen in the flesh, but not in the skin, but how it got here there is n material. The case is also an instructive one, as the tubers were grown in sandy soil, and showed no traces of disease at the time of lifting: the putrescence

Planting in Rubble.—I have just been examining a rather long belt of common Laurel that was planted five years ago, to shut out from view a rather unsightly railway embankment. The outer portion of this embankment was entirely composed of rubble, such as stones, fragments of rock, and slate refuse, and well do I remember the difficulty we had in procuring sufficient soil to cover the roots of the plants. The pits were opened of a large size, the plants inserted, and a spadeful or two of soil scraped up from wherever it could best be procured for placing next the roots, after which the rubble was filled in, and the simple process of planting completed. The results are almost incredible, for the plants have not only grown of a large size, but appear in such vigorous health, that one cannot doubt but they have got a congenial home and suitable composition in which to grow. The above is written for the sole object of pointing out that evergreens (at least Laurels) will not only live but thrive amongst rubble in its various forms; and as in many cases the planting of such unsightly heaps is of the greatest importance, it is well to know that this can be performed with a great amount of success. A. D. Webster. Planting in Rubble.-I have just been examin-

FRUIT NOTES.

PEAR CHARLES FRÉDERIX.-One of Van Mons seedlings. A medium-sized fruit, of regular pyriform shape, with a short stalk and yellow rind, flushed with russet, and with numerous small brownish specks; flesh white, melting, aromatic. S Bulletin d'Arboriculture, February. Season, October.

APPLE HEREFORDSHIRE BEEFING .- A mediumsized Apple of depressed globular shape, deeply unbilicate at hoth ends, with a short stalk and a large eye. The rind is of a rich crimson, streaked and spotted with yellow. The flesh white, acid. It is a cooking Apple for midwinter use. The tree is

vigorous and productive. Mr. Barron, from whose regards and productive. Air, Barron, from whose account in the February number of the Florist and Fomologist we cite this account, says, "The Apple dries well in the oven, like the Norfolk Beefing," and that "it dries up when bruised instead of rotting as most apples do." It is figured at tab, 604 of the periodical paned. periodical named.

ALPINE PLANTS.

THE RANUNCULUS OF THE ALPS .- The genus Ranunculus furnishes to lovers of alpine plants and cultivators of rock plants a certain number of very interesting species, which are mostly free-flowering and easy to grow. The plants may be divided, from the cultivator's point of view, into two sets; the first contains the species found in turly soils, pasturages, and on more or less fertile land. These are characterised by the name "terrestrial." The other set, much less numerous, comprises the rockgrowing species, which require special treatment, and

which are more difficult to grow.

In the first category, which is much the most important for us, there is a series of white or rosecoloured flowered plants which grow in the higher regions; and there is a second group, the flowers of which are yellow, and which grow in the rocky and sub-alpine zones. The yellow flowered species are very easy to cultivate, and flower in our gardens, le the cultivation of species living in the higher regions requires more care. For our present purpose the plants may be thus grouped :- Ist, alpine and sub-alpine species (yellow-flowered Ranunculi); 2d, meadow species (white-flowered).

R. Thora, L. This is found in the Alps, the Jura, the Apennines, and the Carpathians. It possesses this peculiarity, that it bears on the centre of its stalk a circlet of orbicular leaves, which surround the stem like a collar. It flowers in May and June.

R. hybridus, from the eastern Alps. This species is considered by Koch as being merely a variety of R. Thora, L. The foliage is deeply cut, oblique, and smaller than that of the preceding species.

R. pygmæus, Wahl., a native of the eastern Alps, Norway, and of Lapland. This is an exceedingly small species, absolutely dwarf, and resembling Potentilla minima. It has never been in my possession, so that I cannot give any directions for its cultivation. Probably it is not difficult to manage, and would be content with the same treatment as its yellow flowered companions.

R. Villarsii, DC., a native of the Alps, of Savoy, and Dauphiny. It is a very beautiful species, with large brilliant yellow coloured flowers and pubescent foliage. It thrives in peat and drought, and prefers a rich but stony soil. It flowers in May and June.

R. montanus. Willd., is found wild in the Alps and Pyrenees. This is one of the most beautiful of our alpine Ranunculi. Its large brilliant flower enlivens the dry and calcareous slopes of the pasturages during a great part of the summer. It remains in bloom for a long time under cultivation.

R. lanuginosus, L., is common in all the mountains of Europe. It is a good-sized plant, with a whitish woolly foliage and bright yellow flowers. May and June. This last species has the objectionable property of spreading too much, and grows to a large size when planted in the rockery.

The different Ranunculi that I have just enumerated grow very well in ordinary soil. They like exposure to the sun, and a fertile soil, if possible, and are easily reproduced by means of seed. The seeds must be sown immediately after they are gathered; some species are two years germinating.

The white-flowered species, which are found in meadows, and grow in a deep rich soil, are the following :-

following:—

R. raticfolius, L. This grows in the snowy regions of the Grisons and Valais Alps. It is found on Mont Cenis, and in the eastern Alps. Its elegant foliage reminds one of that of the Rue. The flowers are white, rather large, spotted with orange at the base. It blooms in June and July, in the ground.

R. pyreneus, L., occurs in the meadows in certain parts of the Alps and Pyreness. This species has this peculiarity, that the stem is erect, with entire linear leaves, and the corolla of the flower is very

this peculiarity, that the stem is erect, with entire linear leaves, and the corolla of the flower is very caducous, and falls on the least blow. Flowers small, expanding in June under cultivation.

R. Seguieri, Vill. This grows on the Alps of Tyrol and Carinthia. This free-flowering species, the corolla of which is snowy-white, contrasting admirably with the bright green of the foliage, expands its flowers in June and July.

R. alfestris, L., grows throughout the Alpine chain and in the Carpathians. It is one of the most graceful of alpine plants; its corolla is of a crystalline-white, with a sheaf of bright yellow stamens in the centre. It flowers under cultivation in spring, and

centre. It flowers under currents and again in the autumn. It prefers a calcareous soil. R. Traunfelheri, Hoppe, a native of the eastern Alps, is a rare and prefty plant of low stature; its leaves are a dark shining green colour, deeply cut and digitate. It prefers a calcareous sandy soil, and flowers under cultivation in May and June.

R. amplexicallis, L., from the southern Alps, is one of the prettiest Ranuncull. The flower is fine, large, with broad petals. It is a rare plant, and one I formerly cultivated with success, but which I lost

through excessive damp.

R. crenatus, Waldst. and Kit., a native of the southern Alps of Austria and the mountains of Hungary. It bears a certain resemblance to R. alpestris, from which species it differs in its rounded foliage, which is cretated at the margin. It flowers in June

and July.

E. bilobus, Bertol., from southern Tyrol. This is a smaller plant than the preceding species, from which it differs also in the foliage, and in the two-lobed

petals of the flower.

Among the white-flowered Ranunculi there are also the two following species, natives of wooded mountainous regions—R. aconitifolius, L., and R. platanifolius, L. Their branching habit renders them untamous regions—A. acominolins, L., and K. piatani-folius, L. Their branching habit renders them un-suitable for cultivation on the rockery, where they grow too lavariantly, and where they become trouble-some. They may be cultivated successfully on a wild bank in the corner of a garden. They are easily re-produced by seeds without trouble.

As to the rock-growing species, there are but two in our Alps; these are R. parnassifolius, L., and R. glacialis, L. The first of these species is only met with in the crumbling rocks of the Alps or Pyrences, with in the crumbling rocks of the Alps or Pyrenees, while the second is peculiar to the icy summits of our own granitic and slatey Alps. Both are accustomed to a moist soil and a moisture-laden atmosphere. I have succeeded in making them flower without trouble by giving them a well-drained soil from which the water on accuracy and with the water on accuracy and with the water or accuracy and with the water of the property and which is a single property and the propert the water can escape easily, and which is mixed with stones and sand. A little leaf-mould or peat is suffistones and sand. A little leat-mould or peat is sufficient, but they require plenty of water, and as much light as possible when they begin to grow. What kills them is stagnant moisture. They must have plenty of air, light, and moisture. They flower very irregularly under cultivation. R, parnassifolius is easy to bloom, but R, glacialis is more difficult—it rarely retains the presendant of the state water. rarely retains the rosc-colour of the outer surface of tately retains the rose-colour of the outer surface of the petals which so particularly distinguishes it in the Alps. It thrives especially on a soil mixed with slatey and schistose dibris. Henry Correvon, Botanic Garden, Geneva.

ORIGIN OF DOMESTICATED VEGETABLES.

THERE are two methods of studying the origin of our domesticated plants, the one historical, the other through investigation into the causes of varia-The first method has the disadvantage that events of this character but rarely find explicit record; the second, that we as yet have a deficiency of proper We are hence obliged, if we would attain truthful conclusions, to combine the two methods, and through painstaking consulting of scattered mention, the guarded interpretation of hints to be gained from tradition and vernacular names, and the recognition of changes due to the acts of man, to follow the protean changes from course to course, until we either attain the limit of our knowledge or indication of the original species.

We may in the furtherance of this course recognise certain truths which we must consider axiomatic; that variation is an indication of changed environment, and that departure in the plant from the natural motive towards a motive more subservient to man's wants is evidence of man's interference; that as through man's agency plants become removed from natural conditions, and have qualities dependent upon domesticated conditions impressed upon them, so when neglected by man these acquired qualities disappear in a large measure, and the plant changes, not reverts, to conditions which enable it to satisfy the requirements of Nature; that change of form, added to the plant through man's selection, if beneficial to the plant, when left to Nature will be maintained in the plant escape or garden wilding; that a large number of varieties is an indication of antiquity of culture, especially if such varieties are of different types.

Applying these thoughts to a case in illustration. we should at once infer a greater antiquity of origin for the Turnip than for the Ruta-baga; for the Carrot than for the Parsnip; and where the varieties and types are very many, as in Maize, Wheat, Beans, &c., we should infer very great antiquity of culture. So seedless fruits indicate man's ancient interference, and should only be expected to occur in regions which are, or have been, occupied by man.

If a highway leads from Jericho to Jerusalem, it is certainly proper to infer that the same road leads from Jerusalem to Jericho. If variations of a certain kind are produced only by man's interference, if the fact be well established, it is certainly proper to infer that if variations of this kind are found they indicate a former cultivation. We can even go further, and say that if the agency of man induces numerous variations favourable to a man's wants in a species, then that the presence of numerous variations in a species, of a kind favourable to man, indicate a previous agency of man. Thus, the peculiar distribution of the Vitis californica ln rows, near Fort Whipple in Arizona, is considered conclusive evidence that the ancient Pueblo Indians were in the habit of cultivating it; evidence of a dissimilar character, but very nearly as conclusive, for the ancient cultivation of the Vitis Labrusca is seen in the variability of this species, which is strikingly in the direction of the improvement of the fruit in individuals, as is known to the many farmers in New England who have transplanted improved kinds to their door-yards, and is a matter of common repute, as well as evidenced in the various named varieties, as the Concord, which have originated from its seed. If we plant the seed of the Apple, as we note the varying quality of the seedlings, no two being alike, we can infer from this circumstance that the Apple is a domesticated fruit, and of human origin; if we likewise plant the seeds of the American Crab, we may properly infer that it is a wild or natural species from the power its seeds possess of coming true to name. This method of research, if supplemented by a historical record, offers much promise to the investigator.

When we consider the number of species of vegetables that America has furnished to civilisation, their number of variations, their high degree of improvement, and their constancy to type, we may infer, prima facie, that a civilisation capable of producing these results has existed in the past. We need but mention the Maize, the Bean, the Pumpkin and Squash, the Tomato, Peppers, the Potato, the Cassava, Chocolate, &c.

It is not improbable that many of our so-called natural species, to which our domesticated varieties are referred, are themselves but escapes from a cultivated state. I do not know whether the wild Parsuip of America has a close resemblance to the wild Parsnip of Europe or not. We cannot readily suppose that the wild Parsnip was really brought to America, for it appears more reasonable to believe that it is an escape from cultivation; as the Salsify certainly is about Geneva. In default of any mention, we certainly should be justified by common consent in referring our cultivated Parsnip for origin to our wild Parsnip, and yet how erroneous this would be. The same remark applies to the Carrot. Should we not, therefore, be slow to refer the cultivated Parsnip to the wild Parsnip of European fields, or the cultivated Carrots to the wild Carrots? Avena fatua is supposed to be the parent form of the cultivated Oat, but why not more reasonable to suppose it to be an escape, modified only from the cultivated Oat in order to meet the conditions necessitated by its struggle under Nature's conditions?

The history of the Indians, after the discovery, shows that they were greedy for new sources of food supply, and the facts connected with their habits of living all show that they exercised a care over vegetable productions. Thus the Melon and the Peach received distribution over wide areas in advance of a European discovery; the Onion was even mentioned by Cortez as found in Mexico; the Maize, the Bean, and the Squash, in varieties, all plants of tropical origin, and which could not maintain themselves without care, were staple crops throughout northern America, even to Lake Coulonge on the Ottawa river, and beyond the St. Lawrence, where the crops required seeding, protection and preservation of seed over the winter months. The Suoflower was grown for its seed by the Hurons, as seems also to have been the Jerusalem Artichoke for its roots. Bartram notes seeing in the South a plantation of Hickory Nut cultivated by the Indians. The Prunus americana seems to have been planted by the New England natives, and this seems also to have been the case with Prunus Chicasa in the South-west, although I find no distinct mention of the fact. Numerous other illustrations occur in my notes of a cultivation or domestication of plants throughout America, and a care and curious concern about forms and colours which must have caused selection to have been exercised; at any rate, when we have so-called wild species of the same varieties, the variability of these wild species in the portion which finds use is notice-

Indeed, the careful student must recognise that the American Indians were an agricultural people wherever natural conditions and tribal strength would admit, and that they were efficient agents, not only in the geographical distribution of certain plants, but also in the producing of varieties. Circumstances, as in European nations in times past, made the tribes usually hunters and agriculturists, often agricultural solely, and again devoted wholly to the chase, and living on wild productions,

The history of the origin of our American vegetables must come from a close study of the history of a people, as well as from a study into the causes and effects of variations. These two methods in time may admit of certain generalisations, and it seems safe to assume that the results of such a study will not be in accordance with accepted notions. The physiological method will bring a certainty so far as it accomplishes a conclusion, which the method of systematic botany does not supply. Until we can separate escapes from natural species—that is, until we can determine species apart from changes impressed upon plants by man-it seems unsafe to refer our cultivated plants to localities wherein occur wildings of like species. Far preferable the argument from historical mention of the habits and movements or migrations of peoples. It seems probable that variability or trueness to seed may become the test as to the sufficiency of a conclusion in favour of or against an assigned species. This fact is an interesting one for the scholarly botanist, for it only needs the reading of De Candolle's work to realise the uncertainty at present existing. E. Lewis Sturtevant, M.D., in "Botanical Gazette."

THE APPLE.

WHETHER the Apples which grew in the gardens of Alcinous, King of Corcyra (Corfu), before the Christian era (and whose orchards were said to be so fruitful as to give rise to the proverb " Poma Alcinoo date," were similar in texture and flavour to those varieties we now cultivate, or whether they were the harsh and uppalatable Crab in its original state, we have no exact information; nor does it perhaps much matter now; still, it would be extremely interesting to know the exact date when, as well as the name of the identical person who first commenced the commendable operation of transforming that small green ball of acid pulp into the highly coloured and delectable fruit which we now call the Apple. This question, however, is hidden with the past, as is also the exact date when the Apple io its improved form was introduced into this country. I say introduced, because I fear that the laudable act mentioned above cannot possibly be ascribed either to Divitiacus, the first known ruler of Britain, Hengist, nor Egbert, nor any of their Celtic or Saxon subjects, as it appears the clever Romans are in this case—as in nearly every other good thing for which we have to be thankfulcredited with this excellent act also. However true or untrue this may be, we have good reason to believe that these renowned warriors were amongst the earliest cultivators of this fruit; at any rate, the ancient naturalist, Pliny, who perished in the first known eruption of Vesuvius, A.D. 79, knew, or should have known, something about Apples, as there were, from his account, a score or more varieties cultivated in that country in his day.

The great advance in its culture, however, in this country, as in most things else, unless history is incorrect, took place when in 1066 William of Normandy first trod British soil, for soon after this period the different varieties of Apple began to engage the fond attentions of our ancestors, and so diligently, devotedly, and continuously have these attentions been paid by their descendants to this delicious fruit, that there are, it is said, about 4000 varieties in existence at the present time - rather a numerous progeny, all of which may be safely classed as good, bad, or indifferent in quality. Since the secret of changing its character was first discovered,

the great difficulty has been, I should imagine, not in obtaining numerous varieties, because the Apple is extremely prodigal in this respect, but rather in acquiring those of increased size and superior flavour, and even as they now exist, if this grand total were divided by forty, we should still have enough varieties and to spare. At any rate, the late Chiswick least in honour of Pomona pointed significantly in this direction, as did also the interesting and valuable which afterwards appeared in the Gardeners' Chronicle. It is not at all improbable that these Roman as well as Norman warriors soon found that there were some situations as well as some soils, even in this comparatively fertife island, where this tree refused to grow and fruit satisfactorily. No doubt their task of finding out the most favourable position and soil was a much more lengthy and difficult one to them than it would now be to us, aided and guided as we are by modern science; still their keen sense and wise judgment appears to have enabled them to choose the very same districts which we still find to be the most fruitful; but even in those days the results do not appear to have long continued altogether satisfactory, as we learn that even in that fertile county we now call the Garden of England the quality of the Apples did not equal that of the more southern clime from which they had been brought, hence great quantities of fruit were annually imported from the Continent.

Very praiseworthy efforts were made from time to time by enthusiastic cultivators to remedy this unfavourable state of things by various means, one of which was to import new trees from the Continent, which act plainly shows that even in the days of old the wearing-out theory had its disciples. "Richard Harris, fruiterer to Henry VIII., having observed that the fruit trees brought over by the Normans had lost their native excellence by length of time, and being under the impression that neither the soil nor climate were at fault, determined to obtain a fresh supply of trees, which he was enabled to accomplish at great labour and cost." These trees consisted of Apples and Cherries, the Golden Reinette and Pippin Apples, and the sweet, or, as it is now called, the Kentish Cherry. These were planted on 100 acres of carefully selected rich land called the Brennet, in Kent, and no doubt their produce, under the fostering care of worthy Richard Harris, contributed in no small degree to the gratification of the delicate palate of the monarch. Herefordshire and Worcestershire appear ever to have contested with Kent the honours of being foremost in Apple culture. This was first occasioned most probably by the Romans having settled principally in those districts. and afterwards by the strenuous efforts of influential individuals at various times in introducing and disseminating improved varieties from the Continent: but undoubtedly the chief cause was due to the general fertility of these counties and their suitableness to the healthy growth of this tree. Other counties have during the last half century vied with these in this special culture, and some improvement has been effected both in the selection of the varieties, as well as in the methods of cultivation; but still it is only too plainly apparent to any one who pays a visit to the Apple orchards in our rural districts that they are yet capable of still greater improvement, without which they must and will fail to give that profitable result which they are capable of giving under good cultivation. T. S. C.
(To be continued.)

GLADIOLI.

However great the outcry against these magnificent harvest-time flowers, there is still a large demand for them, and I believe they will be planted quite as, if not more, extensively during the ensuing season as at any previous one; and judging from the appearance of the corms, of which I have seen a large quantity, I think it does not require much prophetic acuteness to predict a good display next autumn, all other things being equal. The Continental crops are especially fine all round, the English grown corms are not so large, but very sound; and it is surprising what good spikes are produced by even moderate-sized, roughly sound corms; but I certainly prefer those grown on the Continent, as far as I have been able to judge. Some seasons I have planted them side by side, and especially last year I fancied there was a decided superiority in the size of the spikes of foreign to English grown bulbs; perhaps the home-grown

bulbs were not up to the usual standard which I planted, and, speaking candidly, I hope such was actually the case, for I much dislike puffing up Continental-grown stuff as superior to home-grown, unless the thing is patent to everybody.

The magnificent display which Messrs. Kelway, of Langport, are enabled to make every year both at home and at exhibitions certainly favours the idea that they may be cultivated most successfully over an extended period, even with our very precarious seasons. Many growers of repute complain of heavy losses, year after year, until what was once a complete collection gradually wastes to almost nil; and they assure us no stone has been left unturned in order to encourage what they considered their hobby. Certain is it, the Gladiolus is the subject of many ills, the most formidable of which seems to be the disease from which all collections suffer more or less. All interested in this noble flower should do their utmost to eradicate it by destroying all plants, however choice, directly the least sign of disease appears in the beds; pull them up in toto and burn them, and thus so far put an end to it.

Now is the time we gardeners are about to purchase a fresh stock; very frequently they are ordered with the garden seeds, but he is the wisest man who orders them with the other bulbs in autumn, giving instructions for them to be delivered as early as they are ripe. Not only is it probable that better, indeed best, bulbs will be received, but he will also be able to store them through the winter according to his own idea, and the storiog is an item of material importance, as they should be kept in such condition that they will either commence to grow or shrivel, nor must they be subject to frost. I have found pots of dry sand excellent media for storing them, and occasionally turn them out, say once a week, to prevent a temperature as possible. From the present time onwards they will make use of any stimulant which excites growth, but this must be checked, for it is not safe to plant them out, even first batch, till the first week in March, a second lot being planted at the end of the same month, while the final batch may be planted about the second or third week in April, by which a lengthened supply of flowers will be enjoyed. In order to secure a very early supply of flowers the bulbs should be started in pots, and ultimately planted out in a sheltered corner, or grown on in larger pots; such plants will be found most serviceable for the decoration of the conservatory. Some grown last season by myself in this way were much appreciated, and did excellent service.

Whenever practicable I think they should be grown in specially prepared beds, by which means you are more likely to secure good corms for another season. Certainly, as previously intimated, they have a most charming appearance in the mixed border, or among shrubs; but for this purpose the cheaper kinds may be selected, such as the dazzling old brenchleyensis, than which none is better adopted for the purpose; John Bull, Rebecca, James Carter, Ida, Impératrice, &c., as they will answer the purpose equally well as the more expensive kinds. Even the positions assigned them should, previous to planting, be well prepared, by being deeply dug and liberally manured, and the plants watered well if very dry weather is experienced. But where anything like a good collection is grown, it is much preferable to arrange them all in one bed, and this should be selected at once and well trenched, or and this should be selected at nace and well trenched, or turned up deeply and roughly, and when the time for planting comes, manure right well with rotten well-bodied manure, arranging the same directly under, not necessarily in contact with, the corms; and if the soil is stiff and damp sprinkle some sharp sand upon them and cover with about 6 inches of soil. A good distance for planting is about 18 inches between the rows, and with the corms 9 inches apart; there will then be plenty of room for staking and watering, as well as fertilising the flowers if seed be desired, when such operations are necessary. You can cover the surface of the bed with Migaonette without prejudicial effect upon the Gladioli—a crop which will be extremely useful. As I have previously intimated, it is necessary to give them good waterings if very dry weather is experienced, and especially as the flower-spike is emerging from the leaves. At this time they spike is emerging from the leaves. At this time they are greatly assisted by one or two supplies of manure-water—say once a week, if needful—the result will well repay the outlay. Do not neglect to stake so soon as the wind has control over them, or they may quickly be sanpped off, causing great vexation; besides, they present a much more tidy appearance when staked. With these remarks I close, and hope the growers of these noble flowers will derive more pleasure from them in 1884 than at any previous season. Daf.

COLONIAL NOTES.

BOTANIC GARDEN, MELEOURNE.—Mr. Gullfoyle has issued a catalogue of the plants under cultivation in the Melbourne Botanic Garden, prefaced with a general account of the garden, and illustrated with lithographs. The area of the garden is about 33 acres, the total area, with the Government House grounds adjoining, being 300 acres. The garden dates only from 1847, and for seventeen years it was under the energetic management of Baron von Mueller. For the last ten years it has been under the direction of Mr. Gulfoyle. Great attention is paid to the introduction and diffusion of useful plants, and the laboratory affords a means of testing their utility in different ways.

The catalogue is rather ambitious, but should have been revised by some one familiar with botanical literature and nomenclature. Authorities are cited both for the genera and the species, but there is no guarantee that any one of the plants in the garden is really the plant meant by the authority cited. At first sight we were puzzled by the authority " Hortoindicating that the name to which that word is affixed is of garden origin. Had this been written in the usual manner, "Hort.," no such difficulty would have arisen. As it would obviouly be impossible for any one to verify all the names, it would seem better to have issued an unpretending catalogue of garden names, without any reference to authors, except in those cases where the compiler, or competent assistants, by personal investigations, had been able to check the names. The lists of Arads, Bromeliads, &c., published in the Kew Reports are cases in point (pity 'tis they are so few): they are not mere lists, but carefully drawn up catalogues, in which each name has been hotanically verified. Such a list. accompanied by a rigidly exact system of labelling, affords the most precious assistance to the student. In the present case we think the insertion to a larger extent than has been done, of reputed synonyms, would have been more useful than that of authorities. on the first page we find this entry, "Abutilon vexillarum (sic), E. Mon. (?), Vexillary Lantern Flower. Hardy evergreen shrub." We feel pretty sure that Professor Edward Morren, who described the plant in the Belgique Horticole, spelt it vexillarium, and we believe we are correct in saying that the name in question should be superseded by the earlier name of A. megapotamicum of A. St. Hilaire. Moreover. the abbreviation used is not that commonly employed to denote Professor Morren's responsibility. Again, why take up room with such a nonsensical appel-lation as "Vexillary Lantern Flower"? Surely no one ever uses such an appellation in tralia, and no one does so, to our knowledge, in Europe. Christy (?) is given as the authority for Pious Heldreichii—we suppose Dr. Christ, the author of a memoir on the European Pioes, is intended; while for Bougard we ought certainly to write Bongard; for Griesbeck (see Pious peuke), Grisebach; for Filingi, Tilingi; for Garrya McLadeniana, G. Macfadyena; for Cotoneaster Simmondsii, Hortorum, C. Simonsi, Baker. The Golden or Corstorphine Plane is surely not a variety of Acer tataricum. Lindley is not the authority to cite for Aphelandra Roezliana var. auraotiaca; Passiflora macrocarpa has been fully described, first in these columns and then elsewhere, and figured, and hence is entitled to some other citation than " Hortorum" after it; and the same may be said of Passiflora sanguinolenta, We are at a loss to know what the "carpus" of a Thuis can be. The confusion of genders, which is so common in most catalogues, is well illustrated in the present one, where we find Abutilon floribunda, Alnus japonicus, Passiflora Herbertianum, while under Pentstemon we find thirteen species with the neuter termination um, one with the feminine a, and four with the masculine us. P. cohosa might count as a feminine termination were it not for the fact that it should, for reasons known to botanists, if not to gardeners, have been written P. Cobæa. Passiflora Kermesina, on the other hand, would have been better written with a small "k," or would have been still more correctly called P. Raddeana. Some of the Selaginellas, as S. Willdenovii, cæsia, denticulata, are mixed up without any indication with Lycopodium. In dealing with such a vast multitude of names misprints are of course to a large extent unavoidable, but they would probably have been not only absolutely but relatively fewer in number had the plan of the catalogue been more restricted, so as to

have allowed a greater concentration of attention upon this matter.

But it is a very ungracious task to criticise an index of this kind, which, whatever its defects may be, is sure to be useful. If we have alluded to some of the blemishes which have attracted our attention, it has been with the object of illustrating our opinion, that too much has been attempted in it, and with the view of securing a more correct edition on another occasion. So much gratitude is due to catalogue-makers and index-compilers that every allowance should be made for their shortcomings; and journalists, whose sins come home to them every week, should be among the last to throw stones. The list of native Australian plants in cultivation, such as the Eucalypts, the Acacias, the Hakeas, the Grevilleas, Proteas, &c., is very interesting.

∯loqists' ∯lowers.

THE CARNATION AND PICOTEE. -It is usual with a large class of cultivators of these plants to delay making any addition to their stock until the spring. During March and April, even as late as May, the trade will be sending out quantities of these choice flowers to their customers. It ought to be well known that October is the best month to make additions to the stock of plants. They can be sent with the roots securely wrapped up in damp moss, packed in small compass; whereas if the order is delayed nutil now it is necessary to send them in pots. are now busy repotting our whole collection, and while doing so it occurred to me that a few notes on some of the newer varieties might be useful to intend-ing purchasers. Those who still have a lingering fondness for the "good old varieties," as they are pleased to term them, will be left behind in the race if they depend exclusively upon them, and ignore the additions made to our collections during the last halfdozen years. Besides, the constitution of the "good old varieties" is not so robust and vigorous as that of the new ones. Mr. Dodwell, who is well able to give an opinion on this subject, informs me that the average life of a Carnation is fifteen years, although some few, possessing great vigour of constitution, have lived for more than fifty years.

I have just been turning over the pages of Hogg on The Carnation, 1839 edition, and I find 400 varieties enumerated and described, but I do not think even one of those 400 varieties is to be found in any trade catalogues, or even in any private collections, nowsufficient proof that the Carnation has a greater tendency to wear out than some other varieties of florists' flowers, the Auricula, for instance. In a list of 106 varieties of Auriculas I find eighteen that are at present in cultivation; some of them are in our own collection, and they are quite as vigorous as the seedlings of last year. Probably the cultural requirements of the Carnation are not sufficiently understood. We have learned a good deal during the last forty-five years from our own failures and the failures of others, and I fancy the Carnation is better grown now than it used to be. In Hogg's time the composts used were too rich, and it was no great wonder if a large number of the plants died. We use one barrow-load of decayed manure to four or five of loam, and find this compost sufficiently rich, Hogg's recipe is five barrow-loads of loam to eight or nine of horse-dung; and this, be it remembered, was considered not at all a rich compost. Other growers at that time used, in addition to the manure, sugar-bakers' scum, soap-

boilers' waste, night-soil, pigeons'-dung, blood, &c.

The wild progenitors of the Carnation and Picotee
find stifficient nourishment in the dibris of old castles
and rocks to keep them in health for many years, and
it is too much of a change to tear them from their
ancestral walls and transplant their roots into such a
mess as the old forsits recommended. The plants were
likely to do better planted out in the open ground.

Beginning, as usual, with the scarlet bizarre Carations, we do not find any new additions for this
year; indeed, it will be difficult to improve upon
such sorts as Mr. Dodwell has raised during the last
few years, viz., Arthur Medhust, Edward Adams,
Fred, George, Master Stanley, Philip Thomas, and
Robert Lord. These should be grown in the most
select collections. In crimson bizarres E. S. Dodwell
and Master Fred are not well known as yet. They

were sent out by Mr. Hewitt, of Chesterfield, and are both richly coloured and well marked flowers. William Skirviog, raised by Mr. Richard Gorton, of Eccles, and now being sent out by Mr. Turner, is distinct and very fine. It is classed with the pink and purple bizarres. Samuel Barlow (Dodwell) is a true crimson bizarre; it is now being sent out by the raiser. It has rich crimson and deep purple flakes on a white ground. Mr. Dodwell is also sending out a very distinct pink and purple variety named Mrs. Anstiss. It will be a great addition to this hitherto weak class. Mrs. Barlow, one of Mr. Dodwell's seedlings, has not yet been brought to the front, but it will yet be seen in the highest position; it will also have to be classed with the pink and purple varieties. Sarah Payne, for many years undisputed queen in this class, must now fall into the third or fourth rank.

In purple flakes James Douglas, raised and sent out by Mr. Simonite, of Rough Bank, Sheffield, stands highest in the regard of the florists; whether Mr. Dodwell's new variety, Squire Whitbourn, will push it from its pedestal remains to be seen. It is a very fine variety, of good form, and a rich purple flake.

Henry Cannell (Dodwell), scarlet flake, is certainly a great addition to this class; whether it will displace the celebrated variety, Sportsman, remains to be seen; it is certainly second to it, and has a better formed guard-petal. Figaro and Matador, raised by Dr. Abercrombie, of Cheltenham, and now being sent out by Mr. Turner, are quite distinct from Mr. Dodwell's variety. They are both well formed flowers; and, as shown by Mr. Turner, are good additions to this class, which contains but few vigorous growing varieties.

The rose flakes are to be greatly enriched this season by the addition of Mr. Gorton's well known and beautiful varieties, Tim Bobbin and Rob Roy. They are being sent out by Mr. Turner. I have grown them both for two seasons, and can truly say that they are the best formed and most beautifully marked flowers in this class. Distinct in every way from these two is Mr. Dodwell's pale rose flake, Dorothy; it is distinct from any other in this class, but it will not take with all florists, owing to its pale delicate rose colour, which does not suit the fancy of exhibitors. It will be a charming garden flower. would also strongly recommend Titania, which Mr. Dodwell insists on terming a rose fleck. It was raised three or four years ago by Mr. Dodwell, and is a very beautiful garden variety, being of very vigorous growth. It is flaked with very delicate rose on a pure white ground.

A few notes on the Picotee must be continued in another number. J. Douglas.

AMARYLLIS,-The usual practice with this plant is to repot the bulbs annually, separating the offsets from the parent bulbs and repotting them in small pots. If the offsets have no roots, and are not readily removed, it is better to let them remain on for another year. It is a great pleasure when a new variety forms offsets freely, as in that case we can very speedily get up a good stock. On the other hand, it is discouraging to grow a choice variety year after year and fail to obtain a single offset. I have grown a bulb of a good variety for ten years. It is larger, and flowers stronger than it did a decade ago. but has not made any increase. Some choice varieties will give as many as six offsets from a bulb. Considerable caution is required in watering them at this time of the year; they do not form roots very rapidly, and if the pots are plunged in a moist bottom-heat they absorb a deal of moisture. I do not give them any water for a full month after they have been repotted; indeed, if the bulbs and pots are large they will not require water for two months. When the leaves have made considerable growth, and the potting soil is dry, they may be watered. A bed of spent tan, with a portion of fresh added to it, will give a bottom-heat of 80° to 85°, and this, with a minimum temperature of about 55°, will suit the Amaryllis admirably. We used to grow them very well when there was no house at all, except the shelves in an early vinery. The bulbs were potted about the first week in January, and started that month. In early vineries a bed of leaves and manure is a good help to starting the Vines; and over this Amaryllis and other bulbs can be plunged.

CAMELLIAS. — These are now very valuable as an aid to keeping the conservatory and greenhouse gay with showy flowers. It ought to be well known that

this plant does not bear forcing into flower in heat. The result of a close, warm, and moist atmosphere would be to cause the half-expanded buds to drop off. The only way to force the Camellia is to put the plants into a warm house as soon as the blooming period is over. This will produce an early growth, and a corresponding early formation of flower-buds. I generally repot any that require it as soon as they have done flowering, and the Camellia is not so par-ticular about the kind of potting-soil as some people think. It will do well in peat, or in peat with turfy loam added, or even in loam entirely. Turfy loam answers very well until the turf is quite decayed, when it forms a rather compact mass not sufficiently pervious to the water. I prefer for potting turfy peat two parts and one part of good loam, with some crushed bones added to it, and if necessary some sharp sand and pounded charcoal. The leaves, like those of Orange trees, get dirty, and it is sometimes necessary to wash them with soft-soap and a sponge. Some people do not give their plants sufficient water in the late autumn and winter months. Over-dryness at the roots is another cause of the buds drapping very frequently. The plants stand out-of-doors during the moist autumn months, where they are almost nightly wet with dew, and frequently wet with the rains. By this time the flower-buds are all set. The plants are taken into the house, where the leaves are never wet; the atmosphere is dry; and in addition to this but little water is applied to the roots. What wonder, then, if flawer-buds drop off? The sudden change would cause this if nothing else did.

CHRYSANTHEMUMS. - Any cuttings that did not form roots in the cold frame, or on the greenhouse stage, should be put into a bothed, where they will speedily form roots. They seem to do best put in singly in thumb-pots, the kind known as Long Toms; but they very speedily fill these with roots, and should be potted into 60's or small 48's as soon as they are well rooted. There is generally considerable pressure of work at this time of the year, and these plants are apt to be neglected, but it is a great mistake to neglect them now. No good results will be ohtained unless they are grown on freely, and repotted when they require it. Plants intended to form specimens, either of the pompon or large-flowered varieties, will do best on a shelf near the glass in a heated house. The principal thing is to keep them on growing, using good rich potting soil. For this purpose we mix up some rich compost about the end of the year. It is composed of good loam four parts, one part short decayed stable-manure, one part leafmould, and an 8-inch potful of crushed hones to each barrow-load. It is very desirable to mix up the potting stuff a few months before using it, because in that case the manure is so much more thoroughly incorporated with the soil. When the young plants have grown about 6 or 8 inches the points should be pinched out. This will cause a number of sidegrowths to start, and as these grow out sufficiently they should be tied down.

FUCHSIAS. - These elegant but homely plants should now be attended to. They are starting into growth even where they have not been placed in a warm house. As soon as cuttings can be obtained a few of them should be propagated in a hotbed. There are few more useful plants than these for furnishing the greenhouse and conservatory during the late summer and autumn months. The old plants, if there is room for them, may also be grown on. Tall pyramidal plants have a fine effect in the centre of the greenhouse stage. J. Douglas.

Keports of Hocieties.

Notts Horticultural and Botanical: Feb. 20. The monthly meeting, over which Mr. C. E. Pearson Notts Horticultural and Botanical: Feb. 20.
—The monthly meeting, over which Mr. C. E. Pearson presided, was held at the Mechanics' institute, Nortingham, Mr. Meadows, Rock House, Basford, exhibited a very fine mass of Odontoglossum Rossii majus, grown upon a piece of Tree Fern (Cyathad calabata). It bore seventy-six flower-spikes, averaging three flowers on a spike, and had been grown perfectly cool. A Certificate of Merit was awarded. The same exhibitor also showed a plant of Dendrobium marmoratum in a 4-inch Orchid basket, with four good growths, about to inches in length, each carrying twelve flowers, the colour of the flowers by gaslight being of a deep purple tinge. Mr. Thacker, Minerva House, St. Ann's Road, brought a choice collection of cut illowers, including Phalenopsis

Schilleriana, Cattleya Triance, Cypripedium barbatum, C. barbatum nigrum, Odontoglossum Pescatorci, O. Alexandre, Ceologyne cristata; also fine blooms of Anthurium Andreanum, A. Scherzerianum var. pygmæum, ex. Mr. Walker, Hardwick House, showed Hyacinths and Paper-white Narciss in good condition. From Mr. Jenkins, of Radcliffe, came some splendid sprays of Clematis indivisa tobata; and Mr. Edrington, Wandstorpe Grange, bad a collection of Azaleas, Primulas, and Cinerarias. Mr. J. H. Walker read an interesting paper on "Mushrooms and Mushroom Growing," upon which a long discussion followed. Votes of thanks to the lecturer and to the chairman brought the proceedings of the evening to a close. T. E.

The Menther.

STATE OF THE WEATHER AT BLACKHEATH, LONDON,

MONTH AND DAY.	BAROMETER		TEMPERATURE OF THE Ale.					Hygrome- trical De- ductions from Glaisher's Tables 6th Edition.		WIND.		
	Mean Reading Reduced to 32° Fahr.	Departure from Average of 18 years.	Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 50 years.	Dew Point.	Degree of Humidity. Sat. = 100.	Average Direction.	RAINFALL	
Feb.	In.	In.									In.	
21	29 55	-0.26	51.2	42.0	9.2	46.3	+ 7.3	43 6	91	S.	0.20	
22	29.46	-0.36	SC.2	41 O	9.2	45·S	+ 6.4	42 9	90	S.	6.18	
23	29.38	-0 44	51.0	38.0	13 0	44.1	+ 4.9	40.2	85	W.	0,04	
24	29.52	-0.29	47.5	39 O	8.5	43.0	+ 3.7	38.6	84	w.n w	0.00	
25	29.72	-0.09	45 5	34.0	11 5	39 9	+ 0.4	37.3	91	N.W.	0.03	
26	29.77	-0.04	17.2	34.0	13,2	39 7	0.0	35.0	87	w.nw	0.00	
27	29.84	+ 0.03	45.0	30 S	14-9	37.5	2.4	34 4	89	E.	0.00	
Mean	29.60	-0.21	48.2	36.9	11.3	42.3	+ 2.9	39.0	83	Variab.	0 45	

- Feb. 21.—Raio in early morning: fine bright afternoon.

 Dark sky at night.

 22.—Fine bright morning, raio at 1 P. M.; dull afternoon.

 Heavy rain from 3.30 P.M.

 23.—Fine bright morning; dull afternoon and night;
 drizzling raio.

 24.—Fine day and night.

 25.—Doint M.; hail falling at 3.15 P.M. Fine c'ear night.

 26.—Fog in morning; fine afternoon. Cold night, fog.

 27.—Fog in morning; overcast afternoon and night.

LONDON: Almospheric Pressure.—During the week ending February 23, the reading of the barometer at the level of the sea decreased from 30.02 inches to 29.93 inches by 3 F.M. on the 17th, increased to 29.93 inches by midnight on the same day, decreased to 29.84 inches by midnight on the 18th, decreased to 29.85 inches by midnight on the 18th, decreased to 29.57 inches by 3 F.M. on the 19th, increased to 29.58 inches by 3 F.M. on the 20th, decreased to 29.57 inches by midnight on the 22th, increased to 29.57 inches by midnight on the 22th, increased to 29.58 to 3 F.M. on the 37th and was 29.48 inches by the end of the week.

The mean reading of the barometer for the week. LONDON: Atmospheric Pressure .- During the week

The mean reading of the barometer for the week at the level of the sea was 29.76inches, being 0.20 inch lower than last week, and 0.23 inch above the average

of the week.

Temperature, — The highest temperature in the shade in the week was 52°, on the 20th; the highest reached on the 18th was 44°.7. The mean of the seven high day temperatures was 48°.9.

The lowest temperature was 31°, on the 18th; an the 20th the lowest temperature was 43°.9. The mean of the seven low night temperatures was 37°.8. of the week.

The greatest range of temperature in one day was 14°.7, on the 19th; the smallest was 8°.1, on the 20th. The mean of the seven daily ranges was 11°.1.

20th. The mean of the seven daily ranges was 11°.1. The mean temperatures were—on the 17th, 38°.9; on the 18th, 36°.8; on the 19th, 42°.9; on the 20th, 48°.1; on the 21st, 46°.3; on the 22d, 45°.5; and on the 23d, 44°.1; and these were all above their averages (excepting the 18th, which was 2° below) by 0°.2, 4°.1, 6°.2, 7°.3, 6°.4, and 4°.9 respectively. The mean temperature was 43°.2, being 0°.3 higher than last week, and 4°.3 ahove the average of the week.

the week.

The highest reading of a thermometer with blackened bulb in vacuo placed in the full rays of the sun was 97°.5, on the 20th. The mean of the seven readings was 84°.2.

The lowest reading of a thermometer with its bulb

placed on grass was 23°.5, on the 18th. of the seven readings was 31°.1.

Rain fell on five days, to the amount of 0.74 inch.

England: Temperature.—During the week ending February 23 the highest temperatures were 54°.5 at Cambridge, 53° at Truro, 52°.9 at Nottingham; the

highest at Bolton was 49°, 3, at Preston 49°, 5, and at Liverpool 49°, 6. The general mean was 41°, 3.

The lowest temperatures were 29° at Cambridge and Hull, 29°, 7 at Sheffield; the lowest at Trurn was 38°, at Plymouth 37°, and at Brighton 36°, 6.

The general mean was 32°, 7.

The greatest ranges were 25°, 5 at Cambridge, 23° at Hull, 22°, 2 at Nottingham; the smallest ranges were 14°, 4 at Plymouth, 14°, 5 at Liverpool, and 15° at Truro and Bristol. The general mean was 18°, 6.

The mean of the seven high day temperatures was highest at Truro, 52°, at Cambridge 50°, 1, at Plymouth, 49°, 6; and was lowest at Bradford, 43°, 8 at Preston 44°, 4, and at Bolton 44°, 9. The general mean was 47°, 1.

The mean of the seven low night temperatures

The mean of the seven low night temperatures was highest at Plymouth, 42°.1, at Truro 41°.7, at Brighton 40°.1; and was lowest at Wolverhampton, 33°.5, at Hull 34°.2 and at Bolton 34°.4. The

ton, 32°, 5, at Hull 34°.2 and at Bolton 34°.4. The general mean was 37°.

The mean daily range of temperature was highest at Cambridge, 13°.5, at Hull 12°.4, at Sheffield 12°; and was least at Flymouth and Preston, 7°.5, and at Brighton 7°.8. The general mean was 10°.1.

The mean temperature was highest at Truro, 46°.3, at Plymouth 45°.4, at Brighton 43°.5; and was lowest at Wolverhampton, 38°.7, at Bolton 39°.2, and at Bradford 39°.3. The general mean was 41°.6.

Rain.—The largest fall was 2.44 inches at Plymouth, 1,33 inch at Truro, 1.19 inch at Bolton; the smallest fall was 0.16 inch at Leeds, 0.22 inch at Hull, and 0.24 inch at Bradford. The general mean mail was 0.6 inch at Ill was 0.6 inch at Leeds, 0.22 inch at Hull, and 0.24 inch at Bradford.

fall was 0.76 inch. Rain fell on every day in the week at Truro, Plymouth, and Bolton.

SCOTLAND: Temperature. - During the week ending February 23, the highest temperature was 52 Glasgow; at Dundee the highest was 46°.7.

Glasgow; at Dundee the highest was 40.7. Ine general mean was 49°.2.

The lowest temperature in the week was 30°.9, at Edinburgh; at Leith the lowest temperature was 33°.5.

The general mean was 32°.4.

The mean temperature was highest at Glasgow and Aherdeen, 41°.1; and lowest at Greenock, 38°.4.

The general mean was 39°.8.

Rain.—The largest fall was 3.27 inches, at Greenock; and the smallest was 0.26 inch, at Leith.

The general mean fall was 1.35 inch.

JAMES GLAISHER, F.R.S.

Answers to Correspondents.

ARUM: Subscriber. It is very doubtful if the plant will throw up another double spathe, but you might mark it, and note its behaviour next season.

BEETLE: E. V. B. The beedle is no doubt an Aphodius, species of which are abundant in the droppings of domestic animals in spring. The spring-like weather has raised them earlier than usual. It will do no harm if nuwtitingly introduced into the house.

BOOKS: F. H. Mr. B. S. Williams' Choice Stove and Greenhouse Plants, published by the author; and Hardy Florist' Flowers, by James Douglas, Great Gearies, Ilfard.—F. H. F. Bentham's British Flora (Lovell Reeve & Co., Henrietta Street, Covent Garden, W.C.). Price about one guinea.

FUCHSIA: R. M. Your specimen is an illustration of the fundamental identity of sepals and leaves. In former volumes we bave figured much more striking illustrations of the same kind.

Indiatations of the same kind.

Indian Numeration: A. The figures are quite correct, the Indian mode of numeration differing from ours thus:—Units, tens, hundreds, bousands, tens of thousands, lakhs, tens of lakhs, krors. One lakh = too,coo; one kerr= to,coo,coo; one seer= 2 lb, avoirdupcis; one maund= 40 seers; one rupee of 16 annas= 2s. (about).

NAMES oF FRUITS: H. R., Tulue Hill. Of those sent Dutch Mignonne, Claygate Pearmain, and Sturmer Pippin are true and correctly named. The Apple labelled Northern Spy is Harvey's Wiltshire Defiance. Reinette du Canada is so much decayed that we cannot be quite sure of it; very doubtful.

Reinette du Canada is so much decayed that we cannot be quite sure of it; very doubtful.

NAMES OF PLANTS: A. B. 1, Imantophyllum miniatum, We cannot name the Azaleas.—R. P. B. Dendrabium finibriatum, if evergreen.—IV. M. G. 2, Narcissus nanus; 1, 3, and 4, Dutch varieties of N. polyanthus.—R. McK. Acacia dealbata.—H. J. R. Cattleya Triance, a fairly good variety. The Dendrabes are apparently forms of D. lituiflorum, of which species Freemanni is a variety, and a much better one than either of the flowers sent.—T. Cornelius. Gomezarcispt.—K. T. 1, a Rondeletia, which we are unable to identify—what is its bistory? 2, Adiantum—send again with fruit; 3, Begonia, which we cannot name—is it not a hybrid? 4, Acacia Ricesana.

PEARS, PRONING: H. R., Tulk Hill.—The fruit-spurs stand too thickly on the branches. Cut some clean away, so that the remaining ones are at 8 inches apart. Reduce the number of wood-buds also in each spur by euting the shoots or secondary spurs clean out at their bases—so far for the winter work. In summer you can prevent great quantities of twigg growing to any size b keeping them pout allow one or two shoots on each spur to grow at fall length till the

second week in August. Then these full-length growths can be cut back to 6 inches, more or less, according as the habit of the sort is either long or short jointed: this will usually cause the formation of buds at their base, in which furit-buds will be in the greater number. If the spurs should be very old cut them all away, leaving the branches quite smooth; in the next summer great quantities of shoots will appear, from which you can select your new spurs, removing what are not wanted in the month of June early. In your soil, which is heavy and wet, trees will require shallow planting on impervious bottoms of rammed asbes, or chalk, and should stand rather on mounds than on the level. Your fruit was of fair size, but was either picked too soon, or failed to ripen thoroughly. With regard level. Your fruit was of fair size, but was either picked too soon, or failed to ripen thoroughly. With regard to the time when the effects of root-pruning, &c., become noticeable, results are mostly to be looked for in the second season after; although diminished luxuriance will be seen the first season, it being then that fruit buds are formed that carry fruit in the second year. Pigou rouge is, perhaps, like many other foreign kinds, not so good here as abroad.

toreign kinds, not so good neer as abroad.

PHYLLONERA CERTIFICATE: Phyllosetra. There are no printed forms to be obtained, so far as we know. Copy out the form published in our last, and attest it before the mayor of the nearest town. An ordinary magistrate will not do. Consult also the nearest French coosal as to what port your plants should be sent to, as it is only through certain ports that plants can now be forwarded.

can now be forwarded.

SCOTCH First: C. T. The peculiar growth, or "sport,"
you send is like that from which the Clan Brassilian
and other similar dwarf varieties take their origin.
We do not think that in this particular case the
appearance is due either to insect or to fungus. The
'bexenbesen' is due to a fungus growth of quite a
different character. We have seen in Switzerland
forms like that you send, both as branch sports and as
seedling plants on the ground.

CATALOGUES RECEIVED.

THOS. S. WARE, Hale Farm Nurseries, Tottenham— Choice Hardy Perennials, Hardy Florists' Flowers,

Woolson & Co., Passaic, N.J., U.S.A.-Hardy Peren-

WOOLSON & Co., Passaic, N.J., U.S.A.—Hardy resem-nial Plants, Bulbs, Ferns, &c. COMPAGNIE CONTINENTALE D'HORTICULTURE, Ghest —Flower, Vegetable, Tree and Shrub Seeds, JAMES CARTER & Co., High Holborn, W.C.—Farm

IAMES BACKHOUSE & SON, York-Alpine and Herba-

JAMES BACKHOUSE & SON, YOR—Alpine and Herisa-ceous Plants.

R. W. PROCTOR, Ashgate Road, Chesterfield—Flower and Vegetable Seeds.

EDWARD GILLETT, Southwick, Mass., U.S.A.—North American Plants.

HOGG & WOOD, Coldstream, N.B.—Agricultural Seeds. JULES DE COCK, Ghent—Trade Catalogue of Plants.

Communications Received: -P. & S.-W. G.-W. P.-C. Y. M.-W. P. R.-J. J. W.-T. B.-R. D.-H. L. & Co. -T. D.-R. & S.-C. B. P.-Antoine.-H. Correvon. -G. F. H., Ceylon.-C. W. D.-D. T. F.-Dr. Geere.-W. T.-A. O. W.-T. B. B.-R. E.-Dr. Belgerick.-T. S. W.-C. Dr. Russell.-S. T. D. D.-J. O'B.-A. L. -H. J. E.-Dr. Russell.-S. T.

Markets.

COVENT GARDEN, February 28.

BUSINESS is less active. Grapes are now coming short, and prices will advance week by week. James Webber, Wholesale Apple Market.

CUT FLOWERSAVERAGE WHOLESALE PRICES.								
s. d. s. d.	s. d. s. d.							
Abutilon, 12 bunches 3 o- 6 o	Narcissus (Paper-							
Arum Lilies, 12 blms. 4 0- 6 0	white), 12 hunches 3 0- 9 0							
Azalea, white, 12 spr. o 6- 1 a	Pelargoniums, 12 spr. 1 6- 2 0							
Bouvardias, per hun. 1 o- 1 6	- zonal, 12 sprays o 9- 1 o							
Camellias, per doz 2 0- 4 0	Primroses, 12 hun 0 6- 1 0							
Carnations, 12 blms. 1 o- 3 o	Primula, double, hun. 1 0- 1 6							
Cyclamen, 12 blooms o 3- n 6	_ single, 12 hun 6 o- 9 o							
Epiphyllum, 12 blms. n 6- 1 n	Roses (indoor), dox. 2 0- 6 o							
Eucharis, per doz 4 n- 6 o	 — coloured, doz 3 c→ 9 n 							
Gardenias, 12 blms 9 0-18 0	Snowdrops, 12 hun. 1 0- 2 0							
Heliotropes, 12 sp o 6- 1 o	Tropæolum, 12 hun. 1 6- 3 n							
Hyzcinths (Roman),	Tuberoses, per doz 4 o- 6 o							
12 sprays 1 0- 1 6	Tulips, 12 blooms 1 0- 1 3							
Lapageria, white, 12	Violets, 12 hunches o 6→ 1 n							
blooms 30-60	- French, per hun. n 4- o 9							
- red, 12 blooms 1 0- 3 0	- Parme, per bun. 2 0- 4 D							
Lilac, white Fr., hun. 8 0-10 0	Wallflower, 12 hun 4 0- 6 0							
Lily-of-Valley,12 spr. 0 9- 1 6	White Jasmine, per							
Marguerites, 12 bun. 3 0- 6 o	hunch 0 6- 1 0							
Mignonette, 12 hun. 3 0- 9 0								

PLANTS IN POTSAVERA	AGE WHOLESALE PRICES.
s. d. s. d.	s, d. s. d
Aralia Sieboldi, dnz. 12 0-24 n	Ferns, in variety, per
Arbor-vitæ (golden).	dozen 4 0-18
per dozen 6 0-18 0	Ficus elastica, each 1 6-7
- (common), dozen 6 0-12 0	Foliage Plants, vari-
Azaleas, each 2 6-5 n	ous, each 2 0-10
Begonias, per doz 6 0-12 0	Hyacinths, per doz, 8 n-10
Bouvardias, doz 12 0-13 0	Lily of the Val., pot 1 6- 2
Singularing mar J 9	
Cinerarias, per doz. 8 o-12 n	Marguerite Daisy,
Cyclamen, per doz12 c-30 o	per dozen 12 0-18
- Extra size, each 5 o-10 o	Myrtles, per doz 6 0-12
Dracænz term. doz30 n-60 o	Palms in variety,
- viridis, per doz12 0-24 n	each 26-21
Epiphyllum, per doz.18 o-30 n	Pelargoniums, scar-
Erica, various, doz. 9 0-24 0	let, per dazen 6 o 12
Euonymus, various,	Primula, single, doz. 4 o- 6
per dozen 9 o-18 o	Solanums, per dozen 8 0-15
Evergreens, in var.,	Tulips, per dozen 6 o- 9
per dozen 6 per d	

FRUIT .- AVERAGE WHOLESALE PRICES.

Apples, ½-sieve . . 1 n - 5 . Pears, French, doz. 1 6 - 9 n Cobs, per 100 ib...125 n . . . Pine-apples, Eog., b 1 6 2 0 Crapes, per 1b. . 3 0 - 8 0 — St.Michael's, each 2 0 - 8 0 Emons, per case . 15 0 - 25 n Strawberries, per 0 x 16 - x

VEGETABLES .- AVERAGE RETAIL PRICES. s. d. s. d.

Artichokes, Globe,	Herbs, per bunch o 2- o 4
per doz 3 0~ 5 0	Horse Radish, hund. 3 0- 4 0
- Jerusalem, hush, 4 o	Lettuces, Cabbage,
Asparagus, English.	per dozen 1 6
per 10012 0	Mint, green, bunch 1 0
- Buodle, small 5 o	Mushrooms, p. haskt, 1 0- 2 0
Beans, French, p. 100 3 6	Onions, per bushel 7 0
Beet, per dox x o	- Spring, per bun. o 6
Cabbages, per doz 1 0- 2 0	Parsley, per bunch o 4
Carrots, per bun 0 4- 0 6	Radishes, per dor 1 6
Cauliflowers, Eng-	Rhubarh, per bund. o 4- o 6
lish, dozen , 2 0- 3 0	Salsafy, per hundle o 8
Celerize, per root o 4- o 6	Seakale, per pugnet 2 0
Celery, per hundle 1 6- 2 6	Small salading, pun. o 4
Cucumbers, each 1 0- 2 0	Spinach, per hushel 4 o
Endive, English, per	Sprue, French, hund. 1 6
dozen r o	Tomatos, per lh 2 6
Garlic, per lh o 6	Turnips, per hun n 4

POTATOS.—Kent Magnums, 80s. to 110s. per ton; do., Regents, 80s. to 100s.; Champions, 70s. to 85s.

SEEDS.

SEEDS.

LONDON: Fib. 27.—There is now a steady demand for field seeds, under which the moderate stocks held are getting into narrow compass. Cable quotations for American Red Clover seed come somewhat higher, whilst Continental offers are by no means pressing. Choice home-grown seed comes forward less freely. For fine white a further advance must be noted: superfine samples are exceedingly scarce. Alsike and Trefoil are both dull of sale. Spring Tares move off freely at unchanged rates, In bird seeds there is no quotable change. John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.

At Mark Lane on Monday good white English Wheats ruled very firm; some descriptions of foreign red Wheat tended to harden in value, whilst quotations otherwise were study. By the word of the sale, but former rates steady, though tended to harden in value, whilst quotations otherwise were study. By the word of the sale, but former rates steady, though transactions were on a small scale, Beans and Peas showed unaltered value. Lentils tended against the buyer. Maize fully supported Fridny's rates, and on the week round corn was 3d. to 6d. dearer. Oats realised a further advance of 3d., making the rise 6d. to 9d. for the week.—Wednesday's trade, at steady rates. Flour met a dull sale, without quotable alteration in value. Barley was steady, Beans and Peas unchanged, and Oats were again higher.—Average prices of corn for the week ending February 22:—Wheat, 36d. 11d.; Burley, 31s. 10d.; Oats, 31s. 5d.; For the corresponding period last year:—Wheat, 41s. 9d.; Barley, 33s. 5d.; Oats, 21s. 7d.

CATTLE.

At the Metropolitan Market on Monday rather a better tendency was noticeable in the beast market at the opening, but it did not result in any quotable advance. Danish ranged from 45. 65. to 55. 44. Sheep met a dull sale at the recent decline. Lambs were dearer, at 85. to 85. 44. Frime calves were very scarce, and inferior not in request. Figs met a duil demand.—Quotations:—Beasts, 35. 84. to 54., and 55. 45. to 55. 104.; tolsves, 45. 84. to 65. 104.; sheep, 55. to 55. 85., and save no fresh feature in the trade. Fresh supplies were short but sufficient. Both beasts and sheep moved off at the prices quoted above. The demand for calves was steady.

Tuesday's Whitechapel market report states that trade was very quiet and prices as follows:—Prime old Clover, 95. to 10.5x; inferor, 6o. to 75.: Prime second cut, 90. to 10.5x; inset meadow bay, 80. to 85s; inferior, 6o. to 75.: Prime second cut, 90. to 65c; and straw, 28. to 37s, per load, 700. To 65c; and straw, 28. to 37s, per load, 700. Thursday there was a moderate supply. Prime qualities were in better demand, and prices remained about the same. — Cumberland Market quotations:—Superior Clover, 105s. to 112s.; inferior, 7os. to 84s.; and straw, 32s. to 38s. per load.

POTATOS.

The Borough and Spitalfields Markets reports state that moderate supplies were on offer, and met a quiet demand as follows:—Magnum Bonums, 80, 10 90,; 10 80;; [Champions, 70, 10 90; [Victorias, 60; to 70, per ton.—The imports into London last week consisted of 1103 bags from Hamburg, 100 Shanghai, and 90 bags 100 sacks and 69 packages from Poulogne.

COALS.

COALS.

The following are the prices current at market during the week:—East Wylam, 15x.; Ravensworth West Hartley, 14; 9d.; Bebside West Hartley, 14; 9d.; Walls End-Hetton, 16x. 6d.; Hetton Lyons, 15x.; Lambton, 16x.; Wear, 15x.; Hulam, 15x. 3d.; East Hartlepool, 15x. 9d.; South Hartlepool, 15x. 9d.; Thornley, 15x. 9d.; Tees, 16x. 9d.

Government Stock.—Consols closed on Monday at 101½ to 102 for both delivery and the account. Tuesday's final prices were, 101½ to 101½ for both the account and delivery. Business left off on Wednesday at 101½ to 101½ for the account. Prices on Thursday closed ½ higher for both account and delivery.

CANNELL & SONS' CRAND NEW PRIMULAS.

PRINCESS OF WALES, Delicata, and Lilacina. It is a well known and admitted fact, not only by the thousands who have seen our several houses (too feet each) devoted to their control of the property of the pr

The Gardeners' Chronicle, January 13, 1883.
"Primula 'Princess of Wales' (Cannell & Sons) is an excellent free bloomer that pleases everyboy; it cannot be too highly recommended as a decorative variety."

DELICATA (Fern-leaf).—The most charming and Invely nik or deep coloured Maiden's Blush ever offered, is one of our cedlings of 1830, and is pronounced by all a splendid acquisition. Seeds, 22. 6d. per packet. First-class Certificate.

LILACINA.—Another of our grand hybrids. When seed growing, with its bold strong heads of bloom, it attracts everyone; although it has not been awarded a Certificate, it is the best and the most distinct of that pleasing colour ever seet out. hest and the most distinct Seeds, 2s. 6d. per packet.

SWANLEY RED.—First-class Certificate.—Colour nearly equal to a Scarlet Geranium; caused quite a sensation, and sold better in the market than any other variety, 2s. 6d. per

SWANLEY PURPLE. — First-class Certificate.—A most brilliant colour. 25. 6d. per packet. SWANLEY WHITE.—First-class Certificate.—The purest and much the best white. 2s. 6d. per packet.

THE QUEEN.—First-class Certificate.—Very much the largest and finest white, slightly tinged pink. 25. 6d. per packet.

MARCHIONESS OF LORNE. — Similar, 2nd in some spects equal. 2s, 6d, per packet.

MARQUIS OF LORNE .- The best carmine. 25, 6d. per

Floral Guide CATALOGUE, post-free.

H. CANNELL & SONS.

TOPE-HOME FOR FLOWERS

Mitchell's Gooseberry.

W.M. MITCHELL having obtained a Stock of this extraordiany variety of GOOSEBERRY, is now prepared to offer, for the first time, Trees and prepared cuttings for present planting. To all Growers, Salesmen, and Eugers of Fruit attending Covent Garden Market, this fine arriety is too well known to need description, but to others it for picking when green. and callest for picking when green. a yr. Trees, 25, per 100; Cuttings, £5 per 1000.

Broadlaads, Enfield Highway, Middlesex.

The following CATALOGUES are now ready,

and may be had upon application. HARDY PERENNIALS (Illustrated),

CHRIPAT FERENNIALIS (IIIUstrated), Consisting of an extra choice selection of Hardy PERENNIALS, and such as are the most showy and useful, as well as many new and arrae forms; also selections of Aloine PHLOXES, IRIS KÆMFFERI, Hardy Terrestrial ORCHIDS, LILIES in pots, PRIMULA SIEBOLDIII, Miscellaneous IRIS, Hardy AQUATICS and BOG PLANTS, Ornamental GRASSES and BAMBOOS, ASTERS, CYCLAMEN, Rockwork SHRUES, &c.

HARDY FLORISTS' FLOWERS,

laciulius Shov and Border Carnations, Picutes, Clova, and Indicate Parkell Par

CHRYSANTHEMUMS.

A most complete List of all the sterling varieties in each section, and the best of the New Varieties.

CLIMBING, CREEPING, and TRAILING PLANTS.

A very extensive collection of the most useful Hardy Climbers.

THOMAS S. WARE, HALE FARM NURSERIES, TOTTENHAM, LONDON.

SPECIAL OFFER.

TREES and SHRUBS.

All we'l-groun and well-rooted.

ABIES DOUGLASH, 11/2 to 2 feet, 45. per dozen, 215. , EXCELSA (common Spruce), z to 3 feet, 10s, to 12s, 6d.

CEDRUS DEODARA, handsome plants, 3 to 4 feet, 12 6d.
each, 152, per dozzo; 4 to 5 feet, 22, each, 182 per
dozzo; 5 to 6 feet, 22, 6d. each, 44, per dozzo.
CUPRESSUS LAWSONIANA, 76 co 2 feet, 22, per doz n,

PICEA NORDMANNIANA, ab.ut 11/2 foot, 25. each, 18s.

per deten.

PINUS AUSTRIACA, 1 to 1½ foot, 12s, 6d per 100.

STROBUS (Weymouth), 1½ to 2 feet, 12s, 6d, per 100.

TAXUS BACCATA (Eoglish Yew), 1½ to 2 feet, 5s, per dozen, 30s, per 100; 2 to 2½ feet, 6s, per dozen, 40s.

AUCUEA JAPONICA, 1 to 2 feet, 52 per dozen, 354 per 100;

AUCUEA JAPONICA, 1 to 2 feet, 52 per dozen, 354 per 100;

larger, well shaped plants, 122, per dozen,

CHESTNUT, Horse, 12 to 14 feet, fine trees, 152 to 182, per

dozen; 15 to 15 feet, 182, to 212 per dozen,

HOLLIES, commoo, three times transplanted, stout and wellrooted, fine 10r hedge planting, 75 cd, per 100, 502, 10

Goz, per 1000. A quantity to offic of larger 5128.

"Yariegated, of the best kinds, 15 to 3 feet, 22 cd, 254, per

dozen.

LAURELS, common, transplacted, stout, 1 to 11/2 foot, 10s.
per 100; extra stout, 11/2 to a feet, 3s. per dozen, 2cs.

LAURELS, common, transplated, stout, 1 to 118 Joch, 103.

per 107; extra stout, 136 to a feet, 32, per dezeo, 282.

POPLARS, Black Italian, Lombardy and New Canadian, stout, 7 to 8 feet, 32, per dozeo, 315, per 102 go, 103.

Briver, 106 Jenes, 32, per dozeo, 315, per 105 go, 100.

RIVET, broad-leaved evergenen, bushy, 2 to 3 feet, 82. to 102.

RIVODER, 107, 108 Jenes, 122 62, per 100.

RIVODER, 108 Jenes, 122 62, per 100.

RIVODER, 108 Jenes, 124 Go, 124 per dozeo.

Jist, 108 Jenes, 124 Go, 124 per dozeo.

Jist, 108 Jenes, 124 Go, 124 per dozeo.

RIVODER, 108 Jenes, 124 per dozeo.

RIVORD, 108 Jenes, 125 per dozeo.

RIVOR, 108 Jenes, 125 per dozeo.

RIVOR, 108 Jenes, 126 per dozeo.

Standards, strong, 127. per dozeo.

Standards, strong, 127. per dozeo.

THORN 108 Jenes, 128 per dozeo.

A variety of the finest and most free blooming kinds; strong 97. per coccept dwaff bushes, strang, 57. per 102 per dozeo.

A variety of other NURSERY SIVOCK to offer, including a large COLLECTION of FRUIT TREES.

WALTER CHAS. SLOOUCK, Gloworth Old Nursery, W.King, Survey.

NEW PEA for 1884.

L Y E 'S F A V O U R I T E.

First-class Certificate Royal Horticullural Society.

A splendid White Marrow, height 4 feet, bearing a profusion
of long, handsomely curved pods, with so or 11 delicions
Marrow Peas in each We have purchased the entire stock of
Mr. James Lye (the Raiser), for distribution.

Price per Quart, 5s.; per Pint, 2s. 9d. DANIELS BROS., Seed Growers, Norwich.

NEW MELON for 1884. ST. BLAISE

This splendid green fleshed Nelon was raised by Mr. W. Carmichael, who was for many years Head Gardener to H. R. H. He Prince of Wales. The firnti are handsomely and evenly netted, and of large sire, weighing 4 to 6 p unds each. The Havour and delicate aroma. This variety will be found most valuable during the shooting season, owing to its lateness in ripening, when all other jots in the house are ever, oft in carrying its large, handsome, and fine flivoured fruit the might to the end of November. Stock very limited.

Price 5s. per packet, to be obtained only of

DANIELS BROS., SEEDSMEN TO H.R.H. the PRINCE OF WALES, NORWICH.

OFFER. SPECIAL

GLADIOLUS BRENCHLEYENSIS. - The fluest bright vermilion scar et Gladiolus for general effect in cultivation. Good sound bulbs, 1s. per dozen, 5s. per

MIXED HYBRID GLADIOLI, from the finest named sorts, 2s. per d.z:n, 10s. per 100, 80s.

HYBRID SEEDLING GLADIOLI.-Finest

varieties, mixed, 202, per 100, 32, per doten
NAMED GLADIOLI. — Best Exhibition
varieties, twelve very fine, 52.: twelve extra fine, 102.
Larger collections see Caralogue.
Above Gladioli all Carriage Free.

BIDDLES & CO., THE PENNY PACKET SEED COMPANY, LOUGHBOROUGH LEICESTERSHIRE.

CABBAGE PLANTS, 1,000,000 of Early Rainham and Enfield Market, 22: 6d, per 1000 of 12: 0; Red Dutch for Pickling, 5; per 1000; 2il from the very best stock 3-yr. Connover's Colossal ASPARAGUS ROOTS, fuels, Bt. per 1000; 2-yr. do, fine, 15c, per 1000. Best Soverens HUBARB ROOTS, Earliest in Cultivation, for Patiting-Out, 22; per dozen. PENNYROYAL and RUR KOOTS, 5; per 1000. Thus Magnum Bomm FO IATUS, £3 100, per 100. Thus Magnum Bomm FO IATUS, £3 100, per 100. The Third Sab. Do. 2, 3d, per putud. All new and centilies. Permis cash. enuine. Terms cash. RICHD. WALKER, Market Gardens, Biggleswade, Beds.

L'INE WELL TRANSPLANTED TREES. HINE WELL I RANSPLANT LD TREES,
—Laurels, 1/2 to 2 feet, 5/2 per 1000; Fluus Laricio,
1/2 to 2 feet, 3/2 per 1000; Fluus sustriaco, 1/2 to 2 feet, 3/2
per 1000; Flux level to 2/2 feet, 2/2, per 1000; flux
Nordm uninans, 1 to 2 feet, 4/2 per 100; Flyramidal Yww, 2 to
3 feet, 4/0 per 100; White Clove Caractusos The Bride and
Alrs, Swiking, 8/00 flux level flux level 2 feet
W. JACKSON, Elskectown, near Kidderminster.

OFFER. SPECIAL

BROOM, common, in drills, 2s. 6d. per 1000. DEUTZIA CRENATA fl-pl., transplanted 1883, 2 to 3 feet, 8s. per 100, 50s. per 1000.

GORSE, common, in drills, 2s. 6d. per 1000. 2-yr. in drills, 5s. per 1000. OAKS, English, transplanted and stout, 12 to 2 feet, 18s. per 1000.

ASPARAGUS, 2-yr., strong, 1s. 61. per 100, 10s. per 1000.

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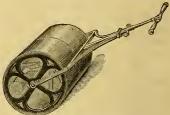
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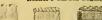
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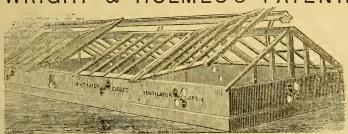
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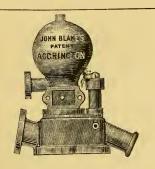
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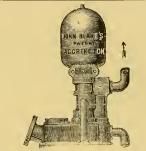
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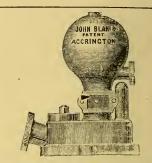


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Established 1841.

No. 532.-Vol. XXI. SERIES.

SATURDAY, MARCH 8, 1884.

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CONTENTS. ILLUSTRATIONS. Acmosporium tricephalum ... Apple Golden Spire ... Picea Omorika, bud, scales, seed and leaf of , shoot of ... Clerodeadron trichotomum ...

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ROYAL HORTICULTURAL SOCIETY, NOTICE !- COMMITTEES' MEETINGS, Fruit and Floral, at 11 A.M., in the Conservatory; SCIENTIFIC at 17 M. GENERAL MEETING for the Election of Fellows, &c., at 37 M., in the Conservatory on TUESDAY NEXT, March 11. Promenade and Band of the Royal Horse Guards from half-past 32 M. Admission, 11.

past 3r.M. Admission, 11.

POYAL BOTANIC SOCIETY GARDENS,
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Covent Garden, W.C., on MONDAY, March to, at half-past
20 Clock presuley, rare Lilles, including L. neigherense,
L. gigancium, L. Harrisii, L. Krameri, and others; an importation from the Cape of H-EMANTHUS, FREESIAS,
MILLAS, L.YCLOBUTHRAS, &c., proof. UTBERGES,
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Laulia anceps.

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masses of a new white type of LELIA ANCEPS of great
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and of the Auctioners, St. Ecalogues End at the Rooms, and of the Auctioners, St. et Park, Feb. 1.

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MESSRS. PROTHEROE AND MORRIS Sideup Hill Nursery, Foots Cray, rmile from Sideup Station, on TUESDAY, March 11, at 12 of Clock precisely, a further portion of the NURSERY STOCK, one Hollies, 1000 Forest Teck, 20 to 18 feet; 1500 Fruit Trees, 20 to 18 feet; 1500 Fruit Trees, 20 to 18 feet; 400 Beech Trees, 10 to 18 feet; 1400 Beech Trees, 10 to 18 feet; 1500 Fruit Trees, 10 to 18 feet; 1500 Fru

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GREAT UNRESERVED SALE under the will of the late
MESSRS. PROTHEROE AND MORRIS
Are instructed to SELL by AUCTION, on the Premises,
The Nursery, Feltham, Middlesex, close to the Railway
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Wilhout Reserve, a further portion of the unusually well-grown NURSERY STOCK, including 2002 English Yews, 110, feet;
500 Itish ditto, 1 to 2 feet; 500 Thiab V Dendran, C. atlantica,
100 Interest Lawoni, Fieca Mordanni, P. lasciccarpa, and other Rododdendrons, 100 feet and 100 Interest Lawoni, Pieca Mordanni, P. lasciccarpa, and other Rododdendrons, 100 feet and 100 Interest Lawoni, Pieca Mordanni, P. lasciccarpa, and other Rododdendrons, 100 feet and 100 Interest Lawoni, Pieca Mordanni, P. lasciccarpa, and other Rododdendrons, 100 feet and 100 Interest Lawoni, Pieca Mordanni, P. lasciccarpa, and new Complex Com

Cambridge Heath, London, E.
CLEARANCE SALE.
Important to Horticultural Builders, Nurserymen, Florists,

MESSRS. PROTHEROE AND MORRIS
are instructed by Messrs. Alfred Carter & Co. (in consequence of the expiration of the Lease of this portion of their premises) to SELL by AUCHION, at the Store Vard at the back of their premises in Martha Street, Cambridge Health, on THAN SOLD HANDER ALENCHANT, including an assortment of Planks, Deals, Battens, Floor Boards, March Lining, Moulding, the Erection of Two Sheds, &c.
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Thursday Next.

Ton ROSES, BULBS, and PLANTS.

MESSRS. PROTHEROE AND MORRIS
will SELL by AUCTION, at their Central Sale Rooms,
for and 68, Chepaside, E.C., on THURSDAY DEXT, at
half-past 12 o'Clock precisely, 1500 Standard and Dwart
ROSES of the best named varieties, from well-known English
Nurseries; an assortment of Hardy Spring-blooming PLANTS
and BULBS, English-grown LILLES, &c.
On view morning of Sale.
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Priday Next.

ODONTOGLOSSUM POLYXANTHUM.

ODONTOGLOSSUM POLYXANTHUM.

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bave received instructions from Mr. F. Sander to SELL
by AUCTION at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY NEXT, at half-post-vertice Solic,
precisely, a large and fine importuous processing to the processing of the control o

other importations.
On view morning of Sale. Catalogues had at the Rooms, and at the Auctioneers' Estate Offices, 8, New Broad Street, E.C.

On view morning of Sale. Catalogues had at the Rooms, and at the Auctioneers' Estate Offices, 8, New Broad Street, E. C.

Anerley, S.E.

In the High Court of Justice, Chancery Division,—Re the General Horticultural Company (John Wills), Limited.

M.E.SSRS PROTHEROE AND MILLS AND MILLS

Preliminary Notice.

The General Horinthural Company (John Wills), Limited.

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AUCTION

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AUCTION the various LEASES, and the STOCK and

UTENSILS in Trade situate at the Royal Exotic Nursery,

Onslow Crescent, S.W.; the Sussex Place Nursery, Surkensington; and the Fulham Road Nursery, Fulham, S.W.

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offered. Many of the extra fine sorts formerly almost excluded from cultivation on account of their very high price are in our even its reduced to extremely underate figures. Our ceneral CATALOGUE (price 4/) contains a calcuared plate of Gladiola. The following collections are very economical, and sure in

please:

 | 1 bulb | 3 bulbs | 6 bulbs | 6 cach | 7 ca " good sarts only, per doz., 25.; 100, 125.; 1000, 955. HOOPER AND CO., Covent Garden, London, W.C.

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Aluwick Seedling. Frankenthal. Muscat of Alexandria, Madresfield Court.

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Strong Fruiting Canes, 5s. 6d. and 7s. 6d. each.
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SINGLE DAHLIA SEED, saved from all the best varieties, in packets, with directions for raising, post free 18. 6d. KEYNES, WILLIAMS AND CO., The Nurseries, Salisbury.

C A B B A G E P L A N T S,
strong, healthy, and true, autumn sown.
ENFIELD MARKET
ROBINSON'S DRUMHEAD
RED DUTCH, 55 per 1000.
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SEED POTATOS.—Potatos to grow for Exhibition! Potatos for the Field! A change of seed always pays. All the best and newest sorts at reasonable prices. All the best and newest sorts at reasonable prices. The properties of the price of the properties of the price of the properties of the price of the properties of the

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WHITE CLOVE PINK.—Many thousands of extra, extra strong plants of the New Hybrid White Know for hardiness and tree flowering. The plants are about these times as large as those generally offered. Per dozen, and 9s.; per 100, 40s. and 50s.; maller plants—per dozen, 4s. and 5s.; per 100, 30s. Maller plants—per dozen, 4s. and 5s.; per 100, 30s.

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Apply to L. PAILLET, Nurseryman, Châtenay, near Sceaux, France.

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ARCH, special offer to clear ground. Stout and well rooted, a roj feet, 15:, per 1000; 3 to 4 feet.

Net cash.

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AND F. SHARPE are prepared to make
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MANGEL WURZEL and TURNIP SEEDS of 1885 grade
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A DIRONDACK POTATOS,—20 Bushels A for Sale. Good sample-true; 75. 6d. per cwt. on rail One or more lots.—W. TUCKER, Jun., Christchurch, Hants.

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FINE WELL TRANSPLANTED TREES. Laurels, 1½ to a feet, 5, per 1000; Finus Laricio, 1½ to a feet, 9, per 1000; Fous Laricio, 1½ to a feet, 9, per 1000; Fous Laricio, 1½ to a feet, 9, per 1000; Focho Fir, fine, 9, to 12½ feet, 90, per 100; Fyramidal Yews, 2 to Nordmanniana, 1 to a feet, 400, per 100; Fyramidal Yews, 2 to 3 feet, 400, per 100; White Mark Shakins, good plants, 900, per 100
W. JACKSON, Blackelown, near Kidderminster.

DWARF MAIDEN FRUIT TREES.
Peaches: Albatms, Condor, Dagmar, Dr. Hogg, Early
Beatrick, Early Albert, Early Affred, Early Acquirable, Early Albert, Early Affred, Early Acquirable, Early Affred, Early

per 1000.

Cherries and Plums, of sorts, 421, per 100, £20 per 1002.

Victoria Plums, 555, per 100.

These are strong, healthy, finely ronted trees, and the stock of the late Messrs. Ossona & Sons.

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DOTATOS.—Several tons of the above for Sale. Warmented true. Grown for three years on red land from seed and
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Trade offer.

PRIMROSES (Double Yellow), fine, strong, market stuff, coming into bloom, 145. per 100.
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BROCCOLI.
Mr. S. Ledsham, the raiser of this unequalled Braccoli, "which was awarded as First-class Certificate by the Rayal Horticultural Society, May pa 385 and in hervesting this season a good special Liberal Offers per punud to the Trade. Also a special Liberal Offers per punud to the Trade. Also a quantity of BRUSSELS SFROUT SEED of a very superior strain, which will be sold at a low price. Terms on application to

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STRAWBERRY PLANTS, in twenty select varieties.—Price 2s. 6d. per 100; 10s. per 500; 17s. 6d. per 100. Sample box of PLANTS by parcels post, 3d. Pamphlet on Strawberry growing, 6d. W. LOVELL AND SON, Strawberry Growers, Driffield.

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TURAL SEEDS is now ready, and comprises all the hest
kinds of Turoip, Mangel Wurzel, Cabbage, Carrot, and other
Seeds grown on their own Seed Farms from the finest selected
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USEFUL COLLECTIONS of SEEDS for various sized gardens, the selection being the result of unbiassed experience. For particulars see Illustrated List, which will be sent free, together with Order Sheet, for the convenience of those who prefer to make their own choice.

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R R U I T T R E E S (74 acres).—

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RETAINES, PRACES, PLUNS, CHERRIES, PRACHES, NECTARINES, APRICOTS, &c., as Standards, Dwarfs, Pramids, Bushes, Cordon and Trained Trees in great variety. WINES, excellent canes, 3s. 6d. to 2ss. 6d. NCCHARD WINES, excellent canes, 3s. 6d. to 2ss. 6d. NCCHARD Descriptive LIST, containing a sketch of the various forms of Trees, with directions for Cultivation, Soil, Drainage, Manure, Pruning, Lifting, Cropping, Treatment under Glass; also information at 8th North Control of the Control of the

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Suitable for Field and Market Garden Culture. Suitable for Field and Market Garden Culture.

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AUREL, Common, 1-yr., 18s.; 2-yr., 22s.; Colchic, r.yr., 25s. per 1000; 2 feet, fine, 16s. per 100; 4 to 5 feet, extra bushy, 9s. per dozen; rotundifolia, 2 to

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VERGREEN OAKS, 4 to 6 inches, 80z, per 1000.

WEET BAY, 4 to 6 inches, 70z, per 1000.

WEET BAY, 4 to 6 inches, 70z, per 1000.

SCALLOVIA MACARATHA, 12 to 15 inches, 20z, per 100.

SIMONSIR MACROPHYLLA, 2 feet, 122, per 100;

SIMONSIR OAKS (1025) feet, 102, per 100.

VI, Irish, 2 to 10 feet, 20z, per 100; maculata grandifolia, 15 febt, 20z, per 100; maculata grandifolia, 20z, per 10z, per 10z,

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MANETTI STOCKS, strong, 26s per 1000.

GARLIES MITCHELL, Nurseryman, Stranraer.

Mitchell's Gooseberry,

W.M. MITCHELL having obtained a Stock
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any be described as the largest, greatest cropper, and earliest
or picking when green. x-yr. Trees, asr. per 100; Cuttings,
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Produinnes, Enned Highway, Anddiesex.

O R E S T T R E E S
to be sold cheap

500,000 LARCH, a to 5 feet, oor. per 1000; 3 to

500,000 CHESTINUT, Spanish, 1½ to 6 feet.

20,000 SPRUCE, ½ to 3 feet.

20,000 SCOTCH, ½ to 4 feet.

OAK, Seedling, 2+yr, 6t, per 1000.

dlso BEECH, HAZEL, WILLOW, THORN QUICK, &c.

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BIDE, making Asparagus growing quite a speciality, can this season offer some very fine Plants, yr. and ayr., from drills, also extra good stiff, transplanted, yr. and ayr., which, wherever planted, cannot fall to give the restets satisfaction. For samples and price per 100 or 1000, pply to S. BIDE. 4 fee. 20

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JOHN SHARPE is now offering to the
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A SPARAGUS. — This delicious vegetable
does not require half the expense often incurred. For
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et 100; extra strong, ditio, 2-yr, old, 3z. 6d. 9c.

RICHARD SMITH AND CO., Worcester.

100-Flowering Shrubs-100

100-Flowering Shrubs-100

NONE HUNDRED NAMED VARIETIES, Carriage Paid to Edinburgh, Newcastle, Hull, or
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SEEDS.—Vegetable, Flower, and Farm, care-fully selected, reliable, and moderate in price. Illustrated LIST, containing copious interesting and useful information,

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ROBERT AND GEORGE NEAL, having a Surplus Stock of the above, beg to offer ten thousand, 1-yr. old, for £5, cash; also 3 and 4-yr. old. Samples and price on annifestual.

on application.

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To the Trade.

POTATOS.—Myatt's Early Prolific Kidney.

truck. Apply
W. JUHNSON AND SON, Seed Growers and Merchants,
Boston.

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TO RESTTTREES.

The following being on land let for building purposes, and must be cleared by March pext, will be given at the following prices. All are offered so long as unsold!

100,000 transplanted LARCH, stout and clean, 2 to 3 feet, 103. per 1000, 300,000 2-yr. Seedling SCOTCH FIR, Native, 15. 6d. per 1000.

300,000 2-yr. Seedling SCOTCH FIR, Native, 12. 6d. per 100.00 2-yr. Seedling, 1-yr. transplanted, SCOTCH FIR, Native, 4d. per 100.00 2-yr. Seedling, 1-yr. transplanted, NORWAY 100,000 2-yr. Seedling, 1-yr. transplanted, NORWAY 100,000 2-yr. Seedling, 1-yr. transplanted, White AMERICAN SPRUCE, 152. per 1000.

20,000 2-yr. Seedling, 2-yr. transplanted, PINUS LARCIO, 10,000 2-yr. Seedling, 2-yr. transplanted, PINUS MON-20,000 PINUS MONTANA, 12 to 18 inches, 15t, per 100. 3,000 PINUS CEMBRA, 18 to 2 sinches, 15t, per 100. 4,000 PINUS COMPORTA, 12 to 16 inches, 15t, per 100. 4,000 PINUS COMPORTA, 12 to 16 inches, 15t, per 100. 4,000 PINUS COMPORTA, 12 to 16 inches, 15t, per 100. 4,000 PINUS COMPORTA, 12 to 16 inches, 15t, per 100. 4,000 PINUS COMPORTA, 12 to 16 inches, 15t, per 100. 4,000 PINUS COMPORTA, 12 to 16 inches, 15t, per 100. 4,000 PINUS CEMBRA, 18 to 2 sinches, 15t, per 100. 4,000 PINUS CEMBRA, 18 to

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Masterpiece, it, per packet,
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flower: Smith's Enjoyee Smith's Improved Wisdon, icd. per quart,
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HUGENE VERVAET DE VOS, Indian Azalea Nursery, Swynaerde, near Ghent, Belgium, offers LATANIA BORBONICA, well shaped, strong plants, two to three leaves, characterised, in 5-inch pots, 1002, per 100.

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DWARF - TRAINED FRUIT TREES,
NETA good. APPLOTS, PEACHES, NECTARINES, APPLES, PLUMS, CIERRIES; also very fine
Pyramid and Sundard PEARS, strong, for Orchards.
Chichester ELMS and POPLARS, 9 to 15 feet, Dwarf
ROSES, Gloire de Dijon on Brier, hne Standard and Dwarf
ROSES in great variety.
W. B. ROWE AND CO. (Limited), Barbourne Nurseries,
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HODODENDRON NOBLEANUM, nice

amed sorts, about 2 feet, bushy, 2z. 6z. each; PONTCUM,

transplanted, bushy, 12 to 18 inches, 18z, per dozen; other choice

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HOLLEN, 18 to 1 low prices. LAUREL, common,

2½ to 2 feet, 18z, 1 to 2 feet, 18z, 1 to 2 ½, feet, 20z, per 100;

SCUM, 1½ to 2 feet, 18z, 1 to 10 ½, feet, 20z, per 100;

PINE, 1½ for 1 feet, 28z, per 100. Black Austrian

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ROSES, in post, my selection, 0, per dozer 100.

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IN ONE HUNDRED DISTINCT NAMED
VARIETIES, fine well-rooted pinnts, from 1 to 2 feet
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First-class Certificate was awarded at Kensington. A beautiful rose-coloured Self, very highly scented, of great size, very full, and of perfect shape; does not burst the calyx, a very free bloomer and vigorous grower, and perfectly bardy. See Garderst Chronick, August 4, 1883, page 146. Frice 44, 55. and 6r. a pair. Cash with order.

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ROSES.—Standards, 2½ to 4 feet; ditto 1½ to 2 feet. Fine healthy plants, and embracing the best varieties in cultivation of Hybrid Perpetuals, &c.

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AZALEA PONTA: to 1½ foot, 20st. per 100, 07 1903. per 1000; 1½ to 2 feet, 30st. per 100, 07 283s. per 100, 07 16ss.

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per 1000; 1½ to 2 feet, 30st. per 100 ar 22ss. per 1000.

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VILLIAM BADMAN Offers as below, all

TRICOLOR strong, bealty, and well-rooted:—

Fried Cheap Pelargoniums, &c.

Sir R. Napier, Lady Cullum, 31, per dox., 201, per 100.

BRONZE—McMahon and Black Douglas, 21. 6d per dozen

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18. per 100.

18. per 100.

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18. per 100.

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OGOLD LEAF-Crystal Falace Gem and Happy Thought, 22.

Per dozen, 127 per 100.

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per dozen, 127 per 100.

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Mrs. G. Smith and Lucius, fine salmon, 12. 6d, per dozen, 101, per 100.

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Mrs. G. Smith and Lucius, fine salmon, 12. 6d, per dozen, 101, per 100.

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CALCEOLARIA — Golden Gem, rooted cuttings, strong, 52. per 100.

ELOBELIA — Children Gem per 100.

CALCEOLARIA — Golden Gem, rooted cuttings, strong, 52. per 100.

CHELOTROPP—finest dark sorts for bedding, 61, per 100.

CHELOTROPP—finest dark sorts for bedding, 61, per 100.

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CHERRY, double-flowering, 8 feet high, good heads and well rooted, 155, per dozen.
POPLARS, Lombardy, 10 feet, well rooted and strong, we per dozen, 200 feet stems, good broad tops and roots, 155, per dozen.
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HOLLY, Golden Queen, 18 inches, 16z. per dozen; 2 feet, 21z. per dozen, 18 inches, 16z. per dozen; 2 feet, 21z. per dozen, 21z

Pelargoniums.—Pelargoniums.

JAS. HOLDER AND SON have to offer the above in strong healthy plants, established in small 60-pots, consisting of Show, French, and Spotted varieties of per a co. also Extra Strong Plants in 48-pots, go per dozen, 6ar, per 1co. Also Double-flowering Iny-leaved PELARGONIUMS, in six varieties, in 6a and 49 pots, at same prices. Packing included. Cash with order.

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No S E S (20 acres) — Well-rooted, many shooted, truly named, of matured vigorous growth, and of the beat kinds. Bushes R. S. & Co. Sciencino, 8t per dozen, 6ar. per 100; packing and carriage free for cash with order. Standards, 15s. per dozen, or not free for 120r. White world-famed Rosset cannot fail to give the greatest satisfaction Descriptive LIST free on application.

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ARCH TREES.—30,000 Stout young Larch
trees, 5 feet, £r per roop, cheapest and best of anything
for Training Stakes, Free on Rail. No charge for packingApply to W. JACKSON AND CO., Bedale.

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CEED POTATOS, of first-class quality.

About 62 tons of Champions (from Scotch Seed), and
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Prices, low, on application.
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Extra large FEUTING TREES of APPLES, PEARS,
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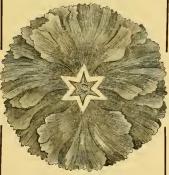
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Gardeners' Chronicle.

SATURDAY, MARCH 8, 1884.

THE SEAWEED HARVEST IN JERSEY.

THE whole of the island of Jersey is encircled by a continuous chain of granitic rock, more or less exposed at low-water, and more or less distant from the shore. rocks, the bugbear of the local navigator, rendering, as they do, his harbours so difficult to approach and so unsafe to move in, are to the local agriculturist "ports and happy havens," so to speak, for upon them grow perpetually and luxuriantly the seaweeds with which year after year he fertilises his lands, and which, under the old Norman-French name of vraic, he so generally and freely uses.

Etymologists trace the root of the word to the Arabic word warak, meaning the leaf of a tree; from warak they derive the old Latin nouns varescum, or variscum, signifying shipwreck; to either of these bases they go for the French word varech, which stands in that tongue for seaweeds, or for wrecking at sea; vraic is but another and more modern spelling for varech, and, therefore, implies, say these experts, "leaves torn from the rocks and cast upon the shores," as it also denotes ships subject to the same calamities. The argument is ingenious if nothing more. Need it be said that our own once common word wrack, for wreck, and the still used one wrack, for marine algae, have the same parentage as vraic?

This vraic, then, consists chiefly of plants of the genera Fucus and Laminaria, with a few others sparsely mixed with them. The Fucaceae are composed of F. vesiculosus, F. serratus, and F. nodosus. The Laminariæ are L. digitata and L. saccharina, and the other much less abundant kinds are certain sorts of Sphacelariæ and Ulva. The Fuci grow upon the rocks, from which at certain seasons and under certain restrictions, which we shall presently hint at, they are cut, forming what is technically called vraic scié; the Laminariæ, with, more over, some Fuci and other algæ, are drifted on shore from outlying reefs in the Channel, or even from the Atlantic Ocean, and for this reason go by the name of vraic venant or venu. Upon this flotsam and jetsam we shall also touch. Rich in many of the salts of potassium and sodium are most of these seaweeds; the Laminaria saccharina has been found to contain in every hundred parts of its soluble ash no less than 60 per cent. of various compounds of these bases, and the Fucus vesiculosus has yielded 51.49 of similar ones from an equal quantity of its ash. Free sulphuric acid iodine, calcium, and potassium also exist minutely in almost all of them, and in the simply dried weeds the percentage of organic matter is from 70 to 83 per cent. But we may add, that it has been found by a local experimentalist that at different seasons of the year the quantities of organic and inorganic matter materially differ, and that certainly in the Fuci used in Jersey for manure the summer cuttings are more abundant in mineral fertilisers than are those of the spring.

Now, as it so happens, the soil of Jersey, and indeed of the Channel Islands generally, is singularly deficient in lime and other earthy salts, and this want was recognised even in

those bygone times when agricultural chemistry was in its infancy. Then by a sort of happy-go-lucky "find" the worthy islander discovered that the seaweeds springing up so thickly about him, and thrown upon his beach by stormy winds, were the very things he needed to supply the default in his land. So he set to work to cut and to gather, and what he did centuries ago he continues to do in the present day. Quaint Mr. Falle, chaplain to William III., and the historian par excellence of Jersey (1694), alluding to this want of "chalk-lime and marle in the island, says, "but Nature has supplied us with what fully answers the end in husdandry, It is a weed, but a weed more valuable than the choicest plant cultivated in our gardens, and the vast and amazing chain of rocks that environs our island is the grand garden of the vraic." Nearly 200 years have slipped away since this divine said his say; the "chalk-lime and marle," to repeat his words, are still non inventi in the ground, and the vraic is still its staple fertiliser; but its fertilising properties are now added to by phosphoric and ammoniacal composts; and where the Jersey farmer wants lime he will not trust to his Fuci or his Laminariæ to get it from.

The vraic venu consists mainly of the Laminariæ. Storm-waves have torn them forcibly from their beds, and brought them shorewards, where they become any one's legitimate property and right of capture at any time or at any season. So, after the godsend of a heavy gale, the fishers for vraic venu, armed with large wooden rakes, are many and eager. But with the vraic scie-the cut weeds-it is quite another matter. This must be cut with a sickle from the gardens of the wrack, as Mr. Falle words it, cut under certain legal permissions, emanating twice a year-in spring and in summer-from the Royal Court, and then only for a definite number of tides, cut between certain hours, and cut under certain agricultural conditions. All these are too numerous to detail, but woe betide the delinquent, or the poacher upon the vraic preserves, for fines, never under five pounds, and mounting to as many as fifty, await him. Until, therefore, Pabandon du Varech, as the law styles it, is announced publicly and legally, touch it, we repeat, who dare! And even when the permitted harvest is going on, there are many salutary restrictions as to precedence, proprietary, seignorial and parochial rights to be religiously complied with before the general oi-polloi swoop, and disposal can be made. This cutting and gathering is a very picturesque scene, and is worth a word of outline. At low spring-tide the reapers may be seen by scores, a mile or two from the scaboard, cutting and shearing where the crops are heaviest. Carts having been dragged through sand and slush soil, over low reefs, by pools, and other impediments, to these busy spots, and loaded-loaded to the utmost of horse-powerreturn in long strings of Indian file to the shore, thence to different farms, the water streaming from the dripping algae. This waic will sell for 10s. and more per load of over 1 ton, whereas the drift vraic may be bought at from 2s. upwards, according to the distance it is carted from the shore.

The vrate sett of the spring cutting now going on is generally applied wet as it is to all grass and pasture lands, and left untouched to decompose and soak in. It seems in this condition to render the grass crisp, tender, and highly palatable to cattle. The weeds of the summer cuttings in July and August become available for roots of sorts and again for berbage.

The drift wrack—vraic venant, gathered just now and a little while back—is ploughed deeply into the fields for Potato crops and general gardening purposes; later in the season, say after April and until August, it will be collected, every scrap of it, by cottagers

along the shores, dried, stacked, burnt as fuel, and the ash sold to the farmers as a top-dressing for corn lands.

It will take from 10 to 12 tons of vraic to fertilise as richly as the Jerseyman does fertilise an acre of his ever-being-nu ised ground, but besides vraic some small proportions of artificial manures will be required to produce the heavy crops he habitually calls upon his land to bring forth.

It is said that, excepting the Faroe Islands, seaweeds are more extensively used in Jersey than in any other part of the world for agricultural purposes. H. L. C.



DENDROBIUM SIGNATUM, n. sp.*

This is a good deal like Dendrobium Bensoniæ. The old stem is rather compressed and furrowed, yellowish. Inflorescence at present one-flowered. Chin very blunt-angled. Sepals ligulate acute. Petals broader acute, both reflexed, lightest ochre-white to white (no doubt white when opening). Lip shouldered at the base, being nearly square and narrow, and suddenly enlarged; in the middle is a triangular abrupt body, blunt at the sides. sulphur coloured, with a light longitudinal line at the base, in the situation where in some species velvet is to be seen. The disc is adorned by a broad transverse radiating brown blotch, and on each side of the basilar part there are four similar brown lines, going out nearly at right angles, and running, of course, nearly parallel. The column has two small apiculi at the top, and angles at the side of the stigmatic hollow; it is light green with some mauve longitudinal lines under the stigmatic hollow. The circumference of the lip may best be compared to that of Dendrobium nobile. For this neat novelty I have to thank Mr. W. Bull, who has introduced it from Siam. H. G. Rehb. f.

ODONTOGLOSSUM WILCKEANUM SULPHUREUM,

A grand new variety, of the finest sulphur colour, with a few red blotches and lines on the lip and column, and one or two red blotches on the lateral sepals. The sepals and petals are much elongated, and the whole flower is one of the most striking I ever saw in an Odontoglossum. There was sent at I to same time a remarkably glorious specimen of O. Wilckeanum albens. I received these fine things from Mr. Ch. Vulysteke, Loochristi, Ghent. H. C. Rebb. f.

Dendrobium superbum (Rehb. f.) var. Burkei, n. var.

An unusually fine white-flowered variety with two light blush rose cheeks on the base of the disc of the yellowish-white lip, and some purple on the column. It has the usual Rhubarb perfume. It was kindly sent by Messrs. James Veitch & Sons, and is dedicated to its discoverer, Mr. Burke.

It is well known that the Dendrobium macrophyllum and macranthum of gardeos (Sir William Hooker and Dr. Lindley) belong to this, but that Achille Richards' homonyme species are of prior date. H. G. Rehb. f.

DATE PALMS,—As an instance of the time Date Palms require to develope into fruit-bearing trees, says Mt. Prestoe in his report on the Trinidad Botanic Garden, "I might mention the flowering and fruiting of specimens planted out by me in 1869 from tubs in which they had grown—having been small plants in Bamboo pots in 1864—about twenty years. Their stems are now 12 feet high, having magnificent heads, large bunches of fruit having been produced last year."

OUTDOOR CAMELLIAS.

A CORRESPONDENT writes from a southern county: "The Primroses and Camellias outdoors are blooming beautifully." We have Primroses in abundance. especially the garden hybrid, or various coloured kinds, within easy distance of the metropolis; but of outdoor Camellias few indeed. Really it is exceedingly difficult to induce gardeners, or even their employers, to believe in the hardiness of the Camellia, for, treated ever since its introduction from Japan as a greenhouse plant, it is still in the majority of cases regarded as tender and needing house protection. Some few, very few, however, have boldly planted Camellias as though they were hardy shrubs, and have been for their boldness amply rewarded. Others less daring have planted against walls. At Chiswick the Camellia does well against a north wall, but in other localities we have seen grand trees against south walls, not so much that the plants needed the warmer aspect as that in such positions the summer wood is more fully matured, and free blooming is promoted.

Some of the best examples of outdoor Camellias in the kingdom are found in Mrs. Crabbe's beautiful garden at Glen Eyre, Southampton, respecting which much has been said from time to time. There not only do they thrive splendidly on walls, getting no protection, but some form noble shrubs, standing out in masses and singly, and literally growing as freely as do the Rhododendrons. Timorous persons hesitating to plant out Camellias should visit Glen Eyre, and they would see the shrubs there, not merely in warm positions, but in cold ones also, and the pleasuregardens, chiefly look east, so that they are at times swept by fierce cold winds. Still the Camellias with the lady of Glen Eyre, or with her estimable gardener, Mr. Stewart, would soon dispel many illusions respecting Camellias, indeed Mrs. Crabbe insists that they are even hardier than the common Laurel-that, unlike that shrub, the summer growth of Camellias is not made till the frosts are past, whilst the ripened wood of the previous year is far too hard to be injured by cold. 'Tis true heavy rains, sleet storms, rough winds, and white frosts may, to some extent, damage the blooms, but then, what outdoor flowers are there that will not suffer also from the same causes?

Appley, in the Isle of Wight, is no doubt a peculiarly favoured spot, through having a north-eastern aspect, and open to the sea. There Camellias thrive finely in beds, and are now in bloom. It will of course be said, that so much success is due to the position, and it may be true, but still, how much of it is due to boldness? The admirable way in which other shrubs grew doubtless led to the planting-out of the Camellias, but really there are myriads of gardens in the kingdom perhaps even better favoured for soil, and quite as well for position as either Appley or Glen Eyre, where Camellias will thrive equally well if planted out. That the plants like a black peaty soil there can be no doubt, and it cannot be too deeply worked, and, if needs be, made. The chief thing in outdoor culture is patience, for the absence of it is the rock on which many would-be cultivators become shipwrecked. The Camellia is at all times a slow grower, but is specially long in attaching itself to the soil; no doubt this arises from the fact that in most cases the plants put out are those which have been for several years in pots, the roots of which are cribbed, cramped, and distorted out of all natural form, and in a most unfit condition for planting out. No doubt we want Camellia nurseries where the plants are grown from the first in beds where in winter, whilst in the earlier stage of growth, they may be protected if necessary, but yet left when wanted with clusters of roots free and full of fibre.

It is almost certain that where Rhododendrons and other American plants do well Camellias would do well also. As a rule they do not seem to appreciate hot positions, because burning sunshinesometimes produces scald. At Glen Eyre the splendid trees on the south walls have high trees just in front of them, breaking the force of the sun in the summer months. Of course, when out in beds and borders the free play of air around them materially protects from excessive heat. Established Camellias outdoors are in the spring marvellously floriferous, large plants producing blooms of beautiful quality literally by bushels. X. [Camellias may flower freely enough in some of our southern and western counties, but near London at any rate we cannot from personal observation recommend outdoor cultivation of these shrubs. ED

^{*} Dendrobium signatum, r. sp.—Juxta Dendrobium nobile, Lind. Caule compresso;demma sulcato; pedunculis umfloris (semper?), mento obtusangulo; sepalis liquidatis acutis; tepalis oblongis acutis, omnibus apice reflexis; labello basi humerato subquadrato actice obtusangulo riangulo apice acuto; columna apice biapiculata; utrinque juxta foveam obtusangula. Flores abioduli. Labellum sulphorusu macula brunaré signatum. Co'unna virtis striis longitudinalbus violacis. E. Lam introd, cel. Bul, mercator, Lordiensis. M. G. Reke, f.

ORCHIDS AT BIRKDALE, SOUTHPORT.

NONE who have watched the rise and progress of Mr. R. P. Percival's collection at Clevelands will hesitate to accord to that gentleman high honours for the important part he has played in assisting to simplify and popularise Orchid culture. Commenced but a few years ago with the intention of growing only really good and showy things, and mainly from fresh imported plants, the original scheme has in most cases been adhered to, and with what good result the clean and sturdy condition of the plants offers the best of evidence. The desirable end has been secured by Mr. Percival in a manner which it would be well for all commenciog Orchid culture to imitate, viz., by studying the reputed knotty points in the culture of each section before taking them in hand, by considering well the climatic and other influences to which they are subject in their native habitats, and by seeking information from all who are likely to be able to give it. In this last matter, while ever ready to give others the benefit of his experience, no member of the Scotland Yard brigade could be more persistent than Mr. Percival. Not always, however, does he act on the information given—ill would it sometimes fare with his pets if he did; but whenever any of those startling and improbable theories which we often hear is brought before him it is received, as it should be, with the proverbial grain of salt, and it is only credited for what it is worth when weighed with the general evidence on the same point; and in all his deliberations and the carrying out of his plans he has an able and enthusiastic assistant in Mr. George Beddoes.

True to its season each section of Orchids furnishes its floral picture, each in its turn being the frontispiece to the lesser illustrations, but these are at all times so numerous that were the main display absent enough would be found to admire. At present the show of Cattleya Trianæ is the pièce de résistance. The principal Cattleya-house is in three divisions, and the first of these (25 feet by 20 feet) is filled with C. Trianze in bloom, the effect of the hundreds of varied and gorgeous flowers being of a character impossible to describe and difficult to imagine. The whole of the plants have been imported within the last three years, and so well have they answered the cool and airy treatment which Mr. Percival gives them that it seems impossible that they should ever be able to surpass the condition in which they now are, and yet their owner is confident of annual improvement, although many of the bulbs already measure 10 inches in length, and as at Birkdale they are never content unless the mature growths have burst their sheaths, they are of course stout in proportion. There is not a bad variety in the whole house, and there are not two plants which were not originally derived from one specimen, all bearing flowers exactly alike. The intense bright crimsonlipped kinds predominate, but giving a charming relief to the eye are pure white, pale lilac, and light rose forms, not one of which but would be selected by some one or other as the best in the house, so much do tastes differ where colours and form are concerned.

Some of the plants bear from twelve to twenty flowers each, in a few instances four flowers being on Without a stick or tie each of these grand one spike. plants with its flowers naturally arranged is a beautiful thing to contemplate. Who can wonder at such plants being so popular? A sight of one houseful in bloom to refute the charge that Orchid growing is a mere craze. C. T. Backhousiana with twelve blooms asserts itself in true north country style, its colour is so telling that it is one of the first to catch the eye; a little plant, too, of the Popayan Trianæ, having an elongated and much filled labellum of an intense blood-red, bids fair to grow into a very fine and distinct thing. For the general run of the plants in bloom suffice it to say that they are beyond all praise, and for the general effect some idea may be formed by saying that there are over 650 fully expanded blooms. A fine specimen of C. Percivaliana with three dozen flowers open exhibits it in its proper light. The second divisionis filled with C. Mendelii, C. Mossiæ, &c., noticeable being the Burton Constable C. Skinneri with forty-eight flower-sheaths; and a grand lot of C. aurea, which although only purchased from Messrs, Shuttleworth in June produced a profusion of flowers in November, thirty of them being open at the same time. The third division is filled chiefly with C. Mossiæ, C. labiata

var., and C. Mendelii, and all in the same good trim, and bristling with flower-sheaths as firm as cardboard. One C. Mossiæ in an 8-inch pot has twenty-two flower-spikes, and a C. Mendelii in 16inch pot has tweoty-four. The rest are equally well furnished, and will be sure to give a fine display of blooms.

A word about Mr. Percival's treatment of Cattleys Free admission of air by day, and a diminished allowance at night, regulated according to the weather all the year round; a copious supply of water in the growing season, and a carefully restricted supply (the plants are not allowed to get quite dry) when at rest, and the most open net-like shading, and that to be used only when the sun is out-are his main points, and from a want of a proper knowledge of these points most of the failures of less fortugate growers proceed.

The Lælia-house in the new block promises as good results as the Cattleyas now give. It contains large masses of L. purpurata (one of them having twentytwo flower-sheaths), L. elegans varieties, Cattleya labiata Warneri, C. Leopoldi, C. amethystoglossa, &c. These are treated in much the same way as the Cattleyas in the other range, but still more sunlight is let in on them in summer. In this new block one of the houses is gay with Coelogyne cristata, chiefly of the Chatsworth and Lemoniana varieties, one plant of the latter having nine spikes, and eight flowers on a spike; many Lælia harpophylla, one having nine flowers on a spike; Odontoglossum pulchellum majus, twelve spikes; Cymbidium eburneum, twenty-five spikes; and Coelogyne ocellata maxima, eighteen spikes.

The cool-house leading to the new block exhibits the Odontoglossums, &c., quite up to the excellence of the Cattleyas and Lælias; it is showy with the ever-present O. Alexandræ varieties and O. Pescatorei, with which are mixed other interesting things, such as O. baphicanthum, O. hebraicum, and brighter tints are added by the scarlet Sophronitis, and a fine plant of Ada aurantiaca with fourteen spikes. In this cold house are wintered the varieties of Lælia pumila, which are so successfully grown here; they are as smooth, plump, and clean as one could wish to see them. In summer they are kept in a light, airy house, and are plentifully supplied with water when growing - indeed, they are now kept

The other cold houses all contain some flowers, among which the brilliant tints of the Masdevallias are beginning to give their help, and in one of the divisions there is a great show of O. Rossii majus, one of the plants in an 8-inch basket having twenty-one flowers, and a fine form of Oocidium macranthum. The Odontoglossum vexillarium-house contains large plants of that species, equal in vigour to any in cultivation; many of the growths are 13 foot in height, and, like all the other Orchids at Birkdale, perfectly clean and free from insects of all kinds. Th nopsis are in good order, the leaves large, fleshy, and firm, and the flowers profusely given. Just now the pretty P. Schilleriana supplies the greater part of the flowering plants, but P. Stuartiana and others are also in bloom, and a robust plant of Epidendrum bicornutum has strong spikes. In a quiet corner of the adjoining warm Cypripedium-house a good batch of very healthy Odontoglossum Roezlii are always sending up flowers. The secret of growing this plant is to find out a place where it will do well, and afterwards to let it remain there.

A new house has been arranged for the Vandas, and the Dendrobes now occupy their old quarters in company with the Aerides and Saccolabium. A profusion of bloom is supplied by many specimens of D. Wardianum, D. crassinode, D. Ainsworthii, D. A. roseum, The Phaius tuberculosus, although evidently not yet quite conquered, is sending up flowers, and a fine plant of what appears to be a good form of Phaius Blumei has many spikes of showy flowers. The conservatory is used for resting Dendrobes, each batch as they require removal from the warm house is placed in it. At present it has most of the evergreen Dendrobes, D. densissorum, D. thyrsistorum, D. Paxtoni, D. clavatum, &c., and some fine plants of D. Falconeri, D. Dalhousianum (one with growths nearly 5 feet long), D. nobile, &c. The fine trim in which Mr. Percival's Orchids are, and the pleasure which he evidently gets out of them, should induce others to imitate him by earnestly taking them in hand, and making a pleasure of the study of their habits and requirements.

HYBRID AMARYLLIS.

I COMMENCED crossing the Amaryllis in 1875, but having to leave Lucknow this work was continued by Mr. Ridley. In January, 1882, he kindly sent me some bulbs, descendants of my original hybrids. With these bulbs I hope now to make a fresh start, and branch off, if possible, into new colours and

In the course of my experiments in 1882-1883 I elicited some facts which may not be uninteresting to the students of scientific horticulture.

Ten Amaryllis flowers, in different plants, were tried by self-fertilisation, but all failed.

In 1882 one named Fiesole refused to cross, either with its pistil or with its pollen, and so did several others; while, on the contrary, two others, named Carina and Graziosa, took almost any kind of pollen. The former had seventeen blooms on three scapes in one pot, and almost all set seed; so that from this plant alone I have now upwards of 500 seedlings.

In 1882 I crossed promiscuously to obtain a number of plants to work upon, and only kept a record of the name of the female parent.

In 1883 I crossed more carefully, and ticketed every flower with the name of the pollen-bearing plant. Fiesole, again, had nine of its pistils tried with the pollen of eight different kinds, and all, as before, failed. Its pollen also failed to fertilise five different kinds of pistils.

From these experiments it appears that the following provisional conclusions may be drawn, viz., that the Amaryllis is incapable of self-fertilisation; that, crossed in and in, which I shall call high breeding, they have a tendency to produce mules, which will, as a rule, not cross among themselves, but may cross with their original ancestors, or perhaps with common kinds, with which they have no blood ties.

Mr. Ridley, in a letter written the year before last, informed me that the highly-bred ones in Lucknow did not seed. He attributed this to the rough crossing of the native gardeoers. He added that the common kinds, which were intermixed with the others, produced seed without being artificially tertilised. take it that the pistils of the common ones were so sensitive, that the pollen of the others carried by the wind, or insects, readily fertilised them.

Mr. Barron, in his book on the Vine, if I remember rightly, stated that he found highly-bred Vines crossed with wild or common kiods gave more vigorous and better results, than when crossed with other highlybred varieties.

In my experiments I found that some highly-bred Amarylis were all but barren, when tried with other highly-bred kinds; but crossed readily with a common kind. In 1882 I had three bulbs of a common pale orange expanded Amaryllis; they had no merit, either orange expanded Amarylis; they had no merit, etner of colour or form. I was going to put them aside, as worthless; one day, however, I thought, by way of experiment, I would try them with the pollen of the highly-bred kinds, and, to my astonishment, every pistil was fertilised and produced a full capsule. The following was the result. pistil was fertilised and pro-following was the result :-

Orange Expanded-No. 1.

- × Dilfarèb, 53 seeds—28 germinated, 8 perished. × Radha, 52 seeds—16 germinated, 3 perished. × Fiesole, 38 seed—56 germinated, 1 perished.

Orange Expanded-No. 2.

- × Bonavia, 54 seeds—38 germinated, 5 perished. × Diifaich, 70 seeds—43 germinated, 8 perished. × Radba, 3t seeds—18 germinated, 3 perished.

Orange Expanded - No. 3.

× Ditfareb, 42 seeds—2 germinated and lived. × Fiesole, 19 seeds—3 germinated and lived.

It will be seen that even Fiesole, so refractory when tried in every way during two seasons, fertilised this common kind, and although only pine seeds ninated, for Fiesole this is a wonder.

Of course there are exceptions to every rule, and Carina and Graziosa, although highly bred, may be such. While, on the one hand, there may be utter barrenness of pistil and pollen, there may be, on the other, complete sensitiveness to foreign pollen, as in Carina. No doubt there may be also intermediate

I should say, if one wishes to propagate by seed some fine character of a highly-bred Amaryllis, he is more likely to obtain *viable* seed by crossing it with one of the original wild ones, or with one but slightly one of the original wild ones, or will one but signify removed therefrom, using the latter as seed-bearers. Of course, where one has already found, by experiment, that a highly-bred individual is prolific, the case is different, and the knowledge thus obtained is very useful. E. Bonavia, M.D., Etawah,

(To be continued.)

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THE PICOTEE, -This is a more modern production than the Carnation, and although they are doubtless derived from a common parentage, they are quite distinct in their markings. At the time Hogg's book was published the Carnation was divided into scarlet flake, pink-flake, purple-flake, scarlet-bizarre, crimson-bizarre, and purple-bizarre. The Picotee, he says, "is distinguished by its spots," but except the yellow ground varieties, he does not give the names of any. Edged Picotees were known and grown at that time, and it was stated by a contemporary writer with Hogg that the qualities aimed at were the same as in the Carnation, except the colour; "those flowers which are free from blotch or stripe down the petal, below the coloured edging, are greatly to be preferred to those which are marked and pouncy." The pure white ground colour was also greatly desired. Within my own knowledge the improvements in the Picotee has been very great. New varieties have not been sent out very freely, but those that have been distributed are well ahead of the older varieties. red-edged section come first, and I find Mr. Turner ren-eigen section come may, and a final final rentries is sending out a heavy red-edged variety, named Monarch, raised by the Rev. C. Fellowes; it has, says Mr. Turner, "a heavy red edge, good large smooth petals, and the white quite pure; large and fine." This I have not seen, but if it is as good as Princess of Wales, by the same raiser, it will soon find its way into every collection. Princess of Wales, John Smith (Bower), Brunette (Kirtland), and J. B. Bryant (Ingram), are the best in this class. Of the light red edges Simonite's Mrs. Gorton must stand first on the list; it is a better flower than Violet Douglas, by the same raiser: these two and Thomas William (Flowdy) are the best, Emily (Addis), and Mrs. Bower (Bower) are also superior flowers in this class. Of the heavy purple-edged type, Muriel, raised by Mr. Hewitt, of Chesterfield, and sent out by him in 1882, must certainly be placed before Mrs. A. Chan-cellor for quality, but I find it a weak grower, which Mrs. Chancellor is not. Mr. Dodwell has raised and sent out Purple Prince this season; it lacks the sent out Purple Prince this season; it has the refinement of the two first-named, but it is a large showy flower, and may exactly suit those who decry pot culture, and trust to the border only for their entire display. We cannot yet omit Zebriua (Lord) from the best six. Lizzie Tomes omit Zebrina (Lord) from the best six. Lizzie Tomes (Dodwell), recently sent out, grows strongly with me, is distinct, and of fine quality. Mrs. Summers, raised by Mr. Simonite, must also take its place in the best six; it has a very distinct broad edge, with pure white ground. With the newer light purple edges I am rather disappointed, and for the last two years Her Majesty (Addis) has been the best. It is a full-sized flower, with broad well-formed petals, having a fine wire-edge of a distinct colour. Nymph (Lord), Jessie (Turner), Baroness B. Coutts (Payne), Mary (Simonite), and Mr. Tutton (Payne), the last an old flower, not so much known as it ought to be. I have twice seen it first-class with Mr. Turner.

In the heavy rose and scarlet-edged section, Esther

twice seen it inst-class with Mr. Turner.

In the heavy rose and scarlet-edged section, Esther
Minnie, raised and being sent out by Mr. Dodwell,
has a broad margin of rosy-pink, with a clear white
ground. When it first flowered with me I thought it has a broad margin of rosy-pink, with a clear white ground. When it first flowered with me I thought it the finest of all the heavy rose edges. Ada Hannah, if not rather weakly in constitution, will probably be a good addition to this class. I flowered it last year, and fancy it may yet hold a good position; it is another of Mr. Dodwell's seedlings, and was sent out by him last autumn. Mrs. Payne as yet heads the list, but it is not really a heavy edge, being what is termed medium. Mr. Turner's new variety, Constance Heron, did not turn out quite as well as I expected last year, but it has been so fine with Mr. Turner that we must look for it to hold the highest place in the section to which it belongs. It is of the Dhadiah or Rosy Queen type. Mrs. Webb, heavy-edged scarlet, is a very large flower, shown remarkably well in Mr. Turner's stands last year. It has a good white ground, with a heavy scarlet edge, and is one of the best flowers for the back row in a stand. stand.

Light rose-edged flowers are not sufficiently plenti-

Light rose-edged flowers are not sufficiently Plenti-ful. For exhibition I depend upon Mrs. Alleroft (Turner), Estelle (Feilowes), and Ethel (Feilowes). There are two new ones being sent out this year— L'Elégante (Dodwell), a seedling from Ann Lord, with all its properties except colour. Dorothy (Feilowes), being sent out by Mr. Turner, is said to be of good quality. I have no personal knowledge of either of them, but new additions are so necessary that growers will be glad to try them. J. Douglas.

The Arboretum.

PICEA OMORIKA (THE SERVIAN SPRUCE) .- In our volume for 1877, April 14, and again May 19, p. 620, we called attention to the remarkable Spruce Fir discovered in the mountains of Servia, Bosnia, and Montenegro by Dr. Pancic (misspelt Paucie in our first article). Omorika is the Servian name for the tree, and Dr. Pancic, after consulting with the late Professors A. Braun and Karl Koch, published it as distinct. It forms a tree of the first magnitude, with short braoches, forming a pyramidal crown, and yields a valuable timber. The information we published was chiefly derived from articles by Dr. Bolle and Professor Reichenbach, and in our second article, above



Section of leaf much magnified; bud × 3; seed :: 2; leaves front and back × 2.

quoted, we copied the full description given by Dr. Pancic. It is, therefore, unnecessary to repeat what is there said, and there is the less necessity for so doing, as, thanks to the mediation of Mr. George Nicholson, we are now able to lay before the reader illustrations of this new Conifer, which will tell their story better than the descriptions. Further, those who are interested in the matter will soon be able to gratify their curiosity, as we believe Messrs. Freebel,



FIG. 57.-PICEA ORIENTALIS. Leaves × 2; leaf-section highly magnified.

of Zurich, have succeeded in raising a stock of it. We may, however, add a few details as to the leafwe may, however, add a few details as to the feaf-structure not before made public, and for the oppor-tunity of doing which we are again indebted to material furnished by Mr. Nicholson. The shoots have the "pegged" character common to Spruces, and are, moreover, covered with short stiff hair. The buds are ovoid cooic, dull brown in colour, and invested by ovate-lanceolate scales. The leaves in the specimens before us are flattish, straight or laterally curved, between half and threequarters of an inch in length, linear oblong obtuse face, and slightly flattened near the point; the ventral lace, and signify nattened near the point; in eventual surface is marked by a prominent midrib, on either side of which are lines of stomata. There is no indication of any twisting of the leaf, hence the stomata are really on the upper surface of the blades, as in some Junipers and other plants. A transverse section when

examined under the microscope (fig. 56) shows a layer of hypoderm cells beneath the epidermis, and in vesting the ground tissue of the leaf, which consists of spheroidal cells with undulating boundary walls and with a very slight tendency to form palisade cells on the lower sade, that furthest removed from the stomata. Close beneath the hypoderm, on the lower surface, are two resin canals, one on each side midway between the centre and the margins; each is surrounded by strengthening cells. The central bundle of fibrovascular tissue is surrounded by a well-marked bundle-bath and her, the william phone and the phoem sheath, and has the xylem above and the phloem beneath in the usual manner.

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beneath in the usual manner.

Ficea orientalis, which has been compared with it, has shorter leaves, more acutely pointed and more four-sided in section (fig. 57). The cells, also, which surround the central bundle-sheath are in P. orientalis not globular, but obloog, and radiate from the central bundle on all sides. Their walls are undulated. Hence, then, the superficial appearance, no less than the internal structure of the leaves, is quite distinct in the two species; a comparative examination of which, therefore, confirms Dr. Piancle's view, that he had to do with a previously undescribed species, and not with a form of P. orientalis. Moreover, the cones of P. orientalis are longer and the scales broader than in P. Omorika. As to its value as an ornamental tree or as a timber tree in this country, we can, of course, Omonika. As to its value as an ornamental tree or as a timber tree in this country, we can, of course, at present say nothing, but as a newcomer of very great interest, and one which comes with a good character from its native bome, we doubt not that many will be inclined to give it a welcome. M. T. M.

CRATÆGUS PINNATIFIDA. - Amongst the large number of Thorns cultivated at Kew this species is, as far as growth is concerned, by far the most forward. At present the tender green of the young shoots and At present the tender green of the young shoots and unfolding leaves render it very conspicuous in that part of the Arboretum where the Crategus collection grows. Shoots more than an ioch loog in the last week of February speak a good deal for the precocity of the species, as well as for the bitherto phenomenal mildness of the winter. A tree of Crategus oxyacantha var, præcox (the famous Glastonbury Thoro) beladed et the date above mentioned as if oxive a few cantha var. precox (the famous Glastonbury Thorn) looked at the date above mentioned as if only a few sunshiny days were needed to open its numerous clusters of large well-developed flower-buds. As regards the foliage, however, this tree seemed considerably behind the species named at the commencent of this note. C. pinnatified is a native of North China, Amurland, and the coasts of Mandeburia. Seeds were collected and sent to the St. Petersburg Gardens by Maximowicz and Maack some score or more years ago, and the species is now tolerably widely distributed in cultivation. Two distinct forms appear to occur in a wild state—one a very spiny tree, the other with stem and branches destitute of thorns; to this latter belongs the specimen in the Thorn collection at Kew. A figure of the species, the only one hitberto published, appeared in the Gartenfora for 1862.

DOUBLE STOCKS.

THE question might be asked, Do the fine strains of double German Stocks show signs of deterioration, in so far as the production of fine, full double flowers is concerned? From a pretty general knowledge of the value of some of the Continental Stocks it may be stated, with much truth, that there is little or deterioration in the case of firms who make a leading speciality of these things; indeed, one might fairly incline to the opinion that certain strains show decided marks of improvement. When examining an extensive trial of Stocks of all types and sections last summer, drawn from not one merely but from several Continental houses, it did appear as a charac-teristic of the different types that the flowers were large, full, and finely coloured, and that the percentage of double flowers was a highly satisfactory one. In the case of the autumnal Stocks, which a few years ago had a preponderating percentage of singles, the balance is now reversed, and the double varieties are in the ascendant. The saving of seed with a view to bring about this desirable result is carefully attended to on the Continent. In the case of double Stocks both stamens and pistil are changed into petals; seed cannot, therefore, be had from full flowers in these sorts, and the only resource is to save seed from those single flowers in which a tendency to fulness has commenced by having a petal or two more than usual. There are a great many amateur culti-vators of flowers who think that the seed which produces double Stocks is taken from double flowers instead of from single blossoms. Old cultivators of Stocks had curious notions as to assisting the production of double flowers. It was considered that they

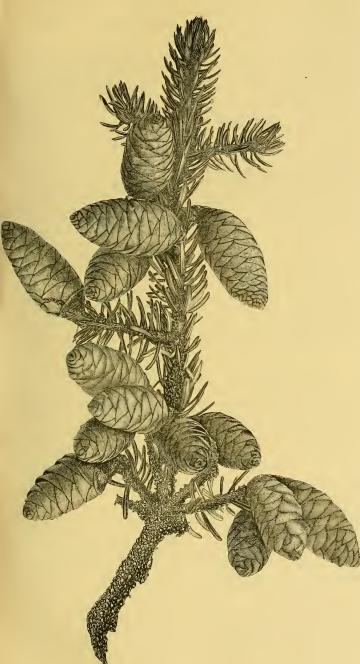


Fig. 58.—Picea omorika, the servian spruce: natural size: from a photograph. (see p. 308.)

would be more liable to be double if the plants are checked first by a deficiency of nourishment, whether of water or manure, and afterwards excited to luxuance by a plentiful supply, and the greater the change the greater the likelihood of success. Oldseed was looked upon as favourable also, and instances are recorded

of old neglected seed, which had been reckoned very inferior when it was fresh and new, coming almost every plant double when a little had been left over and sown when old. So it is held as an opinion that the seed for raising double flowers of almost any sort can hardly be too old, if it will grow

at [all; and]\"[the]\" weak plants, first started and then luxuriated, will be found most successful. The seed should be sown in heat, and the weak plants most cared for. After flowers have once been produced double or full, the habit of coming double will be retained, if kept so by rich cultivation. In looking through old gardening books one meets with similar notions as to producing double flowers in Stocks. Probably many of these fail to meet the test of experience. One thing is quite certain, that a great deal is being done in the way of selection, and this work is rendered all the more careful and necessary by reason of the keen competition which takes place among the leading Continental houses who have a reputation for Stocks.

The Herbaceous Borden.

DAFFODILS.-Mr. Wolley Dod's interesting essay opens the Daffodil campaign in your columns, and is as welcome as the cuckoo, which will also soon be here, if the spring is really upon us. I am always amused with our valued friend's hunt after doubles and their origin, but in this paper he carries his theory farther than usual, 11e refers to the meadows between Florence and Pisa, where singles and doubles grow together. It is possible, he says, that these Daffodils may have been introduced double from England to Italy! It is certainly possible, but it is improbable. Now, my opinion is that doubles come as seedlings, and may happen any year from any single plant, just as we have recently heard of doubles in Bouvardias, Cyclamens, and Lapagerias. In such a simple flower as a Daffodil the doubles from the same kind would always be similar, wherever they arose. If princeps produced doubles as seedlings they would always have the bicolor mixture in the "monstrous" admixture of crown and perianth segments multiplied; and if obvallaris happened produce a double it would be a self deep yellow, like the Tenby Daffodil, throughout. Messrs. Collins & Gabriel sent out a double Tenby Daffodil last year as a novelty, and I watched for its first bloom with no little interest, but when it arrived it was no Tenby double at all-light primrose and deep yellow segments filled the flower up, clearly indicating a bicolor parentage. There does not appear to be any double Teoby yet, so we can watch for its advent now that thousands are in cultivation, and perhaps the question will be cleared up thereby. It is possible that a double Daffodilis a species having the power of perpetuating its quality by seeds. [?] A double-flowered plant is stronger than a single one, and the double Daffodils are the earliest to bloom and the most vigorous, so that in the struggle for existence a double, if it produced seed, would soon drive out its single cousins, and the whole crop would in time become double. This appears to have been the case with the double white Narcissus in some parts of France, and probably the above is the explanation.

But Daffodils also produce varieties by sports. We had a large bed of N. Horsfeldil last year, all made up of the small bulbs gathered in replanting our Horsfeldil clumps. One of these produced a flower almost white, but still Horsfeldil in shape and peculiarities. This promises to be a new variety by a sport.

The mild season has favoured the growth of N. capax, which promises to be unusually floriferous this season. In our clumps of a dozen bulbs each there are fully three-fourths showing bloom. N. corbularia alba [N. Bulbocodium var. monophylla] is beautifully in flower, and in fact all the rarer Narcissi are showing buds.

N. nanus was earliest, and is everywhere in full bloom; the true N. minor was only a few days later, but it is not so vigorous a plant as N. nanus, than which there is no more useful Daffodil. Mixed with the blue of Scilla sibirica it makes a lovely edgiog to a long border. We have a few stray flowers of obvallaris, princeps, and Telemonius plenus, so we are much later than the South, as I had a large bunch of Daffodils sent from Cornwall tee days ago, Wm. Brockbank, Brockhurst, Didsbury, March 1.

ALFINE RANUNCULI.—Mons. Correvou's interesting note on the Ranunculus of the Alps suggests a few queries, which I hope be will be able to answer. Two of the varieties he named are well known in our English gardens in their double forms, but not at all in their single forms. R. aconitifolius, for example, he speaks of as being unsuitable for the rockery, but in its double form there is no better rockery plant. It is a very interesting plant, and a most popular one. I should like to know if its single form is also good, as to my mind a single white Ranunculus, if its port were as stately, and its habit were as good as that of the "Fair Maids of France," would be welcome in our gardens. Does the double form in the wild state? It was in England appear in the days of Gerard and Parkinson, and is a plant which many country florists make a specialité of, so ready is its sale in our flower markets. At the same time it is not by any means an easy plant to grow. M. Correvon also names R. lanuginosus, the double form of which used also to be a common plant in old-fashioned gardens, but which is now rare. Will he say also if this occurs in its double form, and if it does it would be worth while to compare the genuine plant with that now bearing its name in our English gardens, the identity of which I greatly doubt. R. gracilis never lives over the second year with me. I have had it both from Switzerland and Norway and with like results. R. amplexicaulis is also a very difficult plant to retain. IV. Brockbank, Brockhurst, Didsbury.

FORGET-ME-NOTS .- Some day I hope to obtain in reality that old illusion, a red Forget-me-Not. How di-appointing it has been in all the many years since we have known that charming kind, Myosotis dissitiflora, to note spring after spring plants here and there, and especially old or somewhat weakly ones, giving for a week or two flowers of a lovely rosy hue, that seemed as though they would leave their impress of colour stamped upon all that would come after. Not so, alas ! for presently the natural coerulean tint would come, and then the rose departed for good. Why this particular Forget-me-Not should in its early blooming stage thus show so much red colour is a What is there in the composition of the natural blueness of the flowers that makes red its ground? Is blue after all evolved out of red, with a little violet shading thrown in, or is the Myosotis blue diverse from all others? Certainly with the earlyblooming dissitisfora we seldom get the true blue tint until the sun rides high in the sky, and light is fairly abundant. We have got a beautiful pure white from that variety, why may we not hope for a red one? There is no limit to Nature's sportive fancies where flowers are concerned, and therefore the Forget-me-Not in red, white, and blue, our national colours, can hardly be beyond the range of the possible. The very rich tints sometimes seen in the early red flowers indicate that a red Myosotis would make a striking pot plant, just as the white one is found to be, under glass, exceedingly pure and pleasing. blue never is good at the first, but after it has about half bloomed then it becomes of good colour. Persistent saving of seed from sports that give unusually red flowers might in time give a permanent variety. It is worth trying for because in our early spring flowers we have few of a tint so striking and so desirable. Quercus.

SCILLAS,—I have a few patches of Siberian Squille giving up their rich and welcome blue flowers with the Snowdrops and Crocuses, but, unlike either of these hardy bulbs, the squills do not seem to increase. I think I have about as many roots as there were half a dozen years since, I should very much like to know what is the general experience not only of these common Scillas, but also of the pretty biflora k nd', and also of that newer form (Chionodoxa) so pretentiously styled the Glory of the Snow, Quercus,

PRIMEOSES.—What can be more charming than a big patch of that pretty, early, hardy single Primrose Lilacina? How very early and wondrously it blooms, and how well it thrives. Unfortunately, it is a sparse seeder, but perhaps that arises from constant propagation. Seedling Primroses of all colours seed freely in average seasons. Quereus.

HEPATICAS.—As my experience of Hepaticas somewhat differs from that of your correspondent "M.," p. 283, and as they are favourite plants of mine 1 send you this note. They seed freely with us. [10es the seedling plant present any peculiarity of growth, such as happens in some of its allies? En.] Some years ago, on the advice of a good authority (Mr. Frank Miles), I got a collection of varieties from Van der Swaelmen, of Ghent. This consisted of a number of shades of colour. I collected seed from them, and sowed it in one of our hurdle beds at Wisley, and

moved the young plants to a shady loam mound. They have bloomed this year beautifully, with large flowers of more than usually bright colours. Last week, as the parent plants seemed to be in a rather too low and damp a situation, I took them up to plant in the loam mound. Round most of the plants there were a number of young seedlings. Some of the larger flowers of Hepaticas are more than "modest wee things," especially II. angulosa, of which I believe there are two varieties, one not much larger than ordinary Hepaticas, the other with flowers larger than a halfcrown, and such a showy flower! As to dividing, some time back I bought a great clump of double pink in Covent Garden market, and planted it. As it never flourished I this year took it up, and found hard wiry roots. I broke it up into twenty-three plants, and might have further subdivided it. I have no doubt of their making good plants by next year. George F. Wilson, Heatherbank, Weybridge.

—— I have been very successful for the last five years in growing the double red Hepatica in a garden where previously it had never done well. My plan has been to keep the plants well watered during the summer, and in the autumn to bank up the earth well round the plants, so that the roots should not be exposed, as Hepaticas seem to have a tendeocy to raise themselves out of the earth. I have never moved the plants during the five years. They blossom most freely. E. Swann, Oxford, March 4.

LEUCOJUM VERNUM VAR. CARPATICUM. — Last week I saw a bed of L. vernum—probably containing two or three thousand bulbs—at Messrs. James Dickson & Sons, Newton Nurseries, Chester, and very nearly all of those in flower were twin-flowered and yellow-spotted—the characteristics, I gather, of the above variety. I send you this note because a contemporary describes it as being rare and nearly lost to cultivation, consequently many of the readers of the Gardeners' Chronicle may be glad to know where good bulbs can be secured. It is difficult to say where this batch originally came from, as they must have been in the above nurseries for many years. K.

The Rosery.

Rose Pruning .- Since writing my note concerning Maréchal Niel Rose published last week, I have more closely examined the rods, and find that here and there, but always quite on the under-sides, a few buds have remained dormant. This shows how much more actively the light [or, query, heat? Light, per se, retards growth. ED.] must act upon the buds nearest to it, or else that the rush of sap up the rods is much greater on the upper than on the lower side. I gather, too, from the fact that the base buds nearly all remain dormant, that this flow of sap gathers in strength as it ascends, hence the shoots at the top of the rods are the strongest. It is worthy of note, that of this same Rose the growth on a stout plant rooted inside is not a whit more forward than it is on those with roots outside. What the result would be were the plants forced early I cannot say, but I incline to the belief that the difference would be trifling. No doubt the greater range and freedom of the outside roots more than compensates for the slight additional warmth those within find. We see Roses everywhere cutdoors full of growth, and growers hardly know what to do with them. There seems to be a fear that this early growth will lead to exhaustion of the plants, and that the bloom will later on suffer. That does not at all follow. Probably few will care to prune till the end of the month, and then with roots forced into exceeding activity by the premature growth we now see, the now dormant buds should start with unusual force and vigour, and I have no doubt such will be most growers' experience. To strip off all or even a few of the early shoots, might lead to the undue excitement of the dormant buds too early. Better let them remain as they are till all is safe, then prune hard, and the plant recuperation will be all that can be wished for. A.D.

ROSE SOUVENIR DU ROSIERISTE RANBAUX (Tournal des Roses, February, 1884).—A Tea Rose raised by the late P. Rambaux from Goubault. It is described as of vigorous habit, flowering twice, leaves shining above, leaflets lanceolate, paler beneath, flowers erect, cup-shaped, petals straw-yellow, with the margins flushed with rose; sweet-scented,

Prchid Notes and Hleanings.

PRUNING DENDROBIUMS .- The practice of pruning away the bulbs of Dendrobiums which already flowered must have received its death-blow from the experience published in your last number. Many Orchid growers were prepared to hear of failure, and also of the practice being given up as a bad one, but few, I think, expected to hear such a sudden collapse as stated. The bulbs of Denbrobiums are useful to the plants so long as any vitality remains in them, and it is taxing a plant unduly to cut them away while they can contribute in any degree to the support of the young growths or flowering bulbs, All deciduous Dendrobiums depend on these back bulbs for much of the support the flowers require, and from these bulbs also the young breaks draw the greater part of their nourishment during their early growth. If this is not the case, and these bulbs are taking to themselves nourishment which would otherwise go direct from the root to the young growth or flowering bulb, how are we to account for the shrivelled state in which these bulbs are seen after the flowering period, and the continuance of this shrivelling until the young growth begins to root from the base? I have frequently seen four and fiveyear-old bulbs on plants of Dendrobium Wardianum so much shrivelled during this period that I became anxious for the life of the plant, and but for the strong and vigorous growth of the young break should have believed it dying. These plants were by no means in had health or deficient of root, neither was the compost in a sour or exhausted state. In due time these young growths made roots for themselves, and then began a rapid plumping of the old bulbs. After watching plants go through this process year after year, it is certainly hard to believe that old bulbs are not only useless but detrimental to the plant. Nature herself teaches us to leave them, and Orchid growers must follow Nature as closely as it is possible if they wish for satisfactory results. I have met with several cases of pruning Dendrobiums, but cannot call to mind a single instance of improvement; on the contrary, there are several where the plants are by no means what they once were. The last instance I saw, several plants of D. nobile had got so weak that they could not flower this year, and the knife at once got rid of these useless and unsightly bulbs. Their prospect of flowering next season is not a rosy one, as it will take all the strength of the remaining bulbs, assisted by the roots of those cut away, to make any growth at all this season. Unsightliness is the hook by which unwary Orchid lovers are caught, and they are only too ready to catch at any new theory which promises to rid their plants of this fault. A weak, badly flowered Dendrobium is surely more ugly than a well flowered plant, even if a few old bare bulbs are to be seen. IV. B. B.

THE ORCHID MARKET.—At Messrs, Protheroe & Morris' sale last week specimens of Cattleya Warsce-wiczii delicata realised £9 9s. and £15 15s. each; Lælta anceps Dawsoni, £15 15s.; Odontoglossum mirandum, £5 10s.; Ceologyne Lemoniana, £9 10s. 6d.; Cattleya Triane vars., from £4 10s. to £9 9s.; Phalænopsis Stuartiana, £6 6s.; and Lycaste Skinneri alba, £9 19s. 6d. to £11 0s. 6d. About £10 per flowering bulb seems to be an average price for this plant just now.

WARSCEWICZELIA WENDLANDI DISCOLOR, — Leaves sheathing, narrow, lanceolate, Flowers solitary, 4—5 inches across, segments lanceolate, green, lip ovate cordate, apex reflexed, disc purple, edged with a broad frilled edge. The species is a native of Costa Rica. The specimen figured was grown by Mr. Smee.—Orchid Album, t. 126. The cool end of the East India-house is stated to suit the requirements of these plants.

CATTLEYA MOSSIÆ HARDYANA.—A very remarkable Cattleya, figured in the last number of the Orchid Album, t. 125 (1854). Its segments are lilae in colour, curiously mottled and barred with magenta-purple, with a golden blotch in the throat, the disc striped and with a narrow irregular zone of white edged with a wavy line of violet. This curious variety was introduced from La Guayra, and is said to be constant. The specimen figured was taken from the unique specimen in the collection of G. Hardy, Esq., Timperley, Cheshire.

The Flower Handen.

SHRUBBERIES.-The most important work at this period of the year, and that which requires the most careful attention and skill, is perhaps in the shrubbery; not in transplanting, as this work is always so much better and more successfully performed in the late summer and early autumn months, but where circumstances render it necessary now it should be performed during mild weather only, and with the greatest care, otherwise the failures from the effects of spring frosts, and the equally destructive cold witherng winds acting upon the tender and partially exhausted tissues, will be very great. It is more particularly the thinning, pruning, staking, and cleaning that now demand attention, for upon these annual operations well and properly performed at this season depend to a great extent the charm and beauty of the pleasure-grounds. To endeavour to give instructions how to thin and prune skilfully is perhaps of all things one of the most difficult, simply because they are operations that can be properly learned only by practice and experience. Many there are who think they understand them, but few indeed there be who are really successful practitioners. Nature is un-doubtedly the cleverest and most truthful teacher, and he who studies her ways and follows her examples the most accurately will perhaps commit the fewest mistakes; there are times, however, when circumstances demand an entire deviation from her laws, and then it is that the operator's abilities are laxed to the utmost degree, and from such instances do we too frequently see the most inconsistent, unsightly, and absurd effects. The thinning and pruniog of forest trees, especially if they have been judiciously planted, does not involve, at least in the management of shrubberies, the same amount of care, skill, and periodical attention as do the lesser trees and shrubs. These are very frequently, when first planted, jumbled together in such a dense and indiscriminate manner, chiefly with the object of producing an immediate blind or protection, and with scarcely a thought as to their eventual size and form when developed, and quite irrespective of the general effect they will ultimately produce in shape, colour, and size while in contact with each other, and when compared with surrounding objects. These shrubs are too frequently per-mitted to grow together unthinned and unpruned till every plant or group of shrubs becomes overgrown, interlaced, deformed, and deprived of its natural grace and beauty; then it is that the services of the judicious and skilful pruner are most valuable. To be able to produce a natural and a pleasing picture out of such a tangled and intermingled mass of materials requires the eye of an artist, the knowledge of the naturalist, the experience of the gardener, and the skill of the practised pruner all combined and centred in one individual

Where shrubberies have been so neglected it is quite impossible that they can ever be made so perfect as if well and skilfully thinned from the first, still much may be done to improve their condition, and this is best effected by judicious and entire separation into suitable and proportionate masses, groups, or single specimens, rather than continue to allow them to grow together, irrespective of their varied shapes and habits, into one unmeaning mass. This method of breaking up into detached groups or specimens will not only save many weak and slender subjects from complete destruction, but many beautiful specimens hitherto obscured from view may be freely exposed, and their natural grace developed by This method the admission of light, air, and space. also admits of each plant or group being pruned according to its peculiar natural growth, and thus, while a greater charm is created by varied outlines, the general character of the mass need not necessarily be changed unless it is desirable. The actual opera tion of thinning and pruning consists in the timely and skilful removal of all dead and decaying branches, as well as those malformed shoots sometimes produced by various causes, and which, if allowed to grow, would interfere with the natural beauty of the tree or shrub. It is also requisite to prevent shrubs and trees unnecessarily crowding each other, or from over-growing walks, buildings, or other objects; and more especially does it consist in training them into such shapes as will best suit and contri-bute to the object we may have in view without

resorting to unnatural forms and unsightly mutilation. To saw off a limb in such a manner as to expose the wound to the full influence of the weather, to hack off a branch with a dull and unsuitable tool, to prune off a shoot so to expose the cuts to view, should always be carefully avoided. In sawing off a limb the cut should always, when practicable, incline downurds towards the tree, so that no wet can

possibly lodge upon it.

In branch pruning the cut should always he clean and sloping downwards, and in pruning off young shoots so as to reduce the size of the shrub, inslead of shearing off every young shoot, exposing every cut and mutilated leaf to view, and thus giving the appear-ance of a clipped hedge, the longer shoots only should be removed, close to an inner branch; by this means the size of the plant will be reduced without the cuts shape: for this purpose the best tool is a strong knife with a pair of nippers for the removal of the larger with a pair of nippers for the removal of the larger shoots. Great care should also be paid to the proper staking and tying of trees and shrubs, especially when oewly planted; serious mischief often results from the neglect of this simple operation, especially in elevated and exposed positions. Having completed the pruning and tying the shrubbery should be thoroughly cleaned from all weeds and rubbish, as nothing tends to mar the beauty and prevent the well-doing of the plants so much as an accumulation of rubbish around their base and stems. The ground underneath them should then be loosened or pricked over with a steel way injuring the roots, as the object should be, not so much to fork up the ground as to break and loosen the hardened surface, and so freely admit air and rain to the roots, by which means the shrubs will be greatly benefited. T. S. C.

The Bardy Fruit Garden.

THE time of the year, the state of the blossoms on the Apricot and Peach, and the cold and sometimes frosty mornings, show clearly that protection of some sort must at once be held in readiness. In addition to the protectors which we have already mentioned we would add worsted netting as being better than common netting and Frigi Domo—a fairly good non-conducting material made of hair and wool. This latter must either be fastened on rollers or house as cuttains, so as to enable one to withdraw it in the daytime. Presuming that all planting and pruning daytime. Presuming that all planting and pruning operations in the orchard are now finished the small fruit bushes will need watching, because oftentimes at this season of the year finches, tits, and sparrows play sad havoc with the young and tender buds, thereby reducing the quantity of fruit, and injuring the bushes; red worsted entwined amongst the branches will oftentimes frighten them away, but branches will oftentimes frighten them away, but failing which a gun shot off several times a day is certain to do so. This is the month for grafting, of which there are various methods, but that which is called whip grafting is to be preferred for ordinary kinds of fruit trees. But this is a thing which must not be done in a hap-hazard fashion. First begin by choosing those kinds which are known to do well in the district, and consider also in what month it is desirable to have the fruit ripe, as there is no difficulty in having, for inclusive Petris for six successive months. aiso in what month it is desirable to have the fruit ripe, as there is no difficulty in having, for instance, Pears for six successive months, and Apples for ten months. In choosing the stone set them from near the top of the tree, where the shoots are firm and thoroughly ripened, as these will make far better growth than any taken from the under branches. under branches.

The present is a suitable time to go over the

Strawberry plantations, and where gaps are found to exist they may still be made good. A piece of ground should now be got ready for a new plantation; and seeing that it may profitably stand for three years, the land wants to be well prepared beforehand by trenching it, adding at the same time plenty of manure. Plants which have been forced may be planted out in Plants which have been forced may be planted out in rows 3 feet apart in April and onwards from time to time as the crop is gathered; or runners from the bed which have been pricked out for that purpose do well. Nurserymen now advertise them for sale in 60-sized pots, and from these half a crop can be gathered the same year. We still grow on a south border Black's Seedling, generally known as Black Prince, for the first crop, and for the later and main crops, President, Sir J. Paxton, Vicomtesse Hericardte Thury, President Delacour, James Veitch, Sir Charles Napier, Mr. Radchiffe—the last belongs to the British Queen class, and is much hardier; and on a north Napier, Mr. Radchiffe—the last belongs to the British Queen class, and is much hardier; and on a north border Trollope's Victoria, Loxford Hall, Helena Gloede, and Frogmore Late Pine. That pretty white kind, and now seldom seen, called Bicton Pine, is very desirable, but perhaps the best-flavoured Strawberry in cultivation is Hammonia. This, when better known, will be much sought after. The Strawberry delights in a stiff loam, and should never

be dug amongst. If the ground gets weedy, it may be very lightly pointed over, but it is better not, and if the land is light, mulching cannot take place too soon after planting, and strawy litter, either from the stables or farmyard, laid on now will wash quite clean before June, when the crop ripens, and the large and abundant crop will show the advantage of

Leave the pruning of Fig trees till later on, for if cut now, and severe frost should follow, they are very apt to be injured. J. Rust, Eridge Castle, Sussex.

The Orchard House.

THOSE who started their early orchard-house in December have had a good chance to get the trees safely through the blooming period in February. It was easy enough all through that month to keep up the temperature without using much artificial heat. Peaches and Nectarines set their blossoms best when there is a current of air through the house, and it is also desirable to admit air at the highest part of the also desirable to admit an at the blowed to blossom at their ordinary season in April there is not much difficulty in setting the fruit. There is a difficulty in setting the fruit. blossom at their ordinary season in April there is not much difficulty in setting the fruit. There is a difficulty to do this in February, but only free setting sorts should be grown, and the best varieties of Peaches, such as Hale's Early, Early York, Royal George, Early Grosse Mignonne, Bellegarde, and Noblesse, set freely. Free setting Nectarines are Lord Napier, Stanwick, Efuge, Pine Apple, Violette Haitive, and Victoria.

The trees in the unbeated orchard-house output to

The trees in the unheated orchard-house ought to be retarded as much as possible. This is done by keeping the ventilators wide open night and day, except during severe frosts. I do not let the trees want for water at any time during the winter months. Some persons do not water them at all; in that case it will be necessary to saturate the balls well with water now, and one or even two applications is not enough to thoroughly wet the balls, which in most cases are a dense mass of fibrous roots. The trees ought now to be placed in the positions where they are to remain for the season. It will not yet be too late to prune any trees that may require this attention; indeed, the inexperienced cultivator had better leave the pruning until the early days of March, as it is easy enough then to tell which shoots ought to be removed and which should be left. Leaf and blossom

removed and which should be lett. Leaf and blossom buds can also then be easily distinguished.

It is not generally known that the blossoms of Peach and Nectarine trees set better in the orchard-house than almost any other kind of fruit. Apricots, Plums, Cherries, and Pears require a much drier atmosphere. When I first began to grow pot-trees in the orchard-house I used to place the Peaches and Nectarines in the best position—that is pearest to the Nectarines in the best position—that is, nearest to the light; but this was soon found to be a mistake. Apricots, Cherries, and Pears should have a house to themselves; and a light, cheap structure, not too closely glazed, would be better than one made in the best style. The trees in this house would not require much syringing. J. Douglas.

The Orangery.

DURING last season I had practical proof of the importance of a high temperature to bring up the flavour of the fruit during the ripening period. I have always advised a temperature of 65° as the minimum, but circumstances did not admit of our trees being cover in a higher temperature, then about 50°. mum, but circumstances and not again, about 55°, being grown in a higher temperature than about 55°, although we kept up the temperature in the day by sun-heat. I found a passage to-day in one of the useful little manuals published by Mr. Rivers, of useful fifter maturals purished by Mr. Kvets, of the paramount necessity of a high temperature during the period of the ripening of the fruit. He says:—
"In Grenada, West Indies, the Oranges commence to ripen towards the end of October, in a temperature to ripen towards the end of October, in a temperature varying from 70° to 80°, or thereabouts. Their flavour there, freshly gathered from the trees, is so delicious that they are far superior to those we receive from St. Michael's and other places, all of which are gathered before they are ripe." The Tangierine variety ought now to be in blossom, if the blossoming period is not already over. I alluded to the setting of the blossoms at p. 179. As soon as the fruit is set the trees may be pushed on in a temperature of 6°, but this is not quite necessary in the early stages. set the trees may be passed on in a temperature of 65°, but this is not quite necessary in the early stages. No harm will accrue to them if the temperature is lower. Mr. Rivers recommends plunging the pots, or placing them on a heated surface. Probably this would further aid in the rapid development of the would further aid in the rapid development of the fruit. It is a point of some consequence to have it in early. The Tangierine is succeeded later on by the Maltese Blood and St. Michael varieties. The trees should be surface-dressed or reported before they start into growth. I find some powdered bones a good addition to the usual dressing. J. Douglas, Great Gearies, Ilford.

APPOINTMENTS FOR THE ENSUING WEEK.

APPOINTMENTS FOR THE ENSUING WEEK.

MDNDAY, Mar 10 Sale of Homercown Lilles, Gladioli, &c., at Stevens Rooms.

Royal Horricultural Society: Fruit and Floral Committees, at 11 A.M.; Scientific Programmers, at 12 A.M.; Scientific Programmers, and Floral Committees, at 11 A.M.; Scientific Programmers, and Floral F

A YELLOW coloration of the leaves is too sure a sign of want of vigour in a plant, and is often rightly enough attributed to some mismanagement upon the part of the gardener; but, although this truth is generally recognised, it is not so well known to what precise causes the sickly condition is due. Some recent experiments of M. A. LECLERC, performed, as it would appear, with all the attention to details, and all the care requisite to eliminate possible sources of complication and error, tend to throw considerable light upon the matter; and, although M. LECLERC'S conclusions are based to a large extent upon plants grown in the open field by the farmer, yet it is clear that, if well founded, they must apply equally well, and indeed in many respects more definitely, to plants grown under the more neatly-defined conditions under which a gardener places his plants. M. LECLERC's experiments in the first instance were purely laboratory experiments, undertaken with a view of ascertaining the amount of watery vapour exhaled by plants, and the conditions under which that process takes place, but he was after-wards led to apply the conclusions at which he had arrived in the laboratory, where conflicting elements were eliminated, to the rougher test of the field, where all sorts of complications less under control of the cultivator arise.

Experiments showing the vast amount of fluid lost in the form of vapour or otherwise, have long been familiar to physiologists in this country from the time of HALES to that of LAWES and GILBERT, not to mention experimenters of other nations. We need not revert to these, nor to the confirmatory experiments of M. LECLERC. It may suffice to give some of the main conclusions arrived at by the last-named observer as detailed in a recent number of the Annales des Sciences Naturelles. As the results of his delicate and precise experiments M. LECLERC shows that light by itself has no influence on transpiration, and that, as might have been expected, it ceases when the atmosphere is saturated with moist vapour. At first sight it would seem as if a plant exposed to the light must necessarily evaporate more fluid from its surface than one not so exposed, and that is so; but the effect is not due to the light only, but partly to the heat-rays which act conjointly with the light, and by heating the tissues cause them to give up their vapour, and partly to the chemical action which goes on in the leaves during the process of assimilating the carbon from the carbonic acid gas, and the consequent elimination of oxygenfunctions which, as is well known, are exercised by all the green parts of plants when exposed to solar or electric light.

Turning to matters of more direct practical importance, M. LECLERC proceeds to speak of the yellow appearance so familiar to Wheat growers in certain states of the atmosphere. In his numerous experiemnts on evaporation M. LECLERC always found that plants grown for a certain time in a saturated atmosphere, or one which was near saturation point, soon became yellow. This yellowing was evidently caused by the atmosphere being overcharged with moisture. Previously he had considered that effect as the consequence of excess of water in the soil; but on examining into the validity of these two opinions, so radically different, and by the aid of easily repeated experiments, he arrived at the conclusion that the cause of the yellowing was intimately connected with transpiration, and consequently was dependent on the state of the atmosphere.

By means of an experiment, which we need not describe in detail, but the object of which was to expose the foliage alternately to dry and saturated atmospheres, the other con-ditions being uniform, and the roots in all cases plunged in water, it was found that the plants whose foliage was exposed to a saturated atmosphere became yellow. yellow plants were then placed in a dry atmosphere, and the green ones in a saturated atmosphere, thus reversing the previous experiment. The result was that the yellow leaves became green, and the green ones yellow. A repetition of the experiments in both directions produced the same results. Thus atmospheric conditions alone sufficed to bring about these changes, the roots remaining in all cases under the same conditions. These results were tested in various ways, but the same conclusions were always arrived at-viz., that the yellow state of the leaves was the result of diminished transpiration, due to the more or less complete saturation of the atmosphere with moisture.

In other cases an unhealthy condition is brought about, not by diminished, but by excessive transpiration. For instance, if a plant be grown under an almost constantly clouded sky, the atmosphere and soil alike charged with moisture, and then these conditions be suddenly altered, so that the leaves become exposed to a burning sun, then evaporation becomes excessive and the leaves wither. By removing a certain number of the leaves, and thus reducing the amount of evaporation, the ill effects were checked. By observing what happened under given conditions, and by noting the result of reversing and alternating those conditions, it was shown conclusively that the unhealthy conditions were due in the one case to defective, in the other to excessive, transpiration. The gardener has the advantage over the farmer in this particular, that he can to a large extent regulate matters and prevent either extreme. For this nothing more than careful observation and tact, born of experience, are required.

- CLERODENDRON TRICHOTOMUM. - For the opportunity of illustrating this beautiful hardy shrub we are indebted to Messrs. VEITCH, who sent us specimens for the purpose last autumo. The plant is a native of Japan, where it is recorded as being found on the outskirts of woods. In habit and general appearance it is like C. Bungei, but is destitute of the sagreeable odour characteristic of that plant, on which account it is perhaps preferable. M. LAVALLÉE, in his Enumération of the shrubs and trees cultivated at Segrez, mentions a glaucous variety which we have not seen. C. trichotomum is an old species, described by THUNBERG in his Flora Japonica, and taken up by all subsequent authors. In cultivation, however, it is still scarce, though introduced as long ago as the beginning of the century. (See fig. 59.)

- RHODODENDRON GRANDE .- A plant of Rhododendron grande belonging to Mr. MANGLES is now in bloom at Messrs. VEITCH's Chelsea establishment. The species is rare, but the peculiarity of the plant in question is its small and portable size, which has facilitated its transfer to London. As a rule, these plants bloom only when large, but in this case the specimen is about 4 feet high, and has two large trusses of blossom. It passed the whole of last winter (1882-1883) in the open air under a north wall without any protection.

- ROYAL HORTICULTURAL SOCIETY .- We are informed that, in addition to the fortnightly meetings, arrangements have been made with the Council of the International Health Exhibition to hold monthly exhibitions of fruit and vegetables in the conservatory on the following dates, when prizes amounting in the aggregate to £1000 will be offered for competition:—May 27, June 24, July 22, August 12 (cottagers' show), August 26, September 23, October 14, October 28. The schedules are now being prepared, and may be had on application.

- GARDENERS' ROYAL BENEVOLENT INSTI-TUTION.—We understand that at a meeting of the committee, held on Monday evening last, JAMES McIntosh, Esq., Duneevan, Oatlands Park, was elected a Vice-President in the place of the late R. HANBURY, Esq., and Mr. A. F. BARRON, of Chiswick, and Mr. JOHN LAING, of Forest Hill, were elected members of the committee in the places o Mr. JACOB ROSE, resigned, and Mr. B. MALLER, deceased. July 2 was the date fixed for holding the forty-first annual festival, at the "Albion," Aldersgate Street. It was also decided that a simultaneous collection in aid of the Pension Augmentation Fund should be made again this year, and a sub-committee, with Mr. JOHN LEE as chairman, was appointed to carry it out.

- A GOOD INVESTMENT .- At the last meeting of the committee of the Gardeners' Royal Benevolent Institution the death was reported of Mrs. Susan GREEN, of Fairford, aged eighty-four years, one of the oldest pensioners on the list. Her husband, who had subscribed something under £20, enjoyed a pension from the Institution for ten years, and on his death, in 1861, his widow was placed on the list, in accordance with the rules. Thus for less than £20 subscribed husband and wife together received in return no less a sum than £430; and in the face of facts like these there are still men in our midst who have not a good word for the Institution.

- MANCHESTER ROYAL BOTANICAL SOCIETY. -That " nothing succeeds like success " holds good in its relation to horticultural exhibitions as in most other things. When a society has once earned the approbation of the public by the displays it provides, the public testify their approval by continued attendance. Nowhere is this better exemplified than in the career of the Manchester Botanical Society, whose Whit-week gatherings have fostered a taste for flower shows through the surrounding neighbourhood, so that the Society is now each year able to hold a number of exhibitions alike remarkable for their excellence and the attendance they command. The schedule for the annual Whit-week exhibition, May 30 to June 6, is now being distributed, and is of a similarly comprehensive description to the many that have preceded it. The popularity of these Old Trafford gatherings is in no slight measure owing to their comprising the different plants and flowers in season shown in such numbers and condition as to give the display a thoroughly representative character. We have no doubt the forthcoming show will be in every way worthy of the long series of successes that have gone before it.

- PARKINSON'S "PARADISUS."-A good many people, we suspect, have experienced difficulty in construing "Paradisi in Sole Paradisus terrestris." The editor of Aunt Judy's Magazine, and the venerable Rev. H. T. ELLACOMBE, are confessedly among the number, but they have been the means of eliciting from correspondents of Notes and Queries the explanation that the title is a wretched pun. "Paradisus" is a park; "Paradisi" is, of course, the genitive of this; "in sole" is in (the) sun (son). Hence the title would run, "The Terrestrial Paradise of Park-in-son." Such punning titles were not uncommon in PARKINson's time.

- FORSYTHIA FORTUNEL .- This fine winterflowering deciduous shrub is now in fine bloom on the wall at Chiswick. It reminds one of Jasminum nudiflorum, but with longer, larger blossoms, and of a deeper yellow colour. It is a great improvement on F. viridissima, and should find a place in all collections of winter-flowering shrubs. The east wall at Chiswick appears to suit it exactly.

- CANKER .- While the discussion upon this subject is going on, it may be worth while to recall the observations of R. GOETHE in the *Monatschrift des Deutscher Garten* for 1880, in which he shows that



FIG. 59.—CLERODENDRON TRICHOTOMUM. (SEE P. 312.)

the disease is due to the growth of a fungus (Nectria ditissima) in the cells of the bark, as previously detected in a similar case in the Copper Beech. GOETHE succeeded in cultivating the parasite both from conidia (bud-sp-res) and asco-spores. The same fungus produces canker on various kinds of Pear trees, and the spores of the Nectria from the Apple were found by experiment to produce canker in the Beech and Sycamore, and conversely. The best remedy is to cut out the diseased tissue, and anoint carefully with warm

coal-tar. The fungus, according to HARTIG, enters through wounds caused by hail or by the puncture of an iosect, Agrilus viridis, so that it would seem that all the factors that have been invoked may have some part in the production of the disease, and that the discrepancies be thus harmonised.

— THE CAUSE OF DISTORTION IN APPLES.—
Mr. BUNYARD brought to the Fruit Committee of
the Royal Horticultural Society on February 12 some

strangely distorted Russet Apples. Of course several suggestions were made as to the cause, and one more especially, that the condition was due to the attack of some insect in a very early state of growth; but as such suggestions were oot founded on definite observation, they did not lead to any certainty. One of these Apples was kindly given to the writer of these observations, and after close microscopical examination it was observed that the Apples themselves show old cracks, in which the exposed tissue has

been overgrown with a compact, cork-like matter developed from the superficial cells, more or less transversely fissured; but besides these old cracks, there are what may be called wheals rising above th general surface, and of a green tint, contrasting with the russet skin. When these are examined with a low power, on the sides remains of the fissured corky tissue are observed, and on turning to the old cracks a very thin green line hetween the lips of the cracks is seen, which suggests that the wheals may be the result of the growth of the tissues of which this line is composed; and this is singularly confirmed by the fact that after three weeks in a warm room, exposed occasionally to sunbeams, the green line has extended, and, in fact, a new wheal has been formed, which is absolutely of the same nature as those first apparent.

THE

-- Snowdrops.-These have been, and still are, a charming feature at Chiswick. On a sloping bank of rockwork Mr. BARRON had planted up some varieties raised by Mr. MELVILLE, of Dunrobin, a very early blooming variety of Galanthus nivalis præcox being in full flower fully ten days before any other variety, even the common Snowdrop. Two others of Mr. MELVILLE'S follow : one, flowering, is now at its best, another is only just coming into bloom. While it would perhaps be difficult to class these as separate, they do certainly supply a kind of continuity in flowering. The large lateflowering form, named Melvillei, is also just expanding; its flowers are both fine and bold. The foregoing are all single-flowered, and they are really of great value for rock gardens and other places where they can remain undisturbed, being first of all planted in soil that affords them good nutriment.

- PLUNGING POTS IN COLD FRAMES IN WINTER .- Mr. BARRON has carried out this practice on a somewhat extended scale at Chiswick during the winter. All the plants in pots in the long range of pits where choice hardy subjects are propagated are plunged up to the rims of the pots in cinder ashes, and it imparts a very neat and orderly appearance; it suits the plants, and, as Mr. BARRON observed, the cost in broken pots from frost balances the cost of the extra labour required in plunging. Looking along this frame one sees the pretty and distinct yellowflowered Primula floribunda blooming merrily, and has been in good form for six weeks past. There are also some charming little specimens of what one does not often see-the pretty manve-coloured alpine Soldanella, with its pleasing-fringed flowers. unique for pot culture, and Mr. BARRON appears to have treated it very successfully. Cheiranthus mutabilis is also a striking subject, a small tree-like plant being in full bloom. The little yellow-flowered Dondia epipactis is there also, and it is in good condition on the rockwork, where such a small unobtrusive little plant can be seen to the best advantage.

- DISEASE IN EUCHARIS. - Since Mr. MAR-SHALL's communication of specimens of a formidable disease in Eucharis, which we promised to submit to further examination, we have received the formation from another quarter, where the disease affected the bulbs of every age, quite destroying the smaller ones, and more or less damaging all, but notwithstanding the collection is now perfectly healthy, and only a single speck could be found after diligent search, but, on the contrary, it seems transferred to different varieties On examination no spores were found, of Amaryllis. but numerous dark red perithecia, from which an extremely delicate mycelium or spawn branched in every direction, accompanied by abundant raphides, either scattered or in compact bundles. The disease did not seem to penetrate very deeply into the bulbs, though the tissue was stained with the brick-red endochrome for some distance. In Mr. MARSHALL's specimens there was a very curious condition, whether a form of the originally noticed disease or not is uncertain. Both in the leaves and roots, and the base of the bulbs, little cracks appeared, which are filled up with an altered condition of the tissues, of a beautiful red, the component cells of which formed an apparently pulverulent but rugged stratum, which at first looked like the spores of some Uredo, but absolutely without any trace of Fungi. The disease having vanished almost entirely in one case, gives hope that it may not be so formidable as was at first imagined. We have had more than one instance in which diseased bulbs which have been forwarded to us have

quite recovered when planted afresh, a fact which seems to imply that atmospheric conditions have in the first place encouraged the growth of fungi. M. J. B.

- Wheeling Bridges and Scrapers .- In many gardens these simple appliances are conspicuous by their absence; paths are often coated with the earth and manure the men carry on their boots, which, of course, drops off as soon as the path is reached, and thus expensive gravel soon becomes infested with innumerable small weeds, that cost a good deal of time and money to destroy. Now, if it were made the common practice to put up scrapers at each corner of kitchen garden quarters, this un-sightliness and expense would in a great measure be avoided. Worn out scythe blades, or strong hoop-iron cut into lengths of 15 inches, should be inserted at each end into hardwood stumps, of convenient size and strength, which should be tarred and charred at the lower end. These items are easily made, and cost little more than the labour of making. Bridges made of hard-wood sufficiently light to be easily handled supply also efficient means to keep Box edging in a tidy condition where wheeling has to be performed. Men are generally so little inclined to give themselves any trouble over the matter of breaking down the Box edging, that where these things are introduced a good deal of strictness must be used before they will make use of them in all weathers. The bridge is that point at which they ought to stop to clean the wheel if necessary before coming off into the path, so that there should be no excuse for bringing soil off the quarters either. A handy labourer can make these simple bridges, which are simply two-arched pieces of Elm or Oak cut so as to clear the edging, when half the bridge lies on the walk, the two pieces being joined together by nailing small spars across, so as to form the floor of the structure, the total length being about 3 feet, and the width I foot, and weight about 20 lb., as it is not requisite to nail the spars close together. Four of these would be found sufficient for a large garden.

- THE ISLEWORTH NURSERIES. - At the Isleworth Nurseries Ligustrum lucidum is made use of to make shelter-hedges between breaks of Euonymus japonica aurea. It is a fine thing, and in mild winters like the present almost an evergreen, but, like the golden Euonymus, which it is employed to shelter from cutting wiods, it has the failing of not heing hardy enough to withstand more than 12° of frost without suffering. L. sinense is to be found used as an edging plant to roads, for which purpose it is allowed to reach the height of 11 foot. It then forms a neat little hedge, and grows into an entangled miniature fence, which at first sight is suggestive of Ficus repens. Muhlenbeckia complexa was doing well as a clump at the foot of a wall. This uncommon plant would make a pretty thing for a low wall that would at the same time protect it and serve as a support. It is interesting as a greenhouse plant in haskets, or for covering small objects in wire, the tangled black wiry shoots and leaves bearing a resemblance to the pinnæ of an Adiantum. Garrya elliptica fœmina was full of catkins on the same wall, and near by was G. Fremonti, a much rarer and hardier species, of which there is a figure in our volume for 1881, April 2, p. 431. In foliage effect alone this latter is decidedly less ornate than the G. elliptica feem. The quantities of the different garden varieties of Euonymus, such as aureo-variegatus, albo-variegatus, aureo-pictus, as aureo-variegatus, alibo-variegatus, aureo-pictus, radicans-variegatus, which are propagated chiefly by grafting, would astonish those who are not acquainted with London requirements in this way. chiefly made of the above-named sorts are the filling of window-hoxes and pots, and winter bedding, in the whole range of hardy plants there being nothing that can approach them for clean bright tints. In arrangements of winter beds consisting of Ivies, Cupressus, Mahonia, Skimmia, Erica, and the like, these Euonymuses light up the sombre tints of greens wonderfully well; so that there is small reason to wonder what is the destination of the 100,000 plants turned out annually from this nursery alone. Other plants that are grown in great numbers are Conifers in considerable variety, and which grow well at this distance from London smoke; Roses and Clematises of many sorts, these latter being produced from cut-Out-of-doors such is the effect of the mild weather that Clematis Lady Dorothy Neville had very prominent flower-buds, although the plant was

quite away from any wall or other sheltering object; and Daphne indica rubra was full of flower against a south wall in the open, where it has stood now for the fourth year without covering. The collection of Camellias here is a good one, and the plants stocky, large leaved, and robust, The collection of Camellias here is a good the result of the practice of planting-out while one, two, and three years old. This is done in various cool structures, having little, if any, heating apparatus; and in these the plants make growths far in excess of that which is possible in pots. In the houses, beyond the general assortment of stove and greenhouse plants usually found, a good collection of greenhouse Heaths is still maintained, of which we noticed symmetrical plants of trade size of aristata major, aristata superba, the fine free E. Savillea, Cavendishii, Exquisite, æmula, Hartnelli, Shannoniana, Massoni major, tubæformis, inflata, Victoria Regina, and other good sorts, as well as others of the more ordinary type. The fine Statice floribunda, certificated May 23, 1882, by the Royal Horticultural Society, was growing very satisfactorily in a cool house. A few Pimeleas were seen, but the remnant only of kinds that once were very popular show and ordinary greenhouse plants. Acacia Drummondi is apparently a plant much in request, great numbers of it being

- TOBACCO GROWING, -In the House of Commons, recently, Lord JOHN MANNERS asked the Chancellor of the Exchequer if he had prepared a scheme for allowing the agriculturists of the United Kingdom to grow Tobacco for sale. The Chancellor of the EXCHEQUER said that, in accordance with the promise he gave the noble lord during last session, he had carefully inquired into this subject during the recess. For a certain number of years, beginning 1779 and ending 1830, Tobacco was allowed to be grown in Ireland, and at the end of that period a committee of the House sat, and a Bill was passed putting an end to the permission to grow it. At that time the free trade rules which are now understood to he the basis of our legislation were not so well understood, and Tobacco grown in Ireland was not subjected to duty. Of course, if now permission were restored, that Tobacco would have to payan Exciseduty and a countervailing Customs duty; and the Chancellor was quite satisfied that, inasmuch as the old experiment when there was no duty practically failed-not much Tohacco having been grown-nothing would be gained if permission were now granted. With an Excise duty it would fail altogether, except in the case of those who might hope to escape the duty. He therefore had, after the fullest consideration, come to the conclusion that it would not be possible to allow the growth of Tobacco in this country. - Lord J. MANNERS gave notice that he would call attention to the subject on an early day.

— Begonia Manicata,—This very free-flower ing old winter-blooming species is now to be seen in good form at Chiswick. Its freedom of bloom can be estimated from the fact that plants in 32-sized pots had thrown up sixteen spikes of flowers, these being small but plentiful, white tinted with pink. It is something in the way of B. carolina, which has flowers of the same character, but larger, while it is also decidedly coarser in growth. B. manicata is an excellent decorative plant in winter.

- FORCING PINKS,-These are now so much grown for their flowers in early spring, that it will not be out of place to utter a word of caution to cultivators in regard to the management of these plants. A lew days since we saw some placts of Pinks that had been put into a strong heat, with the inevitable result that the foliage had become drawn and attenuated; and if any flowers are produced they will be small and unsatisfactory. The fact is, that forcing Pinks in pots require a cool and airy treatment during autumn and winter, shutting up the house or pit close only when necessity requires it. If it is necessary to apply heat it should be of a gentle character, and the plants should be as near the glass as possible. A good head of flower is only possible with a robust, clean, healthy growth: and an airy position and plenty of light conduces to this. And it may be further stated, that if a little manure-water be given about twice a week, plants and flowers both will be greatly helped thereby.

— THE USE OF CHARCOAL as a medium in which to pack seeds to be sent to this country from abroad is very common indeed; in fact, a consider-

able number of scientific correspondents seem to pin their faith to charcoal, as a packing agent, to a remarkable extent. As far as our experience goes, its use is, however, decidedly objectionable, as, apart from its dirtiness, it absorbs the moisture from the seeds, and in many cases so thoroughly, that all germinating power is lost by the time the package arrives at its destination. All short-lived seeds seem to travel best in damp clay or moist earth. Packed firmly in damp clay, SIEBOLD succeeded in introducing Tea seeds from the Chinese Tea countries to Java, and also the seeds of a large number of Oaks, Camellias, and other Japanese plants, from their native country to Holland. Seeds of Tea, Coffee, and a host of other plants, which utterly fail to retain their germinative faculty during a lengthened sea voyage when packed either without any packing medium, or forwarded in charcoal, grow readily when treated in the manner adopted by SIEBOLD. We are glad to see Mr. PRESTOE condemning the use of charcoal in his last report on the Trinidad Botanic

- SEXES OF NUTMEG TREES, - Any method by which the sex of seedling plants of the Nutmeg may be determined with any approach to accuracy is a matter of no little moment to many who are interested in tropical agriculture. As the males, in excess of those required for purposes of fertilisation, are useless, much labour and time may be saved by following Mr. PRESTOE's directions. In the last published Report on the Trinidad Garden Mr. PRESTOE says :-"The planting out of successional Nutmeg trees has enabled me to determine the sexes in seedling plants under a foot high by character presented in the leaf form and venation, and with sufficient accuracy for all practical purposes; as also the proportion of male trees and female as usually raised from seeds." order to distinguish the male and female seedlings the form of the leaf and the direction of the veins must be observed, the female leaf being the most perfectly elliptical, with the straighter primary veins; the male leaf is broader towards the point than at the middle-that is, of obovate shape, and furnished with a point much longer than that of the female; the veins are curved-in towards the point much more roundly than in the female. Mr. PRESTOE has proved by experiments conducted by himself-and the young trees now fruiting fully bear out the statement-that by carefully following the tests above given, the results will be correct eight or nine times out of ten.

- AFRICAN WOODS .- It is not too much to expect that one of the results of the forthcoming Forestry Exhibition at Edinbugh may be the development of the timber resources of some of our colonies. The subject is one of very wide interest, and there is room at the present time for an extension, not only in quantity but also in variety of our timber and ornamental wood supplies. Many apparently excellent woods are brought home by different travellers from time to time from various parts of the African continent, but their botanical sources are, for the most part, unknown, and they never come into actual use. The principal African wood indeed of acknowledged value at the present time, is the so-called African Oak or Teak (Oldfieldia africana), which is so useful for piles for wharves, &c.
This, however, is an example of a durable wood, useful for structural purposes, but not of an ornamental character. An example of a West African wood, Loth durable and ornamental, has recently been presented to the Kew Museum by Captain MOLONY, C.M.G.; it is furnished by Chlorophora excelsa, BTH. and Ilook. f., a tree belonging to the Moreæ section of Urticaceæ, growing at Upper Guinea, where it is known under the names of Roko, or Iroko, wood. Notwithstanding its ornamental character, which, when polished, ex-hibits a combination of Satin and wavy Maple woods, it is noted for its great strength and durability for building purposes, as it resists the attacks of white ants-a great recommendation to any wood required for use in tropical countries.

— Mr. Bethell.—We hear that, through Sir RICHARD WALLACE having disposed of Sudborne Itall, Mr. Bethell will be open to another engagement at the end of the present month. Each department of this very extensive and well-managed garden alike bears unmistakable evidence of Mr. Bethell's skill and care. We trust he may soon meet with

another situation where there will be scope for his abilities.

WORK GALA.—The present season marks the entry of this important Society on the second quarter of a century of its existence. The extent and excellence of the shows, coupled with the never-failing attendance of the vast crowds who look upon the gathering in the Bootham Field as an established institution that must be attended, augur well for the future of the Society. The continuance of liberal prizes offered in the respective classes in each department of the schedule, combined with well considered and equally well carried out arrangements for the convenience of exhibitors, never fail to meet with a response from the leading growers, whilst the public, who in this part of the kingdom alike appreciate flowers and music, know that they will not be disappointed. We trust the Society has a future before it equal to the past. This year's exhibition takes place on June 18, 19, and 20.

THE SURVEYORS' INSTITUTION. — At the meeting to be held on Monday next a paper will be read by Mr. A. J. BURROWS (Fellow), entitled "The Construction and Maiotenance of Country Roads," The chair to be taken at 8 o'clock.

—— EALING, ACTON, AND HANWELL HORTI-CULTURAL SOCIETY.—The annual summer exhibition of this Society will take place on Wednesday, July 9, and the usual Chrysanthemum exhibition on Wednesday, November 5.

HEADING CHRYSANTHEMUM SOCIETY.— This is now a distinct organisation from the Reading Horticultural Society, and an exhibition will take place in the Town Hall, Reading, on Friday, November 11

THE WEATHER -General remarks on the THE WEATHER.—Leneral remarks on the temperature, rainfall, and duration of bright sunshine, for agricultural and sanitary purposes, during the week ending March 3, issued by the Meteorological Office, London: — The weather has been generally cloudy or dull in all parts of the kingdom. Some hail or snow has fallen in the north and northeast, and rather heavy rain in Ireland and the south-west of England. Over the greater part of England the weather was dry till the close of the period, when the weather was dy in the close of the period, when the unsettled, rainy conditions previously noticed in the west had extended eastwards. The temperature, excepting at the Irish and some of the south-westero English stations, has been lower than during any English stations, has been lower than ouring any week since that ending December 10; in most parts of England it has been 4° or 5° below the mean, and the "Channel Islands" it has been 1° or above it, while in "Ireland, N.," in thas equalled its normal value. The maxima, which were generally instantially of the property of the prope registered either on February 23 or March 3, ranged from 44° in "Scotland, W.," to 54° in "Ireland, S." The minima, which were recorded on different days in the various districts, ranged from 24 to 26 and most parts of England, to 34 in "Ireland, S.," and 42 in the "Channel Islands." Rainfall has been a tle less than the mean in Scotland and the north of England, but more elsewhere. Bright sunshine has been less prevalent than during last week, the percentages of possible duration varying from 7 in "Ireland, N.," and 11 in "England, N. E., "to 28 in "Scoland, N." Depressions observed,—Soon after "Scoland, N." Depressions observed.—Soon after the commencement of this period pressure began to decrease over France and the south-west of our islands, and to increase in Scandinavia. Over the former region the barometer became comparatively low, while in the latter an area of high pressure was found. No depres-sions appeared in our immediate neighbourhood until the last day of the period, when some disturbances were shown in the north-west. The wind, which at the opening of the week was light and variable, subseshifted to the eastward in the south and southeast, to south-east in the west, and to south-south-east cas, to south-east at the west, and to south-south-east or south in the north, and in some places blew freshly or strongly; at the end of the period (owing to the disturbances in the north-west) westerly breezes had set in over our island, and southerly winds over the whole of Core blisting. of Great Britain.

—— GARDENING APPOINTMENTS.—Mr. JAMES CARDINER, lately Gardener at Esstead, Lanarkshire, N.B., as Gardener to Mrs. Dalton, Sleningford Park, Yorkshire.—Mr. William Maxwell, tately Gardener at Quarry Hill, Reigate, Surrey, as Gardener to Mrs. CHAMBERS, Clough House, Rotherham.—Mr. THOMAS BATHGATE, lately Gardener at Alderstone, Haddington, as Gardener to J. R. HAIG. Esq., of Blainfill, Parkgate, Withham, Sussex.—Mr. J. SYLVESTER, Gardeoer to T. ISHERWOOD, ESQ., Heywood, Manchester, as Gardener to E. ASHWOOTH, Esq., Staghills, Waterfoot, Bury.

ORCHID CULTIVATION FOR AMATEURS.—VII.

To any one who has seen epiphytal Orchids growing in the wild state and clinging to the stems and branches of trees far overhead, it is very wonderful to note the success obtained in our gardens where we treat the bulk of true epiphytes as if they were terrestrial or sub-terrestrial species. (See an article of mine on "Orchids at Home" in these columns, May 10, 1879, p. 587). If we wanted any direct proof that Orchids are as amenable to culture, as accommodating in their habits as Ferns, Aroids, or Bromeliads, we may find it in the success which modern Orchid growers attain. And they are right, for in our climate the atmospheric condition of our houses can but very rarely be maintained in a state suitable to plants grown as epiphytes pure and simple. There are two dangers in the potting of these plants, however, which amateurs must take care to avoid, viz., pots too large, and the absence of sufficient drainage. Epiphytes pure and simple, such as Dendrobes and Phalænopsis, require very little compost, and the smaller the pots are the better. Mr. Dominy did Orchid growers a great service when he brought the now popular shallow Orchid-pan (for suspension from the roof) into notice, and these paos have given ample proof that Orchids do not require the enormous bulk of compost formerly thought indispensable. As to the compost for Orchids itself four things are necessary :- Good brown fibrous peat, fresh sphagnum moss, picked and partially dried, crocks, and clean charcoal. Now and then a little fibrous loam will be required for strong-growing plants, such as Cymbidiums, Cypripediums, Calanthes, Phaius, and Pleiones. Even the delicate little Apactochilus grow best in clean loam-fibre and sphagnum moss. difficulty is to obtain good peat, and whenever a sound sample of the right sort ("sods as tough and as fibrous as door-mats" was the description given to me by a famous old Orchid grower when he sent me as a boy to the peat-stack for a supply) is found you can scarcely do wrong by obtaining too much of such a "good thing." All sorts of dark coloured greasy kinds of peat are useless, indeed actually injurious to Orchid roots, since it soon washes down uoder the watering pot into black mud. Washing is after all a really good test for peat. Bad samples you can wash all away like so much soap, but of a good tough fibrous sample only the sand and small earthy particles in the interstices of the fibre will be dislodged by washing. The same is true to a certain extent of the best of loam, it should possess a large proportion of fibre, which no washing can remove. This especially should be the case with the loam used

Sphagnum moss is a grand aid to success in Orchid culture, and especially so when of good quality. The best I have ever seen is found near Stirling, indeed it seems stronger and tougher in the North than elsewhere. Of late years it has been extensively employed, indeed as a fact it is interesting to notice that Orchids generally, and especially the cooler growing of mountain Orchids, were never grown successfully until the use of sphagnum or bog moss because general, just as some other Orchids, as Catasetum, Cycnoches, Gongora, &c., have never been well grown since the old "bark stowes" heated by flues went out of use. But I must remember that the history of Orchid culture is not quite what present-day amateurs desire, so I must get on to the potting and watering.

POTTING. — The potting of Orchids is really a very simple matter, and my golden rule is never to pot a plant until after it has commenced to grow, and then as soon as ever I see indications of the new roots appearing from the new growths I repot the plant, and so the new roots find new, fresh, and sweet composts quite ready for them. The amateur having learned, I hope, by this time, that there is no "royal road" to Orchid culture, will also now see clearly that there is no special season for reporting his plants. He must watch them like babies, and be ready to feed them when their new growths and new roots cry out for more room. For small plants shallow suspension pans are best; but all large growing things, such as Cattleyas, Lælias, Lycastes, &c., must be grown in Some use perforated pots, others rough glazed ones for the sake of cleanliness, and others common garden pots of the usual pattern, and in all three cases the results are pretty much the same. The

main point is to ensure plenty of drainage. This is a point amateurs are apt to overlook, but the fact is, the more water a plant requires the more drainage should be given, otherwise the compost soon becomes stagnant and sour. My own plan is to place large convex crocks over the bottom of the pot, taking care to enlarge the drainage hole, which potters always make much too small. Then a deep layer of small crocks is added-a layer of very small ones being placed along the top, and on these a layer of hypnum, or wood moss, which acts as a filter to prevent the earthy matter in the compost from washing downwards into the crocks. Over this the roots of the plants surrounded by the compost, which, as a general rule, will be composed of two parts of brown fibrous peat, one part of sphagnum, and one part of charcoal nodules and small crocks mixed together. The compost should be firmly pressed around the roots. If the compost is loosely packed two evils result from it.

Firstly, the plant is not firm but shaky, in which case no Orchid will grow well; and, secondly, loose compost retains too much water, and so is not only wetter but colder than if tightly packed. As I have before said in these papers, "it is not the quantity of water poured on the compost but the quantity retained by it" which influences the plant for good or ill, and my own experience is that "that Orchid is the healthiest which wants watering most often," and in order to ensure this state of things the compost must be firm and well drained, so that however much water is given only a certain quantity-namely, that absorbed and retained by capillary attraction-can remain. This is such an important point in the potting of Orchids that I must illustrate it for the amateurs most concerned. Now, as to firm versus loose composts for Orchids. Take a large bath sponge as big as your head and dip it, loose and open as it naturally is, in water. Of course it holds and retains a pint or more of water. Now squeeze it dry and ram it rettly tight into a configuration to the hold foliation. pretty tight into a coffee-cup or into a half-pint measure. Now dip it in water. Ot course it is too tightly pressed to hold much water; the measure itself can only hold half the quantity the sponge itself held before, but now it holds less in proportion to the fibres in the sponge. Now the measure is the flower-pot, and your peat and moss compost is the sponge, and the tighter you press it into the pot the less stagnant moisture it can contain. I find in practice that for such hard-leaved, pseudobulbous Orchids as are Cattleyas and Lælias you can scarcely pot them in too little compost, and that, further, that little can scarcely be compressed too firmly. This is true, also, when sphagnum and charcoal or crocks are used for pure epiphytes, such as Phalænopsis, Aërides, Vandas, Saccolabiums, and Angræcums, which do not take readily to a peaty compost. Some growers likewise grow cool Orchids, such as Masdevallias and Odontoglots, quite successfully in a compost of sphagaum moss and charcoal, or crocks only. But, as I have said before, if the atmospheric conditions of your house or houses are right and genial the question as to compost is not so important. It is, however, highly important that the compost, whether of peat and sphagnum, or of sphagnum and charcoal nodules, or of fibrous loam and crocks, it is highly necessary, I say, that it should be placed on a well-drained base, and one had better have too little of even the sweetest and best of composts rather than too much. As I before remarked, Matthews' shallow Orchid pans, now so popular, bave proved this much to be true, but in teaching reiteration is perhaps pardonable. F. W. B.

EUROPEAN PLANTS IN THE TROPICS,—In spite of the wealth of floral beauty which lies ready to the hand of the gardener in tropical countries the resources of temperate climates are largely drawn upon for the decoration of the flower garden in strictly tropical climates. In his report on the Tribidad Botanic Gardens Mr. Prestoe says that for some years more attention has been paid to the importation of such English spring and summer flowering plants as Gladioli, Dahlias, Phloxes, &c., with results that have much improved the display and resources of the flower garden. It has been found that though these plants are so little tropical, and bear tropical conditions so indifferently that they either revert to the original species type, as in the case of the Dahlia, or in two or three years die out—they grow and flower for a single season in a manner that is little inferior to the productions in Europe.

Home Correspondence.

Rhododendron Early Gem.—I do not see much notice taken of this really beautiful variety. There is a group of half a dozen plants of it in flower in our garden, and whether examined closely or viewed at a distance, they do not fail to please. The flowers began to open early in February, and gave us a mass of colour all through the month. It is quite a distinct plant from the numerous varieties of R. ponticum, but they are not to be thought of for a long time yet, and must not be compared with Eurly Gem. No garden should be without this choice little shrub. J. Dougdas. (See fig., p. 335, vol. ix., 1878.)

Apple, The Golden Spire, —Having seen the Golden Spire Apple noticed in your paper two or three weeks ago, I thought I would send you a small sample to show that, in addition to its other valuable qualities, that of late keeping is another (fig. 60). It is generally looked upon here as an early mid-season Apple, but when it will keep sound till the middle of February it may fairly rank as a late keeper; for Apples here generally begin to lessen in value when Rhubarb begins to be plentiful, as it now is to be bought at 2d, per bunch; in another week of the present weather Early Albert will be gathered out-of-doors without protection. I believe the Golden Spire Apple will be one of the best market-garden Apples known. It is a most prolific bearer; in fact,



Fig. 60.—APPLE, THE GOLDEN SPIRE: COLOUR, GOLDEN-VELLOW.

in a good season it sets too many. It can be used from the time it is large enough to pare; it then bakes splendidly, and it is excellent from then up to the present time; and it is well flavoured: all of which are excellent qualities. Market gardeners generally go in for what will produce the most, regardless of quality, but in the Golden Spire quantity and quality are combined. There is scarcely a tree to be bought of it about here, so great has been the run on it. Farmers are planting it greatly. I think from the appearance of it there must be some blood of the Keswick Codlin in it. Rev. Charles H. Wood, Preston, Lanuashire.

Zinc Labels.—Six or seven years since Mr. J. Allen, of Shepton Mallet, sent here some specimens of Primula Sieboldi named and numbered on zinc labels. Those having the names written on have been in use ever since, being above half the year outdoors, yet even now they are still clear and distinct, and seem as though they could be used for several years yet. I do not know whether Mr. Allen in writing employed any special ink preparation, but I am inclined to think that the ink used was of the common black kind. I should think just one coat of pale varnish would render the writing indelible, and the labels are practically imperishable. The zinc label in question is some 5 inches in length and three quarters of an inch broad, and a most useful size to mark pot plants. A. D.

Orchis Robertiana.—Have any readers a knowledge of this plant? I bought a dozen roots of an Orchid under this name; most of them have grown, and one is now in flower. The character of the plant resembles Orchis foliosa. It is 18 inches high, the

flowers thickly placed on a stout spike. The sepals and petals are greenish dashed with purple, spotted internally with reddish-purple. The labellum is divided at the margin ioto five or six brownish lobes; centre pale purple, marked with a deeper purple. The flowers are an inch and 1½ inch in length. If this species is quite hardy it is a good addition to an interesting class of plants. J. Douglas.

Grape Vine Sport.—It will be in the recollection of many readers of the Gardeners' Chronicle that a very uncommon case of a Vine sporting occurred at Culford, near Eury St. Edmunds. In this case a scion of the Golden Champion Vine had been worked on the Trebbiano, with the result that the sap of the Golden Champion had been commingled in some way with that of the Trebbiano say to cause a growth of the former to be produced below the point of union. Many good Grape growers doubted the correctness of the observation of Mr. Grieve, the gardener at Culford, at the time, and a long discussion took place on it in the Gardeners' Chronicle for 1876, vol. vi., pp. 82, 113, 145, 175, 212, 239, 595. Some of the gentlemen who tnuk part in that discussion may be glad to know that a similar case is to be seen within lour or five miles of London, in the market growing establishment of Mr. Sweet, Wilmot Road, Leyton. In this case the stock is a Black Hamburgh, and on it Mr. Sweet inarched a Gros Colmar. The union of the stock with the scion is plainly visible; and about a foot or more lower down the stem a strong shoot of Gross Colmar has grown out. It showed Gross Colmar bar grown out. It showed Gross Colmar burches last summer, but Mr. Sweet removed them. The wood is still there, and any Grape grower can easily tell that it is Gross Colmar growth, and will be very strong Gross Colmar growth, and will be allowed to produce fruit next season. 7. Douglas.

Resting-spores of Peronospora parasitica, Corda.—In the Gardeners' Chronicle for Nov. 17, 1883, I illustrated the resting-spores of the putrefactive fungus of Cabbages named Peronospora parasitica, and showed that these bodies, found by me in Turnips which had been destroyed by the Peronospora, agreed with the so-called Autotrogus of Montagne, as found in decayed Turnip by Mr. C. E. Broome in 1849, and the oospores of De Bary of 1863. I have lately been able to examine the immature resting-spores of the same fungus now found by the Rev. J. E. Vize in Cabbage stumps at Forden, Welshpool. The Peronospora had been on Mr. Vize's Cabbages for some time, and it is indeed upon them now, but the condidal form is only on the leaves. The resting-spores occur in the decaying stems, whose heads have been removed for kitchen use, and whose stumps are rotting in the ground. The oospores occur amongst the moist interior fibres, and the resting-spores occur in sundance in these yellow patches, yet this yellow oospore-producing state of the disease is exceptional. The oospores are at first smooth, and become chinulate with age, as in the Potato oospores, and in many other fungus-spores, W. G. Smith.

Myosotis dissitiflora alba.—Vou have done good service at p. 215 in bringing this plant before the public as a market plant, as it only requires to be better known to become a favourite with all. Seeds can now be obtained at a cheap rate, and it should become more popular for spring beds and early cut flowers. Being the raiser of this novelty, allow me to say that it does not require any heat whatever; a cold frame or pit, and the plants placed near the glass, with air on day and night, to allow the moisture to pass off, is all that is necessary. It can easily be grown in the same way as Violets, by planting out in the natural soil in a cold frame with plenty of air. I prefer a larger pot, and take up some strong seedlings early in the autumn, and leave them in a sheltered place outside as long as possible. I have grown it extensively for four years past, and it has not been out of bloom summer or winter except during frost. It seeds very freely, and propagates so fast naturally that we are often boeing it up amongst other crops in the garden. W. Dizers, Weirron, March 4.

Solomon's Seal.—What a common plant to write about! some people may say. So it is; but it is the custom now with the gardening papers to write gushingly about the commonest flowers. For instance, Jasminum undiflorum flowered well this season at its usual time, and it furnished a number of paragraphs forthwith; so with the Snowdrops, Daisies, &c., and it is well that we should be reminded of the use and beauty of common flowers. Solomon's Seal is now in flower in our greenhouse. The roots may be litted from the open ground, potted, and be put in heat at once. It is so easily forced, and the tall stems, arched at the top purposely to display the small delicate but pretty flowers, are so fresh and spring-like, they ought to be grown freely in every garden. Single

crowns may be potted in small pots, and great clumps in 15-inch pots have a fine effect. They start best with a little bottom-heat. J. Douglas.

Fuit Trees in South Wilts.—To write thus early regarding our fruit prospects for the current year will doubtless to many seem somewhat premature and to savour more of prophecy than of anything else. The outlook, however, at the present time with all outdoor fruit trees is one of the brightest and most encouraging one could wish for; Apricots are already fast expanding their blossoms and promise soon to present a very picturesque appearance, every shoot and spur being thickly studded with bloom-buds, so much so, in fact, that we have decided on thinning them out with no unsparing hand, by rubbing off the weakest and most backward. Peaches and Nectarines also are fast opening their flowers, and there will be more than sufficient of them to satisfy our wants, even supposing that only half of them "set." Plums are bristling with buds, and promise to be on a par with Apricots; this, of course, was to be expected

after the Champion. My experience for the past four years of this admirable Potato (against which I had previously written through ignorance of the proper time to use it) is, that before March it should not, in almost all cases, he used for general consumption—that is, when the Champion (Scotch) becomes of inferior quality take up the Magnum Bonum. This guides me in the planting on our farm, which commences within the present week. Reading Hero is said to have the good qualities of both combined. Next year I shall he able to speak definitely. IV. J. Murphy, Chonnel.

Tree Protection on Open Walls.—Many gardeners seem to think that trees on open walls require some kind of protecting while in bloom. If the walls have copings, say 12 inches wide, and are not very high, say 10 or 12 feet, and the copings are so arranged as to throw off wet quiekly, my opinion is that fruit trees will require nothing more to set a crop of fruit, previding that the trees have been well managed during the summer. A great deal depends on the summer

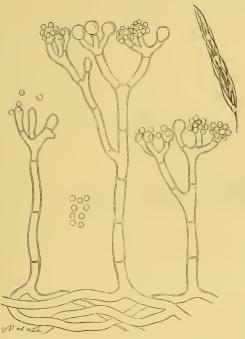


Fig. 61.-ACMOSPORIUM TRICEPHALUM, N. SP.: MAGN.

after the almost total failure of last year's crop. The Apple and Pear blossom will probably be less abundant than last year; still, it cannot be said that the present state of affairs is gloomy. Cherries give every promise of a heavy bloom. Gooseberries, Currants, and Raspberries call for no special comment, except, perhaps, that the first named bave been sistality free from the depredations of birds—more so than for years past, bullfinches seemingly being very scarce, whist that boldest and most voracious of our feathered enemies, the sparrow, seems to have found other food more congecial to his taste. Although we are enabled to speak thus encouragingly of the present, it may be otherwise in two months hence, and there is no gainsaying the fact that a week's frost just now would do an incalculable amount of good. J. Horsefield, Heytetbury.

Magnum Bonum Potato: the Time to Use.—I have heard two experienced agriculturists differ as strenuously about the quality of this Potato as the travellers did in the proverbial story of the colour of the chamcleon. As in that case, "both were right and both were wrong." We are just now removing Magnum Bonum from the pits in the field to come into use

management of the wood and upon whether it has been properly ripened or not. I have been very successful in the cultivation of the Peach and Nectarine on open walls during the last six years, and all the protection given to the trees here is 1-inch wide boards at the top of the walls, which are 14 inches thick, and only about to feet high. The boards were placed in position last October, my object being to keep the walls and the trees as dry as possible during the winter and spring months, as I find it helps to retard the bloom-buds at the present time. Our trees are very little forwarder than they have been at this time in past seasons. I also find when the trees are in flower that the leaf-buds are ready to start into growth, so that the sap is in full play. I find the wall boards throw off moisture very quickly, as the boards are given a coat of black varnish every year and placed in a slanting position. I have often onticed how dry and warm our trees have looked after a storm of hail, snow, or rain. The boards have been in use for ten years, and are in good condition now, so that cheapness is another point in its favour. Beyond the board coping I look upon the use of any front protection as a great evil, and, having been successful without the application of any such things,

I would suggest that others should try and do the same. I give every encouragement for the shoots to get a good start in spring, keep them growing fast and always clean, and lay in only what I am likely to want the following year, so that the wood becomes well ripened, and in that case the trees are in good condition to withstand rough weather during spring. Robert Smith, Kenvaard Gardens, Yalding.

ACMOSPORIUM TRICEPHALUM.

Some forty-five years ago Corda established his genus Acmosporium for the reception of one species, A. botryoideum, Corda, which he found growing on mouldy plants near Prague, and figured in his Icones Fungorum (III., fig. 52). I found a mould in the winter of 1882 on fallen leaves of Cryptomeria japonica, which resembles Corda's plant so much that I venture to regard it as a new species of the same genus, and propose to call it Acmosporium same genus, and propose to cair it Acmosporum tricephalum. As one knows not what part this minute parasite may hereafter play, it is as well to present a portrait of it to your readers, much on the same principle as photographs are sent round to police-stations of "suspects," that a watchful eye may be kept on them for the future. There is no serious accusation against this plant at present; in fact, it presents itself to us as an exceedingly elegant and harmless thing, whose only province would appear to be that of hastening the decay of the fallen leaves of Cryptomeria japonica. It appears as small white oval tufts, about one-eighth of an inch long, on leaves that lie lowest under the mass nearest the damp soil. The tufts are formed of a layer of loosely interwoven, colourless hyphæ, from which arise simple, erect, septate stems, once or twice branched in the upper part, the extremities of each branch again divided into three short branchlets, which are slightly enlarged upwards, and each terminated by a globose head on which are seated several globose spores. Total height of the plant, 25 mm.; width of stem, .o. mm.; diameter of globose head, 014 mm.; diameter of globose spore, .005 mm. William Phillips.

AGRICULTURAL RESEARCH.

CLUB-ROOT DISEASE.—We have just received the third annual report of the Sussex Association for the Improvement of Agriculture, and although there may be many who will differ from the conclusions which have been drawn from these experiments, there will be few who will not accord to Professor Jamieson the merit of immeose perseverance and energy in the way he has conducted them.

Perhaps the part of the report which will most interest the readers of this journal is that which refers to the disease in Cabbage and Turnips commonly known as club-root, sometimes called finger-and-toe disease, anbury, canker, &c.—terms, however, that prohably include other forms of disease as well as clubroot—a disease that affects and often almost ruins Turnip and Swede crops, also Cabbages, Rape, and other members of the Cruciferse family.

Mr. Jamieson states that the Sussex experiments have shown plainly that there are two substances abounding in manures that do indeed injure plants. an injury that was not previously apprehended, and the knowledge of which now obtained may lead to great changes. It need not cause surprise if, in this case, as in the case of the "Battle of the Phosphates," the doctrine may be quietly assumed without recognition. To the work of the Sussex Association it belongs at least to have demonstrated it, and that too at a time when the doctrine of the day, and the custom of the trade, permit and strongly recommend the abundant use of the one poison, and tacitly permit the use of the other. These plant-poisons, as Mr. Jamieson designates them, are sulphur and chlorine, the one given usually as sulphuriand acid and sulphate in dissolved or soluble manures; the others given in chloride (or muriate) of potash, and in common salt. He further advises agriculturists not to use manures containing these elements—sulphur and chlorine except when the soil happens to be unusually black, that being the only condition of soil which he believes may be depended upon to correct the evil; while the only class of crop that does not appear to be hurt is the cereal class. Mr. Jamieson says—"How often do we hear of such remarks as—"My Potato crop is being ruined by disease;?" The Mangels are sicklythey can't come to much; 'Canker has got in among my Turnips—they won't be half a crop; 'What is wrong with the Cabbage?—they don't heart, and the leaves are yellow or blanched.'" All these are stern realities, and Mr. Jamieson is bold enough to assert that he has sufficient proof that sulphur brings on club-root disease and sickliness in Turnips, and that chlorine blanches and renders sickly both Peas and Swedes; also that sulphur almost always abounds, and that chlorine frequently abounds, in most manures sold.

The Professor goes on to state that three years ago the injurious effects of sulphur were unexpectedly demonstrated by experiments in pragress at Aberdeen, and that were too numerously duplicated to admit of explanation by accidental circumstances. Yearly since that time his attention has been specially called to this subject, and that more or less satisfactory evidence of the same evil tendency has been accumulating.

Probably the first clue to definite knowledge of this disease was afforded by the data given by M. Woronin in St. Petersburg,* who satisfied himself that the club-root in Cabbage abounded in, and was caused by, a fungus, which he described and named "Plasmodiophora Brassicæ," and he believed it affected similarly other members of the genus Brassica, which includes the Turnip.

In the report of the Aberdeenshire Agricultural Association for 1850, Mr. W. Jamieson says:—"1 am of opinion that the facts and considerations afford sufficient ground for the belief that a predisposing cause of this clubbed-root disease is the use of manures saturated with sulphuric acid, a feature which characterises the great bulk of phosphatic manures sold; and that what might have ranked merely among the moderate injuries to which all plants are subjected is so aggravated by this predisposing influence as to acquire the serious character which it now bears."

From the report of 1881 the following table is extracted, which gives the ultimate effect, and brings out clearly the excessive number of diseased plants in those three where vitidated manure—or manure containing sulphuric acid—has stimulated or encouraged

the work of the fungus :-

	Dissolved bone ash and sulphate ammonia.	Dissolved bone ash and nitrate soda.	Dissolved bone ash	Bone flour and sul- phate ammonia.	Bone flour with its or-	Dung, bones, dis- solved bones.	Coprolites.	coprolites.
Original plants	600	600	600	600	600	600	600 6	00
1880	592	545	594	1394	179	429	170 1	48
Diseased plants (1881	574	555	583	425	161	158	117	27

Taking these facts into consideration, Mr. Jamieson is of opinion that the following theory suggests itself:

— The sulphur in the manure (in whatever form) accelerates the elaboration of the delectable sulphurous material, in which the dormant spore index abundant sustenance; at the same time, by the readily available form of the mineral food, a flush of premature growth pervades the cultivated plant, and consequent weakness; simultaneously the fungoid enemy, at the expense of the higher plant, increases in myriads, war is waged, in which the assailing foe—the fungus—is never subdued, but may have either a complete victory in the death of the higher plant, or only partial victory, resulting in more or less of a clubbed root, and a more or less normal bulb above.

In August, 1883, in the experiments at Hassocks, in Sussex, a conspicuously unhealthy appearance is said to have been observable in all the Turnips of the superphosphated plot, although it had been stated that the club-root disease was previously unknown in Sussex.

In October the plants were taken up from all the plots, with the following results:—

Manu	Total Diseased and Killed Plants.				
Ground coprolite	- 0				11
Ground bone-ash					16
Superphosphate					51
No phosphate					45
Steamed bone-flor	ır				1 6
Coprolite and stea	med	bone-f	lour		3

^{*} Jahrbucher sur Wissenschasstliche Bolanik. Pringsheim, 1878.

Mr. Jamieson concludes this part of the report as follows:—"The results now before us plainly warn against the use of sulphuric acid in manures, for whatever the true explanation of the evil action, that evil action is evident."

FORESTRY.

TREES AND RAINFALL.—In my last paper on this subject (January 5) I promised to resume it in order to show what the true and real effects of trees upon the moisture and climate of the country are, and how they are produced, but whether I shall succeed or fail in this the reader will best judge. Having in my last, to some extent at least, shown that certain effects are generally attributed to the influence of trees upon climate, &c., which they do not actually possess or exert, I shall now endeavour to show what effects they in reality do produce both upon soil and climate, by way of increasing on the one hand or diminishing on the other the volume of water in springs, streams, rivers, lakes, &c. It is probably both clearly and well known by some, but not so sufficiently as it ought to be, that the ground, or perhaps it had better be said the soil ioside a plantation fence, is in general much drier than it is outside and distant from it. Incontestable proof of this might be adduced were it necessary, but as no one will likely dispute this who has paid ordinary attention to the subject, it may be left in abeyance for the present.

The late Lord Lovat, of Beaufort Castle, Invernessshire (than whom few geotlemen were better able to give an opinion upon such subjects, being a close observer of things in general, but specially such as were in any way connected with the subject of forestry), told the writer that he used on many occasions to creep on all-fours through a large area of Scotch Fir plantation on his estate when deer-stalking, and that even in wet weather the ground was sufficiently dry to enable him to do so without inconvenience or uncomfortably wetting his clothes. The plantation, however, having ultimately attained ma-turity bad to be cut down, and shortly thereafter his lordship having occasion to travel over the same ground, found it impossible to do so for the presence of large pools of water which stood on its surface, sufficient to sail a boat on. This information was given quite gratuitously by his lordship, who knew nothing of the writer's interest in or views of the subject at the time. I knew personally also of two extensive plantations on the Marquis of Lotbian's estates in Roxburghshire, in which, while the wood was growing, the soil was perfectly dry and comfortable to walk upon, but after the wood was cut and cleared the ground became so very wet that extensive draining had to be done before it could be replanted which is a common result experienced by every forester. On the same estate I knew also of two springs of water which from information obtained from old people, proved that they had increased from that of nearly damp surface spots to that of very copious springs, both of which, after the plantations in which they were situated were cut down after attaining maturity, entirely dried up. I could multiply examples of these ad infinitum, but I believe it to be unnecessary to do so, at least at present.

It may appear both strange and unaccountable to many (though true to demonstration) that while the soil inside a plantation is drier than it is outside of it, yet the grass and other herbage upon the surface retains moisture, and remains wet hours after similar herbage is quite dry beyond its boundary. The temperature of the soil of a plantation in winter is also higher than that upon which no trees are growing, but in summer the order is reversed, especially in very hot weather, when it is found that the soil in the plantation is colder than that in the open field. It may perhaps be argued that since snow does not melt so fast in a plantation as it does in the open plain, therefore the soil cannot in reality be so warm; but it must be borne in mind that the melting of snow depends more upon exposure to the wind than upon any other cause. The practical and vital question for consideration however, is this - Do plantations attract rain and moisture more than the open fields and plains do? and do they also retain moisture longer? If, on the one hand, plantations retain moisture more than the open field, it must be inferred, as a natural result, that the soil in the plantation must

be wetter than it is elsewhere; but, as has already been shown, as the soil of a plantation is not wetter, but drier than it is elsewhere, it remains therefore still to be shown wherein and how the moisture exists, which is proved beyond doubt to increase and enlarge our springs, streams, lakes, and rivers. It has already been shown that the soil in a plantation is drier than it is outside of it, also that the herbage in a plantation remains wet hours after it is dry elsewhere; again, that certain springs in plantations grow stronger as the trees grow up and cover the ground, and the same springs dry up altogether when the trees surrounding them are cut down. With these facts before us, strange and conflicting though they appear, it yet further remains to be shown how and in what way the foregoing results are brought about, and in what way they are produced. To these apparently contradictory statements we may add others, such as woods and forests drying soil, and yet tending materially to increase water springs, &c. The cloud of difficulty seems rather to gather than disperse as we look at the saturated ground converted almost into ponds and lakes as the result of cutting down and clearing the woods, while at the same time the ultimate result is the serious diminution of our water supplies in springs, &c.

Having endeavoured to show, though it is feared but very imperfectly, the many-sided aspects and phases of the subject, there yet remains to be pointed out what appears to the writer the most important fact of all—namely, the shade which trees produce, thereby preventing the solar rays from unduly heating the ground in summer weather, and also by the same or corresponding means preventing evaporation, which undoubtedly are the principal, if not the only causes of the drying up of springs and diminishing the volume of water in our streams, lakes, and rivers, which has been the subject of much prolonged discussion and bases of many theories for ages past, and probably also may be for time yet to come. C. Y.

Michie, Cullen, Banffshire.

A NEW GARDEN AT BARODA.

THE Baroda (India) Public Garden is situated between the ancient city of that name and the British camp. It consists of about 100 acres of good alluvial soil, and is traversed by the Vishwantir irver its whole length, by many winding and graceful curves in a most picturesque manner, and its banks being studded with Hindoo temples adds much to the beauty of the scene, and says much for the good and enlightened taste of his Highness the young Gaekwar and his able late Prime Minister, Sir J. Madav Rao, in selecting such an admirable site for a garden. The garden was formally thrown open, and presented by his Highness to his subjects in perpetuity, in January, 1879. The main cutrance is on the city side, and is adorned by massive and handsome cast-iron gates and finely carved stone pillars, each surmounted by an ornamental lamp.

On entering there is a flower garden on either side, which is always kept gay with flowering plants. If your visit be in the monsoon months, splendid Balsams, Zinnias, Cockscombs, Marigolds, &c., meet your gaze in all the brilliant colours of the rainbow; if you gaze had no triman consistence and weather, Nasturtiusas, Phlox Drummondi, Petunias, Stocks, Verbenas, &c.; and if in the very hot weather of summer, Portulaccas, Sunflower, Calilopsis, &c., keep a continual succession of flowers, with an evergreen turf kept so by constant watering. Passing on over a fine stone bridge which crosses a small tributary of the Vishwamtri, you perceive the Gackwar's pavilion, or pleasure-house, which alone is kept for his Highness' private use. On your right and left are extensive undulating lawns with magnificent specimen trees of Tamarindus indica and Mangifera indica; in front of the pavilion is a very large circular flower garden all on turf: it is divided into a very neat plan of eight large diamond beds, twenty-four smaller angular beds, and one large circular bed in the centre, which is intended for a fountain hereafter. Taking the road to your right brings you to a large plant-house in the shape of a cross, each arm 100 feet long by 50 feet wide, with a handsome stone tank, 30 feet in diameter, with rocky scenery for fountains, their sides clothed with Ferns, Caladiums, and other moistureloving plants, with fine jets of water playing from among the rocks in delightfully cool sprays. The other parts of the house is filled with the luxuriant vegetation of more moist climes, such as Palms, Crotons, Dracconas, Anthuriums, Dieffenbachias, Marantas, &c.; it is in such places you see the Eucharis in its full glory, with its dark pea-green foliage and snow-white flowers.

Leaving the plant-house by the opposite door from that which we entered, we pass on to the west through lofty clumps of Bamboo and finely-kept lawns, studded here and there with a nice standard Rose, or a stately Fourcroya, rearing its flower-stem some 20 to 30 feet high. A little further on we come to a small irregular lake with a small island and a pigconcot on it; we have now a straight avenue of Guatteria longifolia, and on either side a rosery, planted mostly with standards of the Noisette and Tea sections, which appear to thrive much better than the hybrid perpetuals. They are also all grown on the Rose Edouard as a stock, which renders them much hardier. At the end of this rosery stands a little ornamental hexagonal summer-house to all appearance, but it is the Superintendent's office, and about 50 yards further west stands a pretty little aviary, the dome of which is surmounted by a spread eagle. About 50 yards further on we come to the end of this avenue; when we turn sharp to our right before us is another avenue, but this time of Poinciana regia, on a slightly raised piece of ground. To the right of this avenue there is a fine band-stand, where music is freely discoursed once a week to all who like to come and hear it; over the bandstand climbs many a handsome creeper, prominent among which is the Bougainvillea glabra, Quis-qualis indica, Dalbergia scandens, &c.; round the bandstand is a portion set apart for pedestrians only, where horses and carriages are excluded : ornamental stone and cast iron seats are plentifully placed for the use of the public under the shade of fine clumps of Bamboos, and the magnificent Teak tree (Tectona grandis). Leaving the bandstand and following the Poinciana avenue for 200 yards we come to the North or Camp Gate, where there is another lawn and fine flower garden, gay at all seasons with flowering plants; on either side are fine shrubberies to divide the three carriage drives that here meet, and then branch out through the garden. We will leave the gate on our left, and follow the drive that leads east through a fine grove of Babool trees (Acacia arabica), which when in flower scent the air for a long way with their sweet aroma. Having traversed about 100 yards, having on our left a tropical jungle which has been assisted by art to shut out the camp from view, we come to the River Vishwamtri : the carriage drive now follows its natural winding, and curves for nearly two miles through shrubheries of tropical luxuriance, past artificial mounds with winding paths to their tops, where fine views of the garden and surrounding country are obtained, the sides of which are planted with succulent plants and large stones for rocks. In a hollow of the bank is a fine clump of Arundo donax, with the variegated form in the foreground; to the right between us and the bandstand are three bowers, each 75 feet long, covered with twelve different varieties of creepers each, affording a cool and grateful shade from the mid-day sun. Passing on through groves of Cocoa-nut and Orange trees, we come out on a pretty little marble summer-house such as only Orientals indulge in, of beautiful and chaste carved workmanship. Still following the river we come to a large iron bridge which spans it, 200 feet long, with very handsome stone cupolas at each end. This bridge connects the garden proper with the zoological part, which is still in its infancy. At the east end of this portion stands a pretty little cottage covered with creepers, at one end of which is the Antigonon leptopus, covering over 1000 square feet of the roof. To the south of the Superintendent's house are the quarters for all the under-gardeners, of whom there are about forty, the rest of the labour required being supplied daily by about a hundred prison "hands," and who look the most contented of labourers.

We will now return over the bridge and resume our walk along the river bank. On our right is a maze, with dense hedges of Juga duleis, from which you hear the hum of voices as the people in their holiday attire try to thread its intricate paths. Past this we come to three fine lawn tennis courts, where morning and evening, parties enjoy themselves. Divided by a shrubbery of Neriums from the lawn tennis courts is the general nursery, which has been a scene of activity for the last four years. When we remember that most of all the plants in this large garden have been raised from seeds and planted out into their permanent sites, we can fancy there has

been work, but the climate has assisted also; every thing grows with tropical luxuriance and rapidity.

As we pass round the nursery we observe a large square tank elevated some 25 feet above ground level, and naturally ask, What is this? Without this there could be no garden. Through this and a lower masonry tank passes the water for the whole garden. engines and two pumps work twelve hours every day all through the dry weather (that is, for eight months of the year), each throwing over 6000 gallons per hour. The tanks are connected with the underground system of piping, which supplies the whole garden, and there is no part more than 300 feet from a The water is distributed over the ground standpipe. by means of canvas hose from these standpipes. greater portion of all this has been done under the present Superintendent's directions. Some four years ago a few carriage drives and a few footpaths were all that could be seen of this now splendid garden, present incumbent, J. M. Henry, is one of our northern gardeners who, after being through many of our good gardens at home, was sent out as a young man Kew to the Madras Agri-Horticultural Society. After serving his contract time with the above Society he travelled a great part of India, and finally settled down under the enlightened and good government of one of India's most promising young rulers. Hortus.

VEGETABLE PRODUCTS OF SMYRNA.

In a very elaborate report on the trade and commerce of Smyrna for the years 1877 to 1881 the British Consul has given some very interesting details on the products of the country. The following abstracts under their respective heads will, no doubt, prove acceptable to our readers. Thus we are informed that dried fruits are the most important of the many exports of Smyrna, employing a vast amount of labour, and giving an adequate return for the outlay of capital. Foremost among them are

RAISINS.—Those growing in the district of Smyrna are of four descriptions — black, red, Sultanas, and Currants. The black, which are exported chiefly to France, are used exclusively for wine making, and for the distilling of spirit. The red and Sultanas are for the table, and fetch a much higher price than the black. Currants are shipped in insignificant quantities, but are necessarily included in the general export.

The exportation of this fruit has increased greatly during the last few years. The ordinary crop some years since did not exceed 25,000 tons, but the cultivation having been extended to meet the demand the export in 1877 and 1878 advanced to 28,500 tons each year, and for the three following years it averaged 48,600 tons, and in value nearly £1,000,000 sterli The production of black Raisins especially has been largely developed since 1877. In that year France consumed little more than 7000 tons of this species of fruit; in 1879 her consumption rose to nearly 20,000 tons, and it advanced in 1880 and 1881 to an average of 25,500 tons. As the demand from France-in consequence of the ravages of the Phylloxera in her own vineyards, and a succession of bad vintages-still continues, and appears likely to increase year by year, the cultivation of the Vine in the district of Smyrna is extending, even in a ratio disproportionate, it may be, to the future demand, and there is some danger lest the supply should overrun the demand, and the profits go to the consumers rather than to the producers.

Smyrna Raisins are of four qualities. The hest are grown on the peninsula of Carabournon, at the entrance to the Gulf of Smyrna; the second quality at Vourlah, within the Gulf, and at Phokes, just outside it; the third at Chesmé, on the coast, opposite Scio; the fourth, called Verli, in the neighbourhood of Smyrna, and inland. Between the value of the first and last qualities there is a difference of from 50 to 60 per cent. Currants are grown only at Phokes.

VALONEA.—This well known tanning material is composed of the acorn cups of Quercus Ægilops, and the quantily exported is said to have fluctuated much of late years. The crop begins to reach Smyrna at the end of September, and continues to arrive until the August following. Each year's export, therefore, comprises the crop of the preceding year. It is necessary to dry the cups for some months before shipment in order to avoid fermentation, which would greatly

diminish the value. Shipment is made from December to August. England takes at least two-thirds of the entire export, and chiefly of the middling qualities, while Austria will have none but the finest, and Italy is content with the refuse, Venice, however, demands the best. The Valonea Oak grows wild all along the west coast of Asia Minor from the Dardandles to Adalia, and for about 200 miles inland. There are three different growths—first, that of Nazli, Davas, and Ghiunda; second, that of Aidia, Demirjik, Borlo, Budrum, and the Dardanelles; and third, that of Ushak. The quality of the Valonea depends on its being thick and heavy and of a light ash colour.

MADDER ROOTS (RUBIA TINCTORUM).—Madder, or Alizari, was some years since one of the principal exports of Smyrna, the yearly shipment reaching 65,000 to 70,000 quintals; but it has now fallen almost entirely out of demand, being superseded by cochineal. The average annual export of five years was only 1678 bales of about 800 lb. each. The root used to be largely cultivated in Asia Minor for its red dye—the garance of the French; but the cultivation has almost ceased, and the root is now dug up merely to make room for some more profitable crop, and is sold to cover the expense of its extraction. The average price of Smyrna during the five years has been 13s. 6d. to 14t. per cwt. free on board, Germany, England, and the United States being the customers.

OPIUM (PAPAVER SOMNIFERUM) .- The export of this, the most costly product of Smyrna, has varied considerably during the five years in question, for the crop depends entirely upon the season. The export of 1881 was the largest ever known in one year. Opium is grown in the valleys and plains of the interior, and also in the highlands, throughout a wide extent of country, from Kutaya and Balukhissar in the north to Islarta and Koniah in the south, quality varies in different localities, and depends on the quantity of morphice it contains. Thus the best that is grown at Balukhissar and Ushak, for it contains II to II per cent, of that principle; that from Akhissar and Kirkagatch contains from 8 to 10 per cent.; that from Asium Karahissar from 71 to 9 per ceat.; that from Kouiah only from 7 to 8 per cent. The best customer for the opium of Smyrna is England, though but a small quantity is consumed at home, the greater portion being reshipped to the United States, Cuba, and British Guiana; indeed, the larger part of the export to America goes by way of Liverpool. A considerable quantity is also shipped, vid Egypt, for China, Hong Kong, Singapore, and The average value of the opium exported from Smyrna during the five years in question was £517,300

POPPY SEED. — Notwithstanding the abundant opium crop of 1881, the export of Poppy seed has experienced no development, but has fallen off since 1877, when it reached 4220 tons, to 1493 tons in 1879, to 836 tons in 1880, and to 283 tons in 1881. This is owing both to the extension of the cultivation and to an increased home consumption of the seed, the oil of which is largely consumed by the Turkish peasantry of Asia Minor. This oil is used in Europe to grease machinery, for which it is well adapted, as it does not readily congeal, and in the manufacture of soap. The seed is exported chiefly to France, Germany, Holland, and Italy; none to England or the United States.

TOBACCO AND TUMBERI .- Though the cultivation of Tobacco has greatly extended of late years in the district of Smyrna, its exportation has not affected to any material extent, as the foreign demand is limited. The greater portion of the crop exported is sent to Egypt and other parts of the Ottoman The principal foreign consumers are the Empire. Russians, after whom come the Germans. England takes but a trifling portion of the export. Anatolian Tobacco is of three qualities; the best grown at Lighda, in the district of Eudemish, and at Ayaslouk, near Ephesus, both in the valley of the Cayster; the second comes from Baindyr and Thyra, in the same valley; from Pergamos, in the Caicus valley; and from Denizli, in the Meander valley; the third from Magnesia, Cassaba, and other spots in the plain of the Hermus, although Magnesia also grows some of the finest quality. The export was very large in 1880, and it was valued at £310,400; but in the following year it fell off enormously, not reaching one-tenth of

that sum in value. This decline was in part nwing to the drought and locusts in that year, but also in great measure to the fact that the Russians, having begun to grow Tobacco in Circassia and in the Crimea, have raised the duties on foreign growths, and thus take a much smaller supply from Smyrna. The entire crop from Eudemish and Ayaslouk has hitherto gone to the Russian market. Tumbeki is a description of Tobacco grown in Persia, and imported both through Trebizond and vid Bushire, on the Persian Gulf. A large quantity is consumed in the district of Smyrna, but much is also re-exported to Egypt and other parts of Turkey. It is much stronger than ordinary Tob and cannot be smoked in the usual way, therefore it is used exclusively for the narghileh.

OLIVE OIL (OLEA EUROPÆA) .- The oil of Smyroa is rudely pressed and carelessly prepared, so that it is not suited for the table, but only for ordinary purposes, yet it finds a ready market in the North of England, however, is the largest consumer, followed by France, Germany, Holland, Italy, Austria, and Russia. It is exported in barrels, which contain on an average 5 cwt. or 63 imperial gallons. on an average 5 cwt. or 03 imperior 5... The export varies greatly according to the crop. In 1879 it reached 6550 tons, valued at £261,440. following year it fell to 310 tons, worth £11,184, but rose again in 1881 to 4200 tons, and in value, £135,336. Olive oil is of three qualities. The first comes from Airah and Adramyti, the second from Mitylene, which is inferior only on account of its greenish hue; the third quality from Aidin and Baindye. All three qualities are produced in the neighbourhood of Smyrna.

LIQUORICE ROOTS (GLYCYRRHIZA GLABRA). This export, which is a natural product, and not the result of cultivation, is largely increasing year by year. The plant grows wild throughout vast districts of the interior, and the only cost is the labour of digging it up, drying and packing it, and transport to the coast for shipment. The entire export, with the exception of a small quantity sent to France, and an insignifi-cant one to England, goes to the United States in the state of roots, where it is boiled down and converted into paste, the Liquorice of commerce. The roots are packed in hales by hydraulic pressure. recently the bales were of different sizes; now they are generally uniform in size, containing 10 or 11 cubic feet, or about a quarter of a ton by measurement, and weighing 280 lb. to 340 lb. This export advanced from 44,700 bales, valued at £53,608, in 1877, to 63,000 bales, worth £127,600, in 1881. The demand for the root in the United States was very heavy in 1880 and 1881.

LIQUORICE PASTE, - The principal exporters of Liquorice roots, Messrs. McAndrews & Forbes, have a large factory in New York, to which they send the roots they collect in Asia Minor to be converted into paste. In America the paste is used for preparing tobacco; the leaves are soaked in the melted paste to give them the flavour which chewers of that weed most relish. The paste is also used in the United States as a remedy for scorbutic affections. In England it serves to flavour porter. In France it is used to make syrups and drinks for the sick. The juice expressed from the root is also used in France to flavour wine. Previous to 1873 some 30,000 or 40,000 cases of paste were shipped annually from Smyrna to the United States, where a very small duty was imposed on it, but in that year the American Government put a duty of 10 cents per pound on it, while admitting the root free. The consequence is that no paste is now sent direct to the States, but the greater part goes to British America, where it either serves for local consumption, or is smuggled into the States. Though the export of the paste bas fallen off greatly of late years a considerable quantity is still manufactured in the Meander and Hermus valleys. The roots when dug up are left to dry throughout the summer, by which process they lose some 60 per cent. of their weight, and are then ground to powder and boiled with water, and the liquor being poured into boxes to cool, becomes liquorice paste. It is in a mass, not in sticks, for it cannot be made to keep that form without sor traneous ingredient, although the superior and more valuable liquorice of Sicily and Calabria can be made into sticks, and is so exported into England. The Turkish liquorice is not so sweet as that of Spain or Sicily, but generally keeps better, and requires more sugar, which is the only ingredient mixed with the paste. Liquorice paste is shipped in cases weighing about 2 cwt. and worth from £3 to £4 each.

(To be continued.)

Variorum.

KOKUM BUTTER .- The following interesting note on Garcinia indica is contained in Dr. Dymock's recently published Vegetable Materia Medica of Western India. It is of value because it corrects a statement often made in books, that it is used to adulterate "ghee," or liquid butter. states that the tree is common on the Western Coast between Damaun and Goa. It grows wild upon the hills of the Concans, but is often seen in gardens close to the sea. It is in flower about Christmas, and ripens its fruit in April and May. The fruit is largely used all along the Western Coast as an acid ingredient in curries, and in a dry state as an article of commerce. The usual mode of preparing it is to remove the seeds and dry the pulp in the sun; it is then slightly salted, and is ready for market. In Goa the pulp is sometimes separated from the skin and made into large globular or elongated masses. oil is extracted from the seeds by pounding and boiling them; it becomes solid on cooking, and is moulded by hand into the well-known egg-shaped balls, or concavo-convex cakes, known as Kokum "The natives occasionally use it for cookbutter. ing, but the statement that it is largely used in Goa to adulterate ghee (liquid butter) is incorrect. first place no ghee is made in Goa; the bulk of the inhabitants, who are Christians, obtain their ghee (lard) from the pigs which abound in that territory, and the Hindoos import theirs from Bombay. few cattle are kept in Goa that it is difficult to obtain milk, and still more so butter."

TAMARINDS: TAMARINDUS INDICA .- There are but few people to whom the flavour of preserved Tamarinds is not agreeable, but do those who frequently use Tamarinds know how they are prepared? They come into commerce both from the East and West Indies; the latter, it would seem, are simply the fruits, or, rather, pods from which the shell or epicarp has been removed, and the pulp, together with the strong fibrous framework upon which it is built, and the seeds are placed in alternate layers with powdered sugar in a cask or jar, over which hoiling syrup is afterwards poured. In the East Indies it seems they are prepared by first removing the epicarp and seeds by hand, after which the pulpy portion is usually mixed with about 10 per cent. of salt, and trodden into a mass with the naked feet. Of these Tamarinds several qualities are known in the market, the best being free of fibre and husk, and the worst containing both, together with the hard stonelike seeds, which are commonly eaten in the East Indies after being roasted and soaked to remove the outer skin, and then boiled or fried, when they are said to be tolerably palatable. West Indian Tamarinds are alone officinal in the British Pharmacopaia; while on the Continent those from the East Indies are alone employed. Besides the Tamarinds sent to Europe, they are also shipped in large quantities from Bombay to Persia and other northern countries.

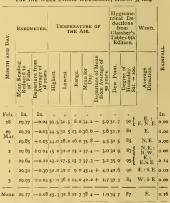
TONQUIN OR TONGA BEAN. - Mr. Prestoe, in his report on the Trinidad Botanic Gardens has some interesting notes on what he supposes to he a new species or form of Tonquin Bean from Venezuela. He says the high price ruling for Tonquin or Tonga Beans in a prepared state has attracted much attention to it as a tree of some promise under cultivation, and in consequence inquiries have been made for supplies of plants. The roots of the large trees in the garden are said to be seriously affected at the roots by fungoid growths, all attempts to suppress which have hitherto proved only partially effective. On the subject of this Venezuelan plant, or "Sarapia," as it is called, Mr. Prestoe says: — "It has long been known that there existed in Venezuela a much larger variety of Tonga Bean than that produced on the garden trees, and differing considerably from that described as Dipteryx odorata, inhabiting the British and Dutch Guianas; and, steps being taken to obtain supplies of fresh seeds, several lots have been received in the form of entire fruits, which are uniformly of this larger and very superior variety. The fruit is usually twice as large again as the Demerara Tonga Bean and that figured by Aublet. The habit of the tree bearing this superior Bean resembles that of the Mango, having much less the character of a forest tree than that bearing the smaller leaves. The pre-sent high commercial value of the Sarapia," Mr

Prestoe says, "arises from a widespread and ever increasing appreciation of its use in Europe and America as a flavouring material in articles of im-mense consumption, such as tobacco, cigars, cacao, confectionery, &c., but more particularly the former; so that its consumption will rather increase than This paragraph, though it mentions the Sarapia, we presume alludes to the Tonquin Bean of commerce (D. odorata). It is suggested that as a plantation of these trees would partake more of the character of a forest than a plantation, such, for instance, as Cocoa, the only cultural requirement would be such clearing as to render easy the collecting of the fruits as they fall to the ground.

GUM SARCOCOLLA.-A new light on the source of Gum Sarcocolla, which is also known in Bombay as "Gujar," and in Arabia and Persia as "Auzeroot," is given by Dr. Dymock in his Vege-table Materia Medica of Western India. For a long time this substance has been doubtfully referred to a species of Penæa, belonging to the natural order Penæaceæ, but it has always been felt to have a very shaky position there, inasmuch as the species are all African. Dioscorides describes Sarcocolla as the tear of a Persian tree, that the gum resembles powdered frankincense, with a bitterish taste and a reddish colour. It is seldom seen in Europe at the present time, though it is still largely used in the East as a drug. "It is also used internally as an antirheumatic and anthelmintic, and the Egyptian women eat it on account of its fat-tening properties." It is imported into Bombay from the Persian port of Bushire in bags containing about 2 cwt. Dr. Dymock says the total quantity imported must be considerable, as from twelve to twenty bags may often he seen in a single warehouse. From pods and other portions of the plant taken from bales of the gum, he is strongly of opioion that its source will prove to be one of the desert Leguminosee, not far removed from Astragalus. From the entire absence of leaves in the bales it would seem "that the Sarcocolla is collected by heating the bushes after the leaves have fallen."

The Meather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON FOR THE WEEK ENDING WEDNESDAY, MARCH 5, 1884



Feb. 28.—Cold day and night, overcast generally. Slight fall of snow in alternoon.

— 29 —Fine day and night.

March i. —Fine bright day, overcast at night.

— 3.—Fine cold morains, slight rain falling nearly all day in the cold morains, slight rain falling nearly all day to be place at midnight.

— 4.—Very slight rain from early morning till 1.30 p.m.

— Fine bright morning, overcast afternoon. Fine charming.

LONDON: Atmospheric Pressure,-During the week

the level of the sea increased from 29.48 inches at the beginning of the week to 29.95 inches by 9 A.M. the beginning of the week to 29,95 inches by 9 A.M. on the 26th, decreased to 29,94 inches by 3 P.M. on the same day, increased to 30.04 inches by 9 A.M. on the 28th, increased to 30.05 inches by 9 P.M. on the 28th, increased to 30.05 inches by 9 P.M. on the 28th, increased to 30.05 inches by 9 P.M. on March I, and was 30.04 inches by the end of the week. The mean reading of the barometer for the week at the level of the sea was 29.93 inches, being 0.17 inch higher than last week, and 0.06 inch above the average

higher than 1887 of the week. Temperature, — The highest temperature in the shade in the week was 47°.5, on February 24; the highest reached on February 28 was 39°.5. The mean of the seven high day temperatures was 44°.7. The lowest temperature was 28°, on March 1; on the seven 24 the lowest temperature was 39°. The

February 24 the lowest temperature was 39°. The mean of the seven low night temperatures was 32°.6. The greatest range of temperature in one day was 16°, on March 1; the smallest was 8°, on the 28th. The mean of the seven daily ranges was 12°.1.

The mean of the seven daily ranges was 12.1.

The mean temperatures were—on February 24, 43°; on the 25th, 39°.9; on the 26th, 39°.7; on the 27th, 37°.5; on the 28th, 34°.2; on the 29th, 36°.6; and on March 1, 35°.8; of these the first two were above their averages by 3°.7; and o°.4; respectively, and the rest were below by 2°.4, 5°.9, 3°.6, and 4°.5 respectively; the 26th was the same as its

The mean temperature was 38.1, being 5.1 lower than last week, and 1.8 below the average of the week.

The highest reading of a thermometer with blackened bulb in vacuo placed in the full rays of the sun was 94°.5, on March 1. The mean of the seven

readings was 75°.7.

The lowest reading of a thermometer with its bulb placed on grass was 20°.5, on March 1. The mean of the seven readings was 24°.1.

Rain fell on the 25th to the amount of 0.03 inch. Hail fell on the 25th. Fog prevailed on the 26th and 27th. Snow fell on the 28th.

ENGLAND : Temperature .- During the week ending March r the highest temperatures were at Plymouth, 53°, 5, at Truro 52°, at Cambridge and Sunderland 50°; the highest at Bradlord was 45°.6, and at Bolton and The general mean was 48°.6. Preston 46°.

The mean of the seven low night temperatures was highest at Truro, 49°. 5, at Plymouth 45°. at No. 12°. at Plymouth 35°. 6, and at Brighton 31°. 3. The general mean was 20°. The greatest ranges were 24°. 5 at Sheffield, 24° at Cambridge, 23° at Wolverhampton, 26°. The greatest ranges were 24°. 5 at Sheffield, 24° at Cambridge, 23° at Wolverhampton; the smallest ranges were 12° at Truro, 16°. 1 at Liverpool, and 17° at Preston. The general mean was 19°. 6.

The mean of the seven high day temperatures was highest at Truro, 49°. 5, at Plymouth 45°. 2, at Nottingham 45°. 4, and was lowest at Bolton, 41°. 2, at Liverpool 41°. 9, and at Bradford 42°. 1. The general mean was 44°. 3.

The mean of the seven low night temperatures was highest at Truro, 42°. 7, at Plymouth 39°. 2, at

The mean of the seven low night temperatures was highest at Truro, 42°,7, at Plymouth 39°,2, at Bristol 35°,8; and was lowest at Hull 30°,4, at Wolverhampton, 30°,6, and at Cambridge 31°,3. The general mean was 34°,1.

The mean daily range of temperature was greatest at Cambridge, 14°, at Wolverbampton 13°,3, at Nottingham 13°,1; and was least at Truro, 6°,8, at Liverpool 7°,6, and at Sunderland 8°. The general mean was 10°,2.

The mean temperature was bighest at Truro, 45°.6,

The nean temperature was bighest at Truro, 45°.6, at Plymouth 43°.1, at Brighton 39°.5; and was lowest at Bolton and Hull, 36°.2, and at Wolverhampton 36°.6. The general mean was 38°.6.

Rain.—The llargest fall, was 1.34 inch, at Truro, 0.86 inch at Plymouth, 0.47 inch at Preston; the smallest fall was 0.03 inch at Blackheath. No rain fell at Brighton or Wolverhampton. The general mean fall was 0.29 inch.

SCOTLAND: Temperature.—During the week ending March 1, the highest temperature was 48°, at Edinburgh; at Paisley the highest was 44°. The general mean was 46°.1.

general mean was 46°.1.

The lowest temperature in the week was 23°, at Perth; at Aberdeen the lowest temperature was 30°.4.

The general mean was 27°.

The mean temperature was highest at Edinburgh and Aberdeen, 37°.7; and lowest at Perth, 35°.9.

The general mean was 36°.9.

Rain. — The largest Iall was 0.85 inch, at Edinburgh. The general mean fall was 0.06 inch, at Edinburgh. The general mean fall was 0.36 inch. JAMES GLAISHER, F.R.S.

Obituary.

DR. GEORGE ENGELMANN,-We greatly regret to have to announce the death, on February 4, of Dr. George Engelmann, who for many years had resided at St. Louis, Missouri, taking a leading part in all matters relating to his profession, to science generally, and botany in particular. Dr. Engelmann was born at Frankfurt-on-the-Maine in 1810, graduated in that city, but soon took up his residence in the United States. It thus happened that he was of necessity almost as well known to British botanists as his associates and fellow labourers, Torrey and Gray, ant those of a younger generation. Engelmann, indeed, has helped forward in divers ways the botany of his adopted land. On the Conifers, the Oaks, the Agaves, the Cactuses, the Vines, the Cuscutas, and sundry other groups he had come to be looked up to as the leading authority. He was a hard worker, and his time and his knowledge were always at the service of his friends and colleagues. To these pages be was a frequent contributor, and a referee in whose authority on certain subjects we were in the habit, like others, of placing implicit confidence, the more so as he was entirely free from dogmatism and ready at once to admit an error or oversight.

His reputation, of course, extended beyond the Eoglish speaking countries, for he had become the leading authority on Conifers and other subjects. So completely had he identified himself with systematic hotany that his earlier morphological work has been forgotten by most people. Nevertheless, it was in his academic essay on plant monstrosities, De Antholysi Prodromus, that the indications of that "calmness and clearness of perception and judgment" that characterised him were first made evident. The work in question preceded by a dozen years or more that of Moquin-Tandon, and though written in rugged Latin, which contrasts unfavourably with the elegant French of Moquin, is remarkable for its clearness of statemeet and simplicity of method. At that time the theory of the metamorphosis of plants enunciated by Goëthe, and which, from a purely morphological point of view, is unaffected by the more modern conceptions of evolution, was making but slow headway. Engelmann's treatise must have been grateto Goëthe, as it furnished numerous confirmations of his views, and elicited from the great philosopher, in February, 1833, that remark as to Engelmann's mental powers which we have placed in inverted commas. At this period Engelmann was the friend and fellow labourer with A. and Schimper, the leaders of morphological botany in Germany. Later nn, as we have seen, Engelmann made his morphological knowledge subservient to his work as a descriptive botanist and systematist; but though subservient, there are frequently traces of it to be met with, which, with the fuller indications given in his private letters, show that to the last he not only retained his interest in morphology, but kept himself informed as to the latest stages of its development.

Engelmano's communications to our own columns related principally to Conifers and Agaves, and it will be within the remembrance of some of our readers how the enthusiastic botanist, at a time of life when most people would have preferred to remain at home, or not wandered away from the comforts of town life, accompanied Professor Sargent, Dr. Parry, and Mr. Skinner in a visit to those forests whence fifty years previously Douglas had sent so many fine Conifers and other plants. Much remained to be cleared up about these plants; their nomenclature and synonymy was a matter of constant discussion, and with constantly varying results. On this expedition Engelmann was enabled to gather many of the plants in the very localities indicated by Douglas, and, more, he was enabled to study their distribution and their modifications as they diverged in one direction or another, or occupied different stations from the coast to the slopes of the mountains. The whole account of this journey is eminently worth reading by persons interested in the trees and shrubs of California and Oregon, and of special interest was the discovery that Cupressus Lawsoniana was the source of a large proportion of the timber used in Oregon under the name of the Port Orford Cedar. Lawson's Cyprus (150 feet high), Douglas Fir, Abies amabilis, grandis, nobilis, Tsuga Pattoniana, Chamæcyparis nutkaensis, Thuia gigantea, and other interesting trees were met with, and their peculiarities noted on the spot. A brief narrative of this memorable expedition, from the pen of one who took part in it, and portraits of three of its members, including Engelmano, was given in our number for July 2, 1881.

Dr. Engelmann occasionally visited this country, when his aid was eagerly sought in settling questions of nomenclature-as may be seen from the numerous notes and memoranda with which he has enriched the national herbaria at Kew. Last summer we were looking forward to another visit from him, but while in Germany, at Kreuznach, he became so feeble and ill that it was feared that he would not live to return to America. On improving somewhat he gave up the inten-

tion of visiting this country, and returned to St. Louis. Here he soon resumed his usual avocations, professional and otherwise. He took cold during the month of January (which, as be himself recorded in our columns only a few weeks since, was very severe), but paid little heed to it, or to the warning of his friends, being, in fact, to all appearance much less ill than in the preceding summer. On February 2-the anniversary of his seventy-fifth birthday-he was persuaded to keep his room, working all the while, partly on meteorological matters, with which he was in correspondence with us at the time, but on the 4th inst. he succumbed to the effect of cold on the lungs. Thus closed the career of an able physician, an acute botanist, an indefatigable labourer in the field of science, and a simple-minded, warmhearted, sympathetic friend.

Enquiries.

"He that questioneth much shall learn much."-BACON.

LABEL.—A correspondent asks what has become of the plant-label that was awarded the 1st prize in the Society of Arts competition two years ago? He thinks a label that was thought good enough to receive a silver medal should have been worth bringing out before now.

Answers to Correspondents.

ACACIA: P. M. It is not exactly known what species of Acacia—or, indeed, if it was an Acacia at all—that is alluded to (not used) by the people you mention. Three species of Acacia are common in Bible lands—A. Seyal, A. nilotica, and A. arabica; and the former, as well as probably the two latter, is believed to be the tree mentioned in the Scriptures (Exodus xxv.) as the Shittah-tree, or Shittim-wood. For an illustration of Acacia Seyal see our number for June 6, 1874, p. 729.

Anthurium Scherzerianum: IV, P. & Sons. C tainly not. It has nothing to do with Orchidaceæ,

CINERARIAS: R. P. Your double Cinerarias are very fine indeed. We should add, however, that there are others of the same colour.—W. W. The flowers are large enough, in all conscience, but very rough.

FURZE: Enquirer. Old Furze may be cut down to the ground-level any time during the months of March and April, and if not of very great age will spring up again during the early summer months.

GINGER BEER PLANT: C. S. We have no knowledge of any plant bearing this name, and from which a good wholesome beverage can be made.

good wholesome beverage can be made.

MUSHROOMS: P., Bristol. The Mushrooms are very curious, and in their present state, although eatable, not excellent. The woolly ting round the stem is very large, and the flesh is thin, dry, and rather tough. The mycelia of two or three different fungl can be seen on the Mushrooms with a microscope, together with an enormous number of Diplodia spores, probably blown on from neighbouring dead twigs or leaves. These mycelia have probably caused the abnormal growth. Under a lens the tops are sprinkled all over with very fine black dots. The curious point is, that under the microscope these black dots resolve themselves into groups of haccidia-bearing Mushroom spores. It is very uncommon to see the spores growing outside serves into groups or faccional-nearing winds from spores. It is very uncommon to see the spores growing outside a Mushroom, and we do not remember having seen then before growing in little clusters all over the pileus, as in your examples. W. G. S.

NAMES OF FRUITS: W. M. B. 1, Baldwin; 2, Warner's King; 3, Royal Somerset.

NAMES OF FRUITS: W.M.B. 1, Baldwin; 2, Warner's King; 3, Royal Somerset.

NAMES OF PLANTS: F. T. Urecolina aurea, T.S. C.
Eurya latuloila variegata. — T. E., Serview. The
Cattleya is a nice form of C. Trianæ. The Oneidium
is O. sculptum; and the Dendrobium only an ordinary
form of D. nobile.— A. T. 1, Davallia solida; 2,
Cytromium falcatum; 3, Goniophebium appendiculatum; 4, Asplenium obtusatum; 5, Polypodium vulgare cambricum; 5, Niphobolus Lingua.— W. Williams. The Thuiopsis is rightly named dolabrata,
but we cannot name the specimen of Pinus, which
so to sufficient. It does not appear to be P. excelsa, of
which you will find an illustration in vol. xix, p. 249.
— P. M. C. Probably Cedrus atlantica, but in poor
condition.— W. Priest. Spiranthes picta.— C. G. M.
Angraceum eburneum.— C. H. P. 1, Veltheimia capensis; 2, Glidia carinata; 3, Osmunda regalis.—
A. B. Kerria japonica.— P. We think it is the
Corsican Pine, Pinus Laricio, but we cannot be certain
without seeing a good specimen.— An Old Subscriber,
1, the Dog's-tooth Volck, Erythronium Dens-canis;
2, Milla bildora, 3, next week; 4, Cryptomeria
next week.

ORCHIDS: Ireland & Thomson. The Cattleya Trianæ

ORCHIDS: Ireland & Thomson. The Cattleya Trianæ is a very good variety; as good as many that have been named. The colour in the lip is very rich. The Odontoglossum triumphans is also a very good form, very bright in colour, and of good size.

PRIMROSE: C. S. The appearance is due to the union, in a very early stage of growth, of four flowers. Thus, we find twenty sepals instead of five, and so on

PROF. REICHENBACH: J. IV. No; but if he is a stranger to you we should advise you to adopt the usual custom observed among gentlemen of getting an introduction, and asking his permission, before you trespass on his time.

SAND: T. G. B. We can see nothing the matter with it, except that it is rather dirty, and think there must be something wrong in your management to account for the Begonias going off.

STRUE: E. L. S. This is a market name for thin, weakly grown Asparagus, generally early forced produce, used for making soup. The prefix "French" indicates that it was imported from France. A dictionary of gardening slang would be more useful than Webster!

WILD STRAWBERRIES: Mons, Blicq. The wild Straw-berries your friend saw growing on trees in Guernsey were in all probability the fruits of the Strawberry tree (Arbutus Unedo), but certainly not of any species of Fragaria.

CATALOGUES RECEIVED.

W. TOOGOOD, 58, Above Bar, Southampton - Farm

Seeds,
F. & A. Dickson & Sons, 106, Eastgate Street, Chester
—Select Farm Seeds.
LITTLE & BALLAMTYNE, Carlisle—Farm Seeds.
R. B. LAIRD & Sons, 17, Frederick Street, Edinburgh
—Florist's Flowers, Stove and Greenhouse Plants.
JAMES HUNTER, Chester—Agricultural Seeds.
VILMORIN-ANDRIEUX & Co., Paris—Seeds of Hardy
and Exotic Trees and Plants.
W. HEAN CHUCK & CO. Barnstable. Clower, Geogree.

W. HEAN QUICK & Co., Barnstaple—Clovers, Grasses, and other Farm Seeds.
CHARLES SHARPE & Co., Sleaford—Farm Seed List.

COMMUNICATIONS RECEIVED.—W. B. (next week.)—P. G.— J. Webster.—F. & A. D.—W. M. B.—S. B.—T. J. Hart.— E. J.—A. W.—J. S.—T. B.—R. H.—J. M.—A. D. W.— C. B. F.—G. W. H.—Taffy.—H. F.—R. H.—T. M.—W. H.— G. E.—D. T. F.—W. T. T. D.—C. W. D.—Martal Wilder.—W. & N.—Sereno Watson.—G. N.—H. J. E.— R. & S.—J. S. B.—J. B. R.—T. B. B.

Markets.

COVENT GARDEN, March 6.

[THE subjoined reports are furnished to us regularly every Its subjoined reports are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list weekly, and are responsible for the quotations. It must be remembered that these quotations are averages for the week preceding the date of our report. The prices fluctuate, not only from day to day, but often several times in one day, and therefore the prices quoted as averages for the past week must not be taken as indicating the price at any particular date, still less can they be taken as enulies to the origin of the coming week, Ep. 1 as guides to the price in the coming week. ED.]

Business very quiet. Large quantities of common Apples on the market, making low prices. Samples of good Grapes are now few, and will begin to fetch their best values. James Webber, Wholesale Apple Market.

FRUIT .- AVERAGE WHOLESALE PRICES. s. d. s. d. s. d. Apples, 1/2-sieve .. 1 0- 50 Pears, French, doz. 1 6- 0 0

Grapes, per 10 5 0- 10 1	Pine-apples, Eng., lb. 1 6-2 -St. Michael's, each 2 0-8 Strawberries, per oz. 1 6
VEGETABLESAVE	RAGE RETAIL PRICES.
Artichokes, Globe, s. d. s. d	Herbs, per bunch 0 2- 0

Articholes, Globe, ... 3 ... 4. Hetbs, per bunch. 0 2 - 0 4 per doz. ... 4 lors Radish, bund. 3 0 - 4 0 lors Radish, bund. 1 0 - 1 0 lors Radish, bund. 1 0 - 1 0 lors, per bushel. 1 0 - 2 0 lors, per bushel. 1 0 - 2 0 lors, per bushel. 7 0 - 0 lors, per bushel. 7 0 - 0 lors, per bushel. 7 0 - 0 lors, per bushel. 7 0 lors, per bushel. 7 0 lors, per bushel. 7 0 lors, per bushel. 9 lors, per bushel. 9 lors, per bushel. 0 4 - 0 lors, per bushel. 0 4 - 0 lors, per bushel. 0 4 - 0 lors, per bushel. 1 0 lors, per bushel. 2 lo

POTATOS.—Kent Magaums, 80s. to 100s. per ton; do., Regents, 80s. to 100s.; Champions, 70s. to 85s.

CDI PLOWERS.—AVENAGE WHOLESALE PRICES,							
s. d. s. d.	s. d. s. d.						
Abutilon, 12 bunches 3 o- 6 o	Marguerites, 12 bun. 3 0- 6 o						
Anemones, 12 bun 4 0- 6 0	Mignonette, 12 bun. 3 o- 0 o						
Arum Lilies, 12 blms. 3 o- 6 o	Narcissus (Paper-						
Azalea, white, 12 spr. o 6- 1 o	white), 12 bunches 3 0- 0 0						
Bouvardias, per bun. 1 o- 1 6	Pelargoniums, 12 spr. 1 6- 2 o						
Camellias, per doz 2 0- 4 D	- zonal, 12 sprays o 6- 1 D						
Carnations, 12 blms. 1 0- 3 0	Polyanthus, 12 bun. 3 o- 6 n						
Crocus, 12 bunches I o- 2 n	Primroses, 12 bun 0 6- 1 0						
Cyclamen, 12 blooms n 3- o 6	Primula, double, but, 1 o- 1 6						
Daffodils, double, 12	- single, 12 bun 4 0- 6 n						
bunches 4 0- 6 0	Roses (indnor), doz. 2 o- 6 o						
- single, 12 bnn 3 0- 6 o	- coloured, doz 3 c- 9 o						
Epiphyllum, 12 blms. n 6- 1 o	Snowdrops, 12 bun. 1 0- 2 0						
Eucharis, per doz 4 o- 6 o	Tropæolum, 12 bun. 1 6-3 o						
Gardenias, 12 blms 6 0-12 0	Tuberoses, per doz 2 o- 4 o						
Heliotropes, 12 sp 0 6- 1 0	Tulips, 12 blooms 1 0- 1 3						
Hyacinths (Roman),	Violets, 12 bunches o 6- 1 o						
12 sprays o 6- 1 o	- French, per bug. o 4- o 9						
Lapageria, white, 12	- Parme, per buo. 2 0- 4 0						
blooms 3 0- 6 o	Wallflower, 12 bug 4 0- 6 a						
- red, 12 blooms 1 0- 3 0	White Jasmine, per						
Lilac, white Fr., bun. 6 o- 8 o	buoch o 6- 1 0						
Lily-of-Valley,12 spr. 0 9- 1 6							

Government Stock .- Consols closed on Monday

PLANTS IN POTS .- AVERAGE WHOLESALE PRICES.

Ferns, in variety, per dozen ... 4 0-18 o Ficus elastica, each 1 6-7 o Foliage Plants, various, each ... 2 0-10 o Hyacinths, per doz. 8 0-10 n Lily of the Val., pot 1 6-2 o Marguerite Daisy, per dozen ... 6 0-12 o Myrtles, per dozen ... 6 0-12 o Palms in variety, each ... 2 6-12 o Palms in variety, each ... 2 6-12 o Primula, single, per dozen ... 4 0-6 o 12 o Primula, single, per dozen ... 4 0-6 o ... 4 0-6 o dozen 4 o- 6 o Tulips, per dozen .. 6 o- 9 o

- Cut flowers from France are being sent in large quantities.

SEEDS.

SEEDS.

LONDON: March 5.—The market for farm seeds is steady, and, as regards values, there is no change to be noted. The sowing demand is fairly active, and the small stocks remaining of foreign Clover seed are being rapidly reduced. With favourable weather business must shortly become very brisk. Of fine English red the supply is falling off. White Clover seed is in good request at the late advance. Askie and Trefoil continue dull. For Italian and perennial Rye-grasses the market is weak. Spring Tares realise 1s. per quarter more money. Canary and Hemp seed are without quotable variation. John Shaw & Soans, Seed Merchants, 37, Mark Lane, London, E.C.

CORN.

CORN.

At Mark Lane on Monday English Wheat was firmly held, the extreme of the previous Monday's rates being paid. For foreign Wheat the demand was quiet, but prices steady. Flour was dull of sale, without change in value. Malting Barley met only a limited enquiry, without alteration; grioding was rather against buyers. Beans and Peas met a quiet demand, at previous rates; Beans and Peas met a quiet demand, at previous rates; Coats advanced, but very slowly; and Maize was very firm at 3d. to 6d. above the rates of Monday se'might. —On Wednesday transactions in Wheat were only of limited exteot, but the tone fully steady. Flour was quiet and unchanged in value. But little was done in either malting or grinding Barley, yet prices were very steady. Beans and Peas sold in moderate quantity at Monday's currency. Maize was firm, and Oats were steady, with a moderate demand, —Average prices of corn for the week ending March 1:—Wheat, 37s. 3d.; Barley, 31s. 7d.; Oats, 15d. 10d. For the corresponding period last year:—Wheat, 42s. 6d.; Barley, 33s. 8d.; Oats, 21s. 9d.

CATTLE.

At Copenhagen Fields on Monday there was a firmer tone at opening, but without resulting in any quotable change in either cattle or sheep. Of the former Danish sold at 44. 64. to 54. 44., and Swedish 44. to 44. to 6. The sheep supplies included a large proportion of clipped, which appeared to be preferred, and realised 52. 84. to 65. 44. and 55. 64. to 58. 46. To 59. 51. 60. Since 55. 50. Since 55. 50

Tuesday's Whitechapel market report states that trade Tuesday's Whitechapel market report states that trade was very dull in consequence of the wet weather, more especially for Clover, which was difficult of sale at top prices. Quotations:—Prime old Clover, 955, to 1955, inferior, 603, to 755, i; prime second cut, 903, to 1055, i; inferior, 803, to 1957, inferior, 803, to 1957, inferior, 804, to 865, inferior, 804, to 804, to

POTATOS.

The Borough and Spitalfields Markets reports state that good supplies were on offer, but trade ruled slack, Quotations:—Magnum Bonums, 70s. to 80s.; Regents, 70s. to 80s.; Champions, 50s. to 60s.; Victorias, 70s. to 80s.; and Rocks, 40s. to 90s. per ton.—The imports into London last week were 746 bags 202 barrels from Harlingen, 222 bags Hamburg, 166 Boulogne, 172 boxs. Malta, 120 sacks Bordeaux, and 135 sacks from Rouen.

COALS.

The following are the prices current at market during the week:—Ravensworth West Hartley, 14, 9d.; East Wylam, 75,; Walls End—Haswell, 165, 6d.; Hetton, 165, 6d.; Hetton, Lyons, 155.; Lambton, 765.; Walls, 155.; Caradoc, 165. 6d.; East Hartlepool, 155. 9d.; South Hartlepool, 155. 3d.; Tees, 165. 9d.; Thornley, 155. 0d.

at 101% to 101½ for delivery, and 101½ to 101¼ for the account. The prices of Tuesday and Wednesday were, for delivery, 101¾ 101 101¾ for the account; the same figures were recorded on Thursday.

E UREKA!!! INSECTICIDE, To Brotles, 1s., 2s., and 3s. 4d. each. 7s. 6d. per Gallon. Special quotations for large quantities.

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of Grapes, was awarded to Joseph Meredith. Also many other
Gold Medals, both on the Continent and in the United Kingdom.
The above Successes largely attributable to the use of this inPrice—Canisters, 11.; Sealed Bags, 21., 32. 64., 56. 64.,
oz. 64. and 38. 64. Sole Ageat—JAMES MEREDITH,
Seedsman, 126, Bridge Street, Warrington.

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sample bags, 4s. 6d, per bag, 1cs, per bag, ELACK FIBROW,
PEATI, 4s. per bag; five bags for 17s. 6d.
Also, the best and cheapest house for LOAM, SAND (coarse,
Also, the best and cheapest house for LOAM, SAND (coarse,
LABELS, BOUQUET WIRE, and every GARDE
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FIBRE, 3d. per bushel; per truck of 2 tons, 35s. The best
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23s. per 10s... OW BETCHWOOTH LOAM, see books! HORTICULTURAL SUPPLY

STEE SILVER GARM, Intensity of the Model, 12, per bushel. BEST YELLOW BETCHWORTH LOAM, 12, per bushel. LEAF MOULD, 12, for bushel pEAT MOULD, 12, per bushel. COMPOST for Potting or for Garden, 12, per bushel. SEHAGN UM MOSS, 75, 66, per bag. Our speciality, TOBACCO CLOTH and PAPER. Ultiweral MAVURE. The best yet offered—a very powerful Ultiweral MAVURE.

feriliker, 1st, per ewt.

PERUVIAN GUANO, as imported, 18t. per cwt.; 56 lb.,
11s.; 7 lb., 2s. 6d. All bags 4d each.

Tems, Cash with Order, or Trade reference.
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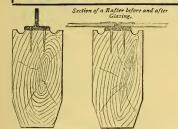
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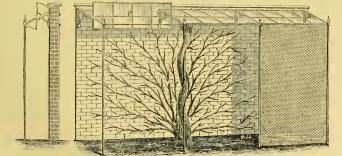
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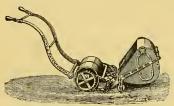
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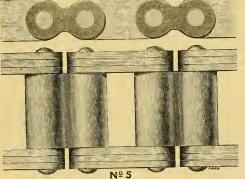




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No. 533.—Vol. XXI. (NEW SERIES.)

SATURDAY, MARCH 15, 1884.

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tions, Its large and time species, and now rare in collections. Its large and time species, and now rare in collections. Its large and time species, and catalogues had.

Friday Next.—Cattleya Mossilæ.

MESSRS. PROTHEROE AND MORRIS.

MESSRS. PROTHEROE AND MORRIS.

Triday Next.—Cattleya Mossilæ.

MESSRS. PROTHEROE AND MORRIS.

To structed by Mr. F. Sander to SELL by AUCTION at their Central Sale Rooms, 67 and 68, Cheapside, E.C.,
on FRIDAY NEXT. a superb importation of CATILYA'
MOSSIÆ, in splendid condition, among them being many
large masses. C. Mossize is one of the finest and best of the
genus.

On view morning of Sale, and Catalogues had.

On view morning of Sale, and Catalogues had.

On view morning of Sale, and Catalogues had.

Anerley, S.E.

In the High Court of Justice, Chancery Division.—Re the General Horticultural Company (John Wils), Limited.

MESSRS PROTHEROE AND MORRIS

MISSELL by AUCTION, under an order of the Hon.

MI, Justice Chitty, on the Premises, The Melbourne Nursery, Anerley, S.E., about five minutes' walk from the Anerley and DAY, March Jonation, on WEDNESDAY and THURS-DAY, March Jonation, on WEDNESDAY and THURS-DAY, March Jonation, on WEDNESDAY and THURS-DAY, March Consequence of the large number of 1st), without reserve, the whole of the CHOICE STOVE and GREENHOUSE PLANTS. They comprise—200 DRACENAS, Wills' fine bybrid and other kinds; 2500 PALMS, in great variety, including 7000 Latania borton of the CHOICE STOVE and GREENHOUSE PLANTS. They comprise—200 DRACENAS, Wills' fine bybrid and other kinds; 2500 PALMS, in great variety, including 7000 Latania borton of the Stove Mellow of the Stove Wills' fine bybrid and other kinds; 2500 PALMS, in great variety, including 7000 Latania borton of the Stove Mellow of the Stove Wills' fine bybrid and other kinds; 2500 PALMS, in great variety, including 7000 Latania borton of the Mellow of the Stove Wills' fine bybrid and other kinds; 2500 PALMS, in great variety, including 7000 Latania borton of the Mellow of the Stove Wills' fine bybrid and other kinds; 2500 PALMS, in great variety, including 7000 Latania borton of the Mellow of the Mellow

Special Sale of Flowering Orchids.

MESSRS. PROTHEROE AND MORRIS
beg to announce that their next special SALE of
FLOWERING ORCHIDS will take place on TUESDAY,
March 2s. Entries should be made not later than MONDAY
NEXT. 67 and 68, Cheapside, E.V.

Preliminary Notice,
The General Horicultural Company (John Wills), Limited.
MESSRS. PROTHEROD. AND MORRIS
Will shortly be favoured with statisticate to SELL by
AUCTION the various LEASES, and the Notice Nursery,
Ouslow Crescent, S.W.; the Sussex Place Nursery, Soulsow Crescent, S.W.; the Sussex Place Nursery, Sullaw, S.W.
Auctio Ether particulars will be duly announced.
Auction The Property of the State Offices, 8, New Broad Street, and 67 and 68, Cheapside, E.C.

Notice of Removal. MESSRS. PROTHEROE AND MORRIS
beg to announce that, with a view to meet the requirements of an increasing Business, they have been compelled to
REMOVE THEIR OFFICES from 8, New Broad Street,
to more commodicus Premises at 67 and 68, CHEAPSIDE,
E.C., to which address all communications should in future be
sent.

Central Sale Rooms, ground floor; Estate and General Offices, first and third floors.

Wednesday Next,—(Sale No. 6619)
HARD PLANTS and BULBS.

M.R. J. C. STEVENS will SELL by AUCGarden, W.C., on WEDNESDAY NEXT, March 19, at halfpast 12 o'Clock precisely; Dwarf and Clumbing ROSES,
FLOWERING SHRUES, EVERGREENS, CLIMBING
BLOCK, ASPARIONS, DAHLIAS, &c., Rare LILIES,
GLADICI, ASPARIONS, DAHLIAS, &c., Care
FUNNITURE, &c. AUST PLANTS, RUSTIC GRADEN
GO view morning of Sale, and Catalogues Ind.

Thursday Next.—(Sale No, 662a.)

Six Cases of ARAUCARIA EXCELSA, as received.

MR. J. C. STEVENS will include in his SALE by AUCTION, at his Great Rooms, 38, King Street, Cowent Garden, W.C., on THURSDAY NEXT, March 20, Six Cases of ARAUCARIA EXCELSA, in fine condition, containing from 20 to 400 plants each.

On view morning of Sale, and Catalogues had.

Thursday Next—(Sale No. 662a.)

Thursday Next—(Sale No. 662a.)

LELIA ANCEES, New White Type.

M. J. C. STEVENS will SELL by
Garden, W.C., on THURSDAY NEXT, March 20, at halfs
12 o'Clock precisely, by order of Mr. F. Sander, St. Albans
12 o'Clock precisely, by order of Mr. F. Sander, St. Albans
12 o'Clock precisely, by order of Mr. F. Sander, St. Albans
13 o'Clock precisely, by order of Mr. F. Sander, St. Albans
14 order of Mr. F. Sander, St. Albans
15 o'Clock precisely, by order of Mr. F. Sander, St. Albans
16 order of Mr. F. Sander, St. Albans
16 order of Mr. F. Sander, St. Albans
17 order of Mr. F. Sander, St. Albans
18 order of Mr. F. Sander, St. Albans
18 order of Mr. F. Sander, St. Albans
18 order of Mr. F. Sander, St. Albans
19 order of On view morning of Sale, and Catalogues had.

The Collection of Store and Greenhouse Plants formed by F. A. Davis, Esq., who is giving up exhibiting. M. R. J. C. STEVENS has received instructions from F. A. Davis, Esq., of Subiton, to offer for SALE by AUCTION, at his Great Roms, 30, King Street, Covent Cardeo, W.C., on WEDNESDAY, March 26, the COLLECTION of PLANTS with which he has been so excessful in exhibiting. Amongst others will be found fine specimens of :— Erica Shannoniana Pimelea mirabilis Dracophyllum gracile Pimelea Hendersoni Bongainvillea glabra Clerodendron Balfourii Erica exquisita "tricolor Wilsoni", Actoniana Turnbulli

mens of :—
Genetyllis fuchsioides
, tulipifera
Phenocoma profilera Barnesii
Aphelexis macrantha purpurea
, rosea, Baines' var.
, sessamoides rosea.
Erica Findleyana
, ventricosa Bothwelliana
, coccinea minor
, Cavendishii
A few ORCHIDS, &c., all in

A few ORCHIDS, &c., all in the best possible health and well set with flower.

On view morning of Sale, and Catalogues had.

Botanical Library.

M. R. J. C. STEVENS has received instrucTION EARLY in APRIL, the valuable BOTANICAL
LIBRARUM in APRIL, the valuable BOTANICAL
LIBRARUM and the Library Experience of the control of

Further particulars in future advertisements.—Auction Rooms and Offices, 38, King Street, Covent Garden, W.C.

The Valuable Collection of Orchids and other Plants The Valuable Gollection of Orchids and other Plants formed by the late Robert Hanbury, Esq.

M.R. J. C. STEVENS has received instructions from the Executors to offer for SALE by AUCTION, EARLY in APRIL, without the least reserve, the valuable COLLECTION of ORCHIDS and other FLANTS formed by the late Robert Hanbury, Esq., The Poics, Ware. Further particulars in future advertisements.—Muction Rooms and Offices, 38, King Street, Covent Garden, W.C.

and Offices, 38, King Street, Covent Garden, W.C.

The Down House Collection of Orchids.

XR. J. C. STEVENS has been favoured
with instructions from Sir Wm, Marriott to SELL by
AUCTION, at bis Garden, W.C., about the SECOND WEEK, M. M. W. C. Server, M. W. M. Marriott to SELL by
Auction of ORCHIDS. The plants have been selected
with the greatest care for a period of more than 1 y pears, during
which time the inferior varieties have been several times discreded. Among them will be found many of the finest varieties
creded. Among them will be found many of the finest varieties
creded. Among them will be sold without the slightest reserve,
and nothing disposed of prior to Sale.

Further particulars in next advertisement.

New Hall, Seaside Road, Eastbourne.

New Hall, Seaside Road, Eastbourne.

Important two days 'Sale without the least reserve.

M.R. F. W. ABRAHAM will SELL by
AUCTION, in the Large Hall as above, on WEDINES.
DAY and THURSDAY, March 10 and 20, at 2 o'Clock
precisely each day, NURSER'S TOCK in great variety, and
embracing fine specimen Conifers, Evergreens, Fruit and Forest
Trees, Roses, &c. These plants, trees, &c., are all Englis
grown, and in the fluest condition for planting.

Catalogues may be had at the New Hall, or free by post of
the Catalogues may be had at the New Hall, or free by post of
the Catalogues had been conditioned to the condition for planting.

Surrey.

By Order of the Trustees.
TO WIND UP THE ESTATE.

MUST BE SOLD, OSBORN'S NURSERY,
Sunbury, Middlesex, consisting of 17 acres of Freebold
modern with two feet Budding Frontage, and the whole of the
modern the condition of the co

FOR SALE, a Small NURSERY, at Edmonton, with five Greenhouses and Pits, well stocked. Apply at S. SOUTH, Angel Road Pottery, Edmonton.

To Nurserymen, Seedsmen, and Plorists,
TO BE DISPOSED OF, the Old-established
BUSINESS, carried on by the late Joseph Tremble &
Son, Victoria and The Castle Nurseries. Penrith, Cumberland,
the above will be sold on easy terms, and offers a rare opportunity for business men in a fine neighbourhood, where there is
increasing scope for a large trade.
For particulars, apply to Mr. H. G. PATTINSON, Greenfield House, Fearnth.

TO LET, large KITCHEN GARDENS, with Small Forcing Pit and Shed, at a moderate rent. Apply to E. M. BIRLEY, Somerville, Pendleton, Manchester.

PROTHEROE AND MORRIS, HORTICUL-TURAL, MARKET CARGER AND ESTATE AUCTIONEERS and YALUERS, 8, New Broad Street, E.C., and at Leytonstone, E. Monthly Horticultural Register had on application.

EUCHARIS AMAZONICA, good sound Bulbs in clean, healthy condition, 9s. and 12s. per dozen. HY. GODFREY, Stourbridge.

POTATOS.—A quantity of Sutton's Reading Hero, Sutton's Fulvfold, Sutton's Filibasket, Albany Kidney, Sutton's Ashleaf, For price, &c., apply S. TAYLOR, Moorgreen, Notts.

PICEA NORDMANNIANA, fine specimens, 5 to 9 feet, 6oz, per dozen. Portugal LAURELS, Standards, 4 feet stems, with good heads, 7s. 6d. LauRELS, Stand-JOHN PRICE AND SON, Kingstanley Nurseries, Gloucestershire.

FOR SALE, 1 cwt. Adam's Early White BROCCOLISEED, at st. per lib.; 20 bushels CARLET RUNNER BEANS, at 13, per bushel; 20 cut of MERICAN CRESS, at 43 per cwt.; 8 bushels Pained Lady WERICAN BEANS, at 13, per bushel. All new seeds. Apply to MER JOHN DEEKS, Sted Grower, Kelvedon, Essex

TO GENTLEMEN PLANTING. — The
TRUE NATIVE BRAEMAR SCOTCH FIR, 25/2 to 3 feet, Picked pinats, finely roots, finely of the NATHE BAREAU NORWAY SPRUCE, fine, 15 to 18 inches, Will be sold cheap. For price apply to HOGG and WOOD, Nurserymen, Coldstream, N.B.

DWARF ROSES, on Manetti, 24s. per 100,
MANETTI STOCKS, fine, 2st. per 1000.
ASPARAGUS, 39r. Connover's Colossal, 15t. per 1000,
2-yr. definest per 1000; 3-yr. Grant, 12st. del per 1000.
R. LOCKE, Royal Nurseries, Red Hill, Surrey.

S. HARTLEY, Headingley Nursery, Leeds, is now sending out the finest Show and Border varieties of CARNATHONS, PICOTERS, PINKS, &c. Catalogue and price on application,

UGH LOW AND

H U G H L O W A N D C O.

AZALEA ANIGENA, well budded, 6s. per dozen,
AZALEA ANIGENA CALDIWE LII, splendidly budded and
in flower, os. per dozen.

AZALEA INDICA, in variety, finely budded, 45, 46, and
for dozen.

AZALEA INDICA, in variety, finely budded, 45, 46, and
for dozen.

AZALEAS, Forward, just opening, and in flower, 18s. 19s.
CORYPHA AUSTRALIS, good, 12s. to 18s. per dozen.

DRACÆNAS, in variety, fine plauts, 18s. to 20s. per doze
DEUTZIA GRACILIS, in pots, in bud, 9s. per dozen, 6os.
per 10s.

ERICA PERSPICUA NANA, in bud, forward, 125, 155., 18s., and 21s. per dozen. ERICA PERSOLUTA ALBA, strong, finely budded, 18s. per

dozen. ERICA EEGERMINANS, well budded, 125. per dozen. ERICA MELANTHERA, well budded, 125 per dozen. ERICA YENTRICOSA, in variety, well budded, 125. and 245.

ERICA YENT RICUSH, in Valley, year to 12 buds, 18t, 2nd 24t.

GARDEN GOVERNENDEDIA, to to 12 buds, 18t, 2nd 24t.

GENISTAS, very fine, just opening, 8t., 9t., 10t., 7t. et al.

HYDRANGEAS, Dwarf, in good condition for travellind 34t.

HYDRANGEAS, Dwarf, in good condition for travellind 34t.

HYDRANGEAS, Dwarf, in good condition for travellind 34t.

HATANIA BORBONICA, well shaped stury plants, 19t.

PALMS, 0 2003, per 100.

FELARGONIUMS, Zonal, Single and Dough, in bud and flower, in 48 pots, 30t. to 30t. per 100.

BOWER, in 48 pots, 30t. to 30t. per 100.

Clapton Nursery, London, E.

GERANIUM, DR. ORTON, superior to H. Jacoby in every way, 41, per dozen, 30s. per 100, in 60's. We strongly recommend this Geranium W. ANO J. BROWN, Stamford.

A SPARAGUS, Giant, 2 and 3-yr. For JAMES BIRD, Nurseries, Dowoham.

CHOICE EARLY BLOOMING PLANTS.
AZALEA DAVIESII, deliciously scented, 21, 65, each,
PONTICA, well
PONTICA, well
RHODDIENDRONS, Greenhouse, Sweet-scented varieties,
21, 64, to 21, 64, each, and upwards.
RHODDIENDRONS, Greenhouse, Sweet-scented varieties,
21, 64, to 21, 64, each, and upwards.
RHODDIENDRONS, Greenhouse, Sweet-scented varieties,
22, 64, to 21, 64, each, and upwards.
RHODDIENDRONS, Greenhouse, Sweet-scented varieties,
24, 64, to 21, 64, each, and upwards.
Planty all the best named varieties, fine plants, well
Descriptive CATALOGUE of the above and of General
Nursery Scoto application.
ISAAC DAVIES AND SON, Nurserymen, Ormskirk,
Lancachire.

New Single Yellow Wallflower.

CRANFORD BEAUTY.—No Conservatory or Spring Flower Garda is perfect without this lovely novelly in the way of spring flowers. It is very hardy, and the scent delicious. The flowers are quite ab/ inches across. Seed can be obtained rirect from the Raiser, in packets, price 2s. 6d. and 5s. each, prepaid, of Mr. JOHN CRAHAM, Bath Road, Cranford, Hounslow, Middleser.

Batt Road, Crantord, Hounstow, Principles.

Cabbage Flants.

CABBAGE FLANTS.—Extra strong fine
CABBAGE FLANTS. Exty Enfeld Market, Battersea.
Nonpareil, and Robinson's Champion Drumbead, 3r, per 100.0

Red Pickling Cabbage. Hardy Green Cos and Grand Admiral
LETTUCE, 3r, per 100.0, well-rooted and free from club-root.

LETTUCE, 3r, per 100.0, well-rooted and free from club-root.

Grown unknown correspondents. Delivered free on rail.

W. YIRGO, Wonersh Nurseries, Guildford.

RHODODENDRON PONTICUM, HODODENDRON PONTICUM,

3 to 4 inches, transplanted, 35t, per 1000; 4 to 6 inches,
do, 60s; per 1000; 3 islo 2-yr. seedlings, from finest hamed sore;
supplementation common hybrids, 85. 6d. per 1000.
LAUREL, common, 1½ to 2 feet, face, 141; 2 to 3 feet, 172; 6d.
per 100; CAUCASICUM, 1½ to 2 feet, face; 12 to 3½ feet, 172; 6d.
per 100; ROTUNDIFOLIA, 1½ to a feet, 185. per 100.
AUSTRIAN PIRE, 1½ to 2 feet, finely rooted, 34t, per 100.
Obm. 15. MARRIOT, Highfield Mureries, Mathock.

BEST PERUVIAN GUANO, 14s. per cwt.; BONE MEAL, 10s. per cwt.; NITRATE of SODA, 13s. per cwt. in bags of about zwt. SULPHATE of AM-MONIA, 13s. per cwt., in bags of z cwt. H. GUILLAUME, 12s, Oriental Place, Docks, Southampton.

The Planting Season.

AND A. MORRISON, The Nurseries, Elijn, beg to draw the attention of intending Planters to their extensive and well-grown stock of SCOTCH FIR and LARCH, of all sizes, from 1-yr, seedlings to 2 to 3 (set, all the produce of seed collected for them in the Forests in the North of Scotland, and taken out of cone no kins within their Nursery of Scotland, and taken out of cone on kins within their Nursery of True Native."

"True Native."

R. AND A. M. also grow largely PINUS AUSTRIACA, LARICIO and MONTANA, NORWAY SPRUCE, ASIT, LELM (Wych, OAK, SYCAMORE, and other FOREST TREES, as also I large word, and other FOREST TREES, as also I large word, and of the control of the state of the s

A R E I N D I A N L I L I E S I JANANSE MARLES RULIS for SPRING PLANTING. See our Special LIST No. 6s. A Small Parcel of RARR SEEDS (Alpines, &c.) from New Zealand. For ORCHIDS, see our LIST No. 64.

LIERACEOUS and ALPINE PLANTS.

—CATALOGUE of fifty pages, containing full information as to colour, height, situation, time of flowering, &c, free on application. A capital Collection for Rocks, Stumps, and Borders, from 25t per 100, or 4t per dozen. Most of the plants being in post may be desgatched at any time, or by Farcels Fost RICHARD SMITH AND CO., Nurserymen and Seed Merchants Worcester.

CARNATIONS, PICOTEES and PINKS.

—We offer the above, strong plants of the best varieties,
our selection, carriage and package free for cash with order.

CARNATIONS and PICOTEES, 125, 6d, to 202, per dozen
Pairs; PINKS, 52, 10, 29, per dozen plants; the Old Crimson

CLOVES, 42, per dozen plants; White CLOVES, 42, per dozen
plants; also Double PINETHRUMS, good plants to name, 4s, per dozen. ISAAC BRUNNING AND CO., Great Varmouth Nurseries.

Daffodil, Daffodilly, Daffodowndillies.

A DESCRIPTIVE CATALOGUE of more than acc serts of DAFFODILS free on application.

BARR AND SON, 12, King Street, Covent Garden, W.C. SURPLUS STOCK.—Handsome and Choice

Evergreen and Deciduous TREES for Avenues, Parks, Gardens, Streets, &c. Very good and cheap. LIST free by post. RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

Merchants, Worcester.

JOHN FORBES begs to state that his JOHN FORBES begs to state that his Annual PLANT CATALOGUE for 1884 is now ready, and will be posted on application. It consists of seventy pages of closely printed matter, representing probably the largest and best collections of Pansies, Flouese, Penstemons, Antirihanums, Delphiniums, Fotentillas, Minmius, Carnations, Flyetherhander and Plants, &c., ever brought together, all of which are accurately described and priced. The Stock is this season unusually large, healthy, and vigerous, while the very superior quality of the varieties is now so well known and so widely recognised that all who design so your Fourmer of Starting same to the notice of the property of the

FLOWERING SHRUBS.—Lilac, Mock Cytisus, Hydragaea, Hypericum, Mezereum, Ribes, Spirzaa, Rhus, Yburnum, &c., 8r. per dezen. Descriptive LIST free. RICHARD SMITH AND CO., Nuserymen and Seed

SEED POTATOS, Early and Late varieties; size, Seed and Ware. Beauty of Hebroo, very early, and of excellent quality, £6 per ton; £arly Vermont, £5 per ton; Suttools Reading Hero, late variety, of great growth, quality much superior to Magaum Boomu, £6 per ton on rail.

J. AND H. CRAIG, Birdenshott, Worplesdon Station, Guildford.

E E D P O T A T O S.

BEAUTY OF HERRON, £6 per ton.

MAGNUM BONUM, £4 per ton.

CHAMPION, £3 ron, per ton.

ARTICHORES, £4 per ton in London.

Free on any Railway? Station in London.

Apply

E. A. A.P.H., Carylord, Kent.

TO THE TRADE.

SUTTON'S YELLOW INTERMEDIATE MANGEL, 355.

SUTTON'S VELLOW INTERMEDIATE MANUEL, 355, per cept. BERKSHIRE PRIZE YELLOW GLOBE, 355, per cept. CHAMPION YELLOW GLOBE, 355, per cept. CHAMPION YELLOW GLOBE, 355, per cept. SHARPES IMPROYED PURPLE-TOP SWEDE, 356, per bushel. HARTLEY'S SHORT-TOP SWEDE, 357, per bushel. HARTLEY'S SHORT-TOP SWEDE, 357 per bushel. PURPLE-TOP MAMMOTH, 185, per bushel, PURPLE-TOP MAMMOTH, 185, per bushel. PURPLE-TOP MAMMOTH, 185, per bushel. GREEN-TOP SCOTCH YELLOW, 255, per bushel. GREEN-TOP SCOTCH YELLOW, 255, per bushel, ERADFIELD HALL YELLOW, 255, per bushel, 255, per

East Harkwith, Wragby, Liocolushire.

CHOICEST CONIFERÆ.— Abies

Deuglasti, 1 to 1½ foot, 24t. per 100; 1½ foo 1½ feet, 30t. 2½ feet, 30t. per 100; 1½ foo 1½ feet, 30t. 2½ feet, 20t. per dozen. Cedus Deodara, 4 to 5 feet, 13e. per dozen. 6 to 7 feet, 36t; 8 to 9 feet, 60t. per dozen. Cryptomeria elegans, 1½ foot, 30t. per 100; 1 feet, fine, 12t. per dozen. Cupressus Lawsoniana, 2 to 2½ feet, fine, 12t. per 10c. Cupressus Lawsoniana, 2 to 2½ feet, fine, 25t. per 10c. 25t. per 10c. 1 feet, 12t. per 10c. 25t. per 10c.

PECIAL OFFER.—ASH, 2 to 3 feet, 166.

Detroos; Spanish CHESTNUTS, 2 to 3 feet, 206. per coo; EMS, 20 5 feet, 206. per coo; EMS, 20 5 feet, 206. per coo; EMS, 20 5 feet, 206. per coo; SPRUCE FIR. Fil. 19/ foot, for per coo; TSPUCE FIR. Fil. 19/ foot, for per coo; TSPUCE FIR. Fil. 19/ foot, for per coo; 3 feet, 146. per 1000; 2 to 3 feet, 146. per 1000; 3 feet, 146.

SEED POTATOS, of first class quality. About 60 tons of Champions (from Scotch Seed), and Sutton's Magnum Bonums, grown on a light soil.

J. LOVICK, Longbridge Farm, Warwick.

ROSES (20 acres).—Well-rooted, many of the best knots. Packing and of the best knots. Bushes, R. S. & Co, S. election, Sr. per dozen, Gos. per 100; packing and carriage free for cash with order. Standards, 15t, per dozen, or 100 free for 1201. These world-lamed Roses cannot fail to give the greatest satisfaction. Descriptive LIST free on application.
RICHARD SMITH AND CO., Nurserymen and Seed Merchant, Worcester

Pelargoniums,—Pelargoniums.

JAS, HOLDER AND SON have to offer the above in strong healthy plants, established in small 60-pots, consisting of Show, French, and Spotted varneties, to aname, 30-, per 100- jals Extra Strong Plants in 48-pots, 94. per dozen, 60s. per 100- Also Double-flowering Trys-leaved PELARGON/UMS, in six varieties, in 60 and 48-pots, at same prices. Packing included. Cash with order.

Crown Nussery, Reading.



Special Offer - Cheap Pelargoniums, &c.

VILLIAM BADMAN offers as below, all

trong, healthy, and well-rooted:

TRICOLOR - Mrs. Pelocks, from single pots, 2s. 6d. per
description of the person of th

Master Christine and Aris Locas, and proper dozen, ros. per 103.

M. Yaucher, Virgo Marie, White Vesuvius, whites, 15. 6d per dozen, ros. per 100.

Waltham Seedling and Bonfire, crimsons, 15. 6d. per dozen, ros. per 100.

Mrs. G. Smith and Lucius, fine salmon, 15. 6d. per dozen, ros. per 100.

dozen, ros. per 100.

Henry Jacoby, finest crimson, for all work, 2s. 6d. per

Henry Jacoby, finest crimson, for all work, 22. 6d. per Cougen, cox. per 100.

DOUBLES—Wonderful, scarlet: Madame Thibaut, pink, yan Madame Baltet, fine white, 22. per dozen, 122. per 100. F. V. Kaspall, finest scarlet, good winter DECORATIVE PELAKCONIUMS—a fine collection, in thumb-pots, 31. per dozen, 212. per 100. or in 48s, 82. per 100. CALCEOLARIA COURTER COU

CALCECTARY—Concert Cemp. rootes cuttings, strong.

LOBELIA-Filter

Concert Cemp. 1 Concert Cemp. 1 Cem

GRAPE VINES.—We beg to offer strong healthy well-ripened Canes of the following sorts, true to name:

Black Hamburgh. Lady Downe's Seedling. Muscat Hamburgh. West's St. Peter. Frankenthal. Muscat of Alexandria. Madresfield Court.

Strong Fruiting Canes, 5s. 6d. and 5s. 6d. each.
Planting Canes, 3s. 6d. to 5s. each.

DANIELS BROS., Town Close Nurseries, Norwich.

HOOPER'S HYBRID GLADIOLL-TOPIER 3 of 11 DELPH 2011.

Officed More the earlier is the property of the conference of the conferen

LEDSHAM'S "LATEST OF ALL"

EDSHAM'S "LATEST OF ALL"

BROCCOLI.

"Mr. S. Ledsham, the raiser of this unequalled Broccoli,
which was awarded a First-class Certificate by the Royal
Horticultural Society, May p. 1883——see Genderic Tollowonic
good supply of Seed of the above Broccoli, and is prepared to
make Special Liberal Offers per pound to the Trade. Also a
quantity of BRUSSELS SFROUT SEED of a very superior
strain, which will be sold at a low price. Terms on application to
S. LEDSHAM, Green Lane, Tavin Road, Chester.

FINE WELL TRANSPLANTED TREES,
-Laurels, 1½ to 2 feet, ½5 per 1000; Finus Laricio,
1½ to 2 feet, 9a, per 1000; Finus suntriaca, 1½ to 2 feet, 9ac, per 1000; Fockoth Fin, fine, 2 to 2½ feet, 9ac, per 1000; Fices
Nordmantiana, 1 to a feet, 4cr, per 100; Fyriamidal Yews, 2 to
3 feet, 400, per 100; Winte Clove Carisations The Bride and
Mrs. Sinking, 200 flantis, 200; per 200.
W. JACKSON, Blackdown, near Kidderminster.

To the Trade.

MANGEL WUKZEL and TURNIP SEEDS.

AND F. SHARPE are prepared to make special offers of all the lending kinds of home-grown MANGEL WUKZEL and TURNIP SEEDS of 1883 growth, and raised from choice selected stocks. Prices (which are extremely low) and samples may be had on application. Seed Growing Entablishment, Wisbech.

Seed Growing Establishment, Wisbech.

SEED POTATOS.—Potatos to grow for Exhibition! Potatos for the Garden! Potatos for the Field! A change of seed always pays. All the best and enwest sorts at reasonable prices. Collections of 12, 24, 48, or 35 wareties made up. If you want to buy a peck, bushel, hunbest varieties, send for my Descriptive Catalogue, containing list of nearly eighty of the leading sorts.

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Asparagus.—Asparagus.

ROBERT AND GEORGE NEAL, having a Surplus Stock of the above, beg to offer ten thousand, 1-yr. old, for £5, cash; also 3 and 4-yr. old. Samples and price

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Peas, standard vars, 12, 12, 3d₁ 12, 6d₂ 22, per qt. Beans, staodard varieties, 8d₁ to 15, 6d per quart. Mustard and Cress, foeet, as, per quart. Cabbage, Carrot, Parsnip, Persley, 6d, per ounce. Ooico, Beet, Endive, Salsily, 8d, per ounce. Lettuce, Leek, Brussels Sprouts, 15, per ounce. Cucumber, Neloo, Cauliflower, 1: 8 ar. 6d, per pkt, Seedsmen, Forest Hill, S.E.

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COLLECTION of SHRUBS and TREES for general planting,

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Primula, white or red, 1s. and as. 6d, per packet.
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STOCK:

NOLLIES, Common Green, 3, 4, 5, 6, 7, 8 to

Luniclia, ditto.

Hodgin, 2, 4, 5 to 8 feet.

Saw-leaved, ditto.

Saw-leaved, ditto.

Scottica, 3 to 8 feet.

Vellow-berried, altaclarense and others.

Variegated, of sorts, 2, 4, 5, 6, 8 to 10 ft.

Waterer's, splendid plants, 3, 4, 5 and 6 feet, 8 to 15 feet in circumference.

Ferry's Weeping Holly, on straight stems, with beautiful heads, ten to fifteep ears' growth, bundreds.

Perry's Weeping Holly, on straight stems, with beautiful heads, ten to fifteep ears' growth, bundreds.

Gew Golden Weeping, a large number of very beautiful plants.

, Perry's Weeping Holly, oo straight stems, with beautiful heads, ten to fittee years growth, bundreds.

new Golden Weeping, a large cumber of very heautiful BOX, Green and Variegated, 3, 4, 5, 6, to 7 feet, many YEWS, Common, 3, 4, 5, 6, to 10 feet, thousands.

"Golden, of all sizes up to 10 feet. We have many of variety and size unequalled.

CURESSUS ERECTA VIRIDIS, 3, 4, 5, 6, 10 8 feet, thousands.

"Lawsoniana lutea, 3, 4, and 5 feet, hundreds of heautiful THUIOPSIS DOLABRATA, 3, 4, and 5 feet, hundreds.

RHODODENDRONS, many thousands, 3, 4, 5, 6, 7, 2, 2, 10 feet. The plants are covered with huds.

AZALEAS, Hardy, the finest varieties known, 3, 3, 4, and ININIPERS, Chineste, 7, 8, and so feet high.

PICEA PINSAPO, 6 to 8 feet.

"NORDMANNIANA, 6, 7, and 8 feet.

Knap Hill Nursery, Woking Station, Surrey.

VEGETABLE and FLOWER SEEDS.

PETER JAMES PERRY

SPRING CATALOGUE

KITCHEN GARDEN and FLOWER SEEDS, GLADIOLI, IMPLEMENTS, &c., for 1884,

Is now Ready, and may be had, post-free, on application.

PEA, "NEW," PERRY'S "EXCEL-LENCY."

A spleodid distinct main crop Wrinkled Marrow Pes, of great ment. Is of a robust constitution, and habit very branching, growing about 6 feet high, with pods of a medium size, each containing eight or sine large Peas of a delicious flavour. Very productive.

In sealed I pint backets, each as,

POTATO, "NEW," COLE'S FAVOURITE.
This variety is distinct from any other yet seed out, a remark-ably beavy cropper and good keeper, showing on signs what-ever of disease, and for exhibition purposes stands unequalled.
Is a Kidney, and classed amongst the second early varieties. Price per Pound, 1s.

PERRY'S IMPROVED BANBURY ONION.

Acknowledged to be superior to any other type of White Spanish Onion. Possessing a fine shape, bright yellow skin, and mild flavour, and has been awarded numerons First Pizes in competition with all the popular kinds in cultivation.

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COLLECTIONS of VEGETABLE SEEDS. These Collections contain only Seeds of recognised merit, proportioned to suit large or small gardens, all equally choice in quality. For detailed list of contents, see Catalogue.

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HARDY PERENNIALS (Illustrated), consisting of an extra choice selection of Hardy PEREN. NIALS, and such as are the most showy and useful, as well as many oew and rare forms; also selections of Aloine PHLOXES, IRIS KÆMPFERI, Hardy Terrestrial ORCHIDS, LILES in pots, PRIMULA SIEBOLDII, Miscellanceus IRIS, Hardy AQUATICS and BOG PLANYS, Ornamental GRASES and BAMBOOS, ASTERS, CYCLAMEN, Rockword SHRUBS, &c.

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CHRYSANTHEMUMS.

A most complete List of all the sterling varieties in each section, and the best of the New Varieties.

CLIMBING, CREEPING, and TRAILING PLANTS.

A very extensive collection of the most useful Hardy Climbers.

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HALE FARM NURSERIES, TOTTENHAM, LONDON.

Special Offer of

STANDARD & DWARF ROSES.

CRANSTON'S NURSERY & SEED CO.

Have splendid Standard and Dwarf Tea, Noisette, Hybrid Perpetual, and other Roses. Also extra strong Dwarf Perpetual, and other Roses. Also extra strong Dwarf Roses in Pots, suitable for Forcing. Special low prices on application

Descriptive Catalogue Free.

CRANSTON'S NURSERY and SEED CO. (Limited), KING'S ACRE, near HEREFORD

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JOHN LAING & CO.
Collections of 1 done named, our Selection.
Singles, A 447, B 367, C 396, D 244, B 187, F 127,
Doubles, P 200, R 637, S 481, T 427.
Collections named, our Selection:
Singles, G 217, H 187, J 187, K 127, L 97, per doz.
Doubles, W 307, X 247, Z 187, ber dozen,
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Engonia Growers, Forest Hill, S.E.

WHEELER'S CHOICE SEED POTATOS

OF EXTRA FINE QUALITY.



DOUBLE GLOUCESTER.—This remarkable variety is one of the most productive Potatos ever introduced.

Price 4s, per peck; 14s, per bushel,

RECORDER (Dean) WHITE KIDNEY.— First-class Certificate of Merit, International Potato Committee, 1882. From Success and Woodstock Kidney. A very fine, second early white Kidney; tubers long, flat, smooth, and handsome, a great crop-per and excellent quality. A first-rate garden Potato; very distinct, and a rare acquisition.

Price 1s. per pound; half-peck, 6s.; peck, 10s. 6d.

WHEELER'S GLOUCESTERSHIRE KIDNEY maintains its position as one of the earliest and best Potatos in cultivation.

Price 3s. per peck.

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SEED GROWERS,

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NOW is the TIME to PLANT CARNATIONS.

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TWO NEW VARIETIES.

MARY MORRIS.—One of the most valuable of modera introductions. Of a strong, vigorous habit, producing monstrons flowers, often 3½ inches indiameter, of an attractive deep rose colour. Has been awarded a First-class Certificate.

WHITE CLOVE "GLOIRE DE NANCY."

—Without question the finest White Clove ever introduced. It has a very robust labid, like that of the old Crimson Clove, and produces, in the greatest profusion, innered cited flowers, which are pure white anabolic, innered cited flowers, which are pure white anabolic Certificate.

CATALOGUE. constraints failed to the contractions.

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CATALOGUE, containing fuller descriptions of the above, with a vast number of other choice Carnations, as well as every other section of HARDY-FLOKISTS-FLOWERS, 18 now ready and shall be sent free to all applicants.

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SINGLE VARIETIES—the leading collection in the Trade, numbers of which have received First-class Certificates.
POMFON VARIETIES—a most chaste selection, invalinable SHOW and FANCY VARIETIES—all the best sorts in culti-Descriptive Priced CATALOGUE of the above post-free on application. THOMAS S. WARE,
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Hold a large stock of superbly grown Plants of the following, and will be pleased to send Samples and Prices on application:—

RHODODENDRON PONTICUM, 1 to 11/2 foot, 11/2 to

RHODDDENDRON PONTICUM, 1 to 1½ foot, 1½ to a feet, busby.

n choicest, named, in 50 to 60 varieties, magnificent plants, grown in sandy loam soil.

LAUREL, Common, 1½ to a feet, 2 to 2½ feet, 2½ to 3 feet.

CAUCASICA, 1½ to 2 feet, 2 to 3 feet, 2 to 3 feet.

n COLCHICA, 1 to 1½ foot, 1½ to a feet, 2 to 3 feet.

NOUNDARY CLUB (50, 1½ for, 1½ to 2 feet, 2 to 2½ ft. LAURUSTINUS, ½ to 1 feet, 1 to 1½ foot, 1½ for, 1½ to 2 feet.

CATALOGUES of Roses, Fruit Trees, Conifera, ... Shrubs, &c., free on application.

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H • AND F; SHARPE'S Wholesale Spring
TURAL SEEDS is now ready, and comprises all the best
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Seeds grown on their own Seed Farms from the finest select
stocks. The samples are very good, and growths strong.
Seed Growing Establishment, Wisbech.

CAPE EVERLASTING FLOWERS, BULBS OF.

Orders for the above from the ensuing Season's Crop should now be sent to

Mr. CHARLES AYRES, Nurseryman, Cape Town; or, through his London Agent,

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from whom all information may be obtained.

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NEW PEA for 1884.

L Y E 'S F A V O U R I T E.

First-class Certificate Royal Horticultural Society.

A splendid White Marrow, height 4 feet, bearing a profusion
of long, handsomely curved pods, with 10 or 11 delicious
Murrow Peas in each. We have purchased the contrestock of
Mr. James Lyc (the Raiser), for distribution.

Price per Quart, 5s.; per Pint, 2s. 9d.
DANIELS BROS., Seed Growers, Norwich.

NEW MELON for 1884. ST. BLAISE.

This spleadid green-fleshed Mehn was raised by Mr. W. Carmichael, who was for many years Head Gardener to H.R. H. Carmichael, who was for many years Head Gardener to H.R. H. H. Carmichael, who was for the most explained to the Mr. H. H. H. Carmichael, and of large size, weighing 4 to 6 pounds each. The flesh is solid, thick, rich, and melting, of the most exquisite flavour and delicate aroma. This variety will be found most valuable during the shooting season, owing to its lateness in ripeoing, when all other sorts in the house are over, often carrying its large, handsome, and fine flavoured fruit through to the end of November. Stock very limited.

Price 5s. per packet, to be obtained only of

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GLADIOLUS BRENCHLEYENSIS .- The finest bright vermihon-scarlet Gladiolus for general effect in cultivation. Good sonod bulbs, 15. per dozen, 55. per

MIXED HYBRID GLADIOLI, from the finest named sorts, 25. per dozen, 105. per 100, 80s.

HYBRID SEEDLING GLADIOLI .- Finest

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NAMED GLADIOLI. — Best Exhibition varieties, twelve very fine, 32, twelve extra fine, 102. Larger collections see Catalogue.

Above Gladiolf all Carriage Free.

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All varieties of VEGETABLE SEEDS supplied in 2d.

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0000A-NUT FIBRE REFUSE.

4d. per bushel; 100 for 2s.; fruck (loose, about 2 toes),

LIGHT BROWN FIBROUS PART, 2s. 6d. per sack;

Sacks, 29.; sacks, 4d. each.

BLACK FIRROUS FART, 5: per sack, 5 sacks 222.; sacks,

BLACK FIBROUS PEAT, 55, per such, 5 state, 4d. each.

COARSE SILVER SAND, 1s. od. per bushel; 15st. per half
ton, 65c. per ton; 1a 2 bushel bags, 4d. each.

VELLOW FIBROUS LOAM, PEAT-MOULD, and LEAFMOULD, 1s. per bushel
SPHAGNUM MOSS, 8s. 6d. per sack.

BACCO CLOTH, RUSSIA MATS, &c. Write for Free
Price LIST.—H. G. SMYTH, 2s. Goldsmith's Street,
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COCOA-NUT FIBRE REFUSE.

best quality, as supplied to the principal Nuscrymen and Nobility, 1s. per Bag; 15 Bags, 14s; 30 Bags, 25s, sent to all parts; Trucklond, 25s, free to vall. Best LOAM and PAAT, A. FOULON, 32, St. Mary Axe, London, E.C.

COCOA-NUT FIBRE REFUSE, newly made, as supplied to the Royal Horticultural Society and principal Nurserymen in England, in sacks at 12, 3d, each, or 13 cocks at 15, 3d, each, or 15, and 15,



SHARPE'S PROLIFIC

A magnificent White Wrinkled Marrow; height 2 to 21/2 feet; pods in pairs; long, straight, and well filled. Flavour excellent. As a Second Early Wrinkled Pea, there is nothing to equal much heavier cropper than that variety, and for Market Garden purposes very far superior to it.

Sample and Price on application.

CHARLES SHARPE AND CO., SEED MERCHANTS, SLEAFORD.

POTATOS—SNOWDROP (Perkins).

The Finest Second Early White Kidney in Cultivation.

Price 3s. per peck; 10s. per Bushel.

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THURSDAY NEXT.—(Sale No. 6620.)

ANCEPS. LÆLIA

NEW WHITE TYPE.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, on THURSDAY NEXT, March 20, at half-past 12 o'Clock precisely, by order of Mr. F. SANDER, St. Albans, a grand importation of LÆLIA ANCEPS, new white type, mostly in enormous masses, some with bulbs 7 inches long, and the specimen up to 250 bulbs each. It is a very beautiful variety, with large flowers, as many as six were seen on a spike, petals very broad, and the inside of lip with purple veins, and two crimson cide blotches. Also mony other with blockhilds. side blotches. Also many other valuable Orchids.

On view morning of Sale, and Catalogues had.

AUCTION ROOMS AND OFFICES, 38, KING STREET, COVENT GARDEN, LONDON, W.C.

12-oz. Sample Packets, free by post, 12 stamps.

FIBROUS PEAT for ORCHIDS, &c.—
BROWN FIBROUS PEAT, best quality for Orchids,
Stove Plants, &c., £66s, per Truck. BLACK FIBROUS PEAT,
For Rhododendros, Azaleas, Heaths, American Plant Beds, 15s,
per ton per Truck. Sample Bag, 5st.; 5 Bags, 2z. 6d; 1: nBags,
45t. Bigs included. Fresh SFHAGNUM, no. 6d, per Bag.
SLIVER SAYD, Coarse or Fine, 5st. per Truck of 4 tons.
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ORCHID PEAT, specially selected and prepared, as supplied to the heading Trade and partner grower. Good source Peat for Healts, Ferrs, Greenhate Plants, &c., supplied in any quantity from Truckloads to a few Busbels. Price List free.

CARDEN REQUISITES as supplied to the Royal Gardens. Cocon-Nut Film Retuce, 1st, 9st, per sack: 10 for 1st, 1st for 1st, 3st for 1st for 1st for 1st, 3st for 1st f

MEREDITH'S VINE and GENERAL PLANT MANURE.

Manufactured and used by Joseph Meredith, when at the Vineyard, Garston.—Great International Horticultural Exhibition held at Hamburg. The Massive Silver Cup, given by Her Most Graceous Majesty Queen Victoria, for the best Specumens of Granes, was awarded to Joseph Meredith. Also many other Gold Mecals, both on the Continent and in the United Kingdom. The above successed kargely attributable to the use of this investigation of the Continent and in the United Kingdom. The above successed kargely attributable to the use of this investigation of the Continent and in the United Kingdom. Price—Canisters, II.; Sealed Bags, 21, 31, 6d., 6s. 6d., to 6d. 4n. 188. 6d. So Le Agent—JAMES MEREDITH, Seedsman, 126, Bridge Street, Warrington.

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For Beautiful Flowers and Fruits USE CHURR ROUND AND CO'S PATENT

COCOA-NUT FIBRE REFUSE By CHUBB'S PATENT PROCESS,

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As supplied to all the Royal Gardens and Principal

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our works, we hold the first the prince of Wales. "The Gardens, Sandrigham, February 23, 1883.—I must say your Coan

Nut Fibre Refuse is far superior to any I have ever tried; in

fact, it it is simply perfection; and the use of your Fibre for so

many purposes in Horticulture is a thorough boon. Make what

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Mushrooms, Bedding-out Plants, &c.

DESTROYS ALL SUIGS AND INSECTS.

DESTROYS ALL SLUGS AND INSECTS. An elegant Bordering to Flower Beds. Combines warmth nd cleanliness with valuable antiseptic and deodorising

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Moistens in Heat. Holds Heat in Cold Weathers.

Terms, strictly cash with order. Prices as follows:—Sacks, 1s. 66. each; in seaks, 1s.; is sacks, 1s.; os sacks, 2s. 64. each; in seaks, 1s.; is sacks, 1s.; os sacks, 2s.; of sacks, 2s. nufacturers, CHUBB, ROUND & CO., Fibre Works, West Ferry Road, Millwalf, London, E.

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ASSOCIATION is the cheepest and best House in the
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BEST YELLOW BETCHWORTH LOAM, 1s. per bushel.
LEAF MOULD, 1s. 6d, per bushel; 1cd, 6d, per bushel;
LEAF MOULD, 1s. 6d, per bushel;
SPHAGNUM MOSS, 7s. 6d, per bushel.
SPHAGNUM MOSS, 7s. 6d, per bushel.
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Our speciality, TOBACCO CLOTH and PAPER.
Universal MANURE. The best yet offered—a very powerful
FERLYUAR OLD AND AS IMPORTED.

fertiliser; 12:, per cwt.

PERUVIAN GUANO, as imported, 185; per cwt.; 56 lb.,
125; 7 lb., 2z. 6d. All bags ad. each.

The HORTICULTURAL SUPPLY ASSOCIATION,
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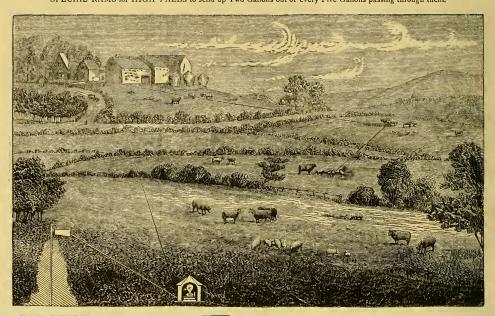
JOHN BLAKE' RAULIC RAMS.

FOR RAISING WATER FOR THE SUPPLY OF

TOWNS, VILLAGES, IRRIGATION, RAILWAY STATIONS, MANSIONS, FOUNTAINS, and FARMS.

No Cost for Motive-Power, which is obtained from a Stream of Water passing through the Rams, NO OILING OR PACKING REQUIRED.

Made in Sizes to Raise from 300 to 500,000 Gallons per day. Will Force to a Height of 1500 feet. SPECIAL RAMS for HIGH FALLS to send up Two Gallons out of every Five Gallons passing through them,



BLAKE'S PATENT HYDRAULIC RAM, worked by water, rising from a 2-inch bors-hole, 90 fest deep, and forcing 3600 gallons per day through 400 yards of delivery pipe to a cistern at the house, at an elevation of 150 feet, from which cistern the water is gravitated to several drinking troughs in the farmyard and fields, the last trough being at the lowest level.

RECENT AND OTHER TESTIMONIALS.

From Mr. A. J. RUTHERFORD, Agent to C. E. H. Bolkoov, Eq. Lettet Office, Marton Hall, Middletorough, Sptember 26, 285,—"Dear Six,—I am glad to say that the Rams von put down on the Hambledon Estate, for Mr. C. F. H. Bolkoow, zare working very well. You undertook, with 16 gallons per minute, to send up 1500 gallons a day, and with enough water to work the Rams as full power, 2000 gallons a day, and with enough water to work the Rams as full power, 2000 gallons per day are sent up to a height of nearly 400 feet. They made a clear start and have gone well since."

The Delivery Fig., in the above case, is 5000 feet in length.

From Mr. HENNY ROBINSON. Engineers to the Succeptor District Waterworks Co., September 10, 1000 feet of the start of the supply of Discreptible of the two Hydradiic Rams we have fixed by your instructions for the supply of Discreptible of the two Hydradiic Rams we have fixed by your fixed to the bolt of 65 feet, but on esting them 1 am convinced that 50,000 gallons is not the limit of their power, whilst the quantity of waste water used in driving them is not equal to half the capacity of the 6-inch pipe by which they are feed, and I am inclined to the belief that a more sumple and deficient pump cannot be found."

From Capital TOWN-SHEND, Wincham, February 10, 1877—" In answer to your inquiry.

them is not squal to half the capacity of the 6-inch pipe by which they are fed, and I am inclined to the belief that a more sample and efficient pump cannot he found." In an architecture of the belief that a more sample and efficient pump cannot he found." In answer to your inquiry I am glad to say the Hydraulic Ram you seek me in Novembert, 1875, is working exceedingly am glad to say the Hydraulic Ram you seek me in Novembert, 1875, is working exceedingly during this winter, forcing up water through a delivery pipe 600 yards long at the rate of 80,000 gallons per day, although you only promised 60,000."

From J. SPENDER CLAY, ESG, Ford Manor, Lingfield, Surrey, August 9, 1880.—"In reply to your letter of inquiry I am glad to be able to asy that the two Hydraulic Rams which you fixed here are working satisfactorily, and that out of 12 gallons 3 quarts per minute, the maximum yell of the spring, 48,185, and 1875, and 1875,

From HORATIO R. B. PEILE, Ed., Commissioner to Six Michael Shaw Stewart, Bart, Mansion House, Gerencé, Aguett a., 1833.—"I am glad to any the Ram you fixed at Caste Farm in November last for Six Michael Robert Shaw Stewart, Bart, continues a great success. The smallness of the driving water—3½ gallons per minute—in sont more wonderful than the large proportion of water it sends up. v1z., 720 gallons per day, through about 400 yards of delivery pipe, to an elevation of 75 feet."

From FRED. J. TURNER, Esq., Agent to His Grace the Duke of Portland, Man. Woodhours, August 20, 1881.—" Dear Sir.—I have much pleasure in stating that the Hydr Rams which you rected last year for His Grace the Duke of Portland, at Lyadhurst, near Man and at Skeldon, Ayrshire, are working very well, and they are most satisfactory in every way

and at Section, Ayrasine, are working very weil, and they are most astistactory in every way.

From Mr. E. W. STREETER, F.R.G.S., Diamond Merchant, Bond Street, London, and
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From Sir A. WOODIWISS, The Pastures, Derby, January 15, 1883.—"Dear Sir,—In reply to your enquiry, I have much pleasure in informing you that the Hydraulic Ram you supplied and fixed for me in July last is working as satisfactorily as could be wished, and has fully realised my expectations, and I have no hesitation in saying it is a decided success."

reasses my expectations, and I nave no heatation in saying it is a decided success."

From Sir ROBERT MENZIES, Bart. of Meuzies, Rannoch Lodge, Rannoch Lodge and Camesurich, two houses three quarters of a mile apart, is a complete success. The extreme distance the water is carried as 3/f, mile, and it is raised fully not obet, and though the elevations of the houses are different, there is a regular supply of y quarts per minute to the properties of the prop

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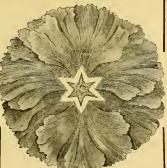
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THE QUEEN'S SEEDSMEN. READING, BERKS.



THE

Gardeners' Chronicle.

SATURDAY, MARCH 15, 1884.

LAWNS.

A MONGST the numerous things in a representative English garden that present themselves to those who hail from lands of sunnier skies than we are favoured with, there are none that attract greater attention than our green grass, which soil and climate alike favour. Respecting the latter, which we so often grumble at for its fickle behaviour, it is well to bear in mind that to its changefulness we owe the perpetual greenness of our lawns, the long spells of uninterrupted brightness in the sunnier climes we frequently are inclined to covet being fatal to the justly-prized verdure which is undoubtedly the first feature in a garden, as in its absence the brightest flowers are like pearls in an unworthy setting. Still, with the favourable conditions of alternate sun and shower, with the soil suited to the growth of grass, our lawns are still far from being in all cases what they should or would be, if their construction and after-treatment were not at fault.

Confining the question to the means requisite to secure good permanent grass, it is all but needless to add that in making a lawn, as in all other things connected with the construction of a garden, local circumstances necessarily influence the proceedings. A course that would be expedient to follow in one place would be wholly unsuited in another. Whether turning or sowing be adopted, if a satisfactory lasting green sward is looked for, there must be a sufficient depth of soil, of fair quality, neither too dry nor too wet. In the southern counties, where the rainfall is so much less than in the north, when the subsoil is of a sandy or gravelly nature, unless there is sufficient fairly holding top soil the grass is sure to burn in dry sum-A depth of 15 inches is not more than needful to avoid this, and in making a lawn where a dry bottom such as above-named exists, and the surface-soil is insufficient, enough of a suitable description should be added to bring it up to the required depth; the cost incurred will in the end be found to have been well spent money. The patchy, unsightly appearance often seen in lawns, where the grass appearance the stein in places is poor and weedy, or burns in dry weather, is frequently traceable to faulty con-struction. Where inequalities of the surface bave required removal, sufficient of the undersurface is frequently not removed to allow the needful depth of top soil, thus entailing the mischief named. The effects of this kind of defective work are oftenest seen where the subsoil is of a clayey nature, for although grass does not burn trayey nature, for animogn glass does not so readily on a cool bottom of this nature, still it must have enough depth of soil to sustain the roots and admit their descending low enough in search of the moisture required during spells of dry weather.

On the other hand, there is frequently too much moisture present in land that has to be converted to a lawn, and with some who happen to be engaged in such work there is often a reluctance to drain, if it can be avoided, on account of the subsidence that not unusually takes place afterwards, the end of which is not seen the last of for years, but of which there is not the slightest reason to have misgivings if only sufficient care be taken to ram the material in properly as the work of filling the drains proceeds. In draining a lawn, as in the case of land for any other purpose, it is necessary to be guided by the nature of the soil, and also to bear in mind the particular purpose required. deep, 5 or 6 feet drains that sometimes find advocates, filled up with solid earth, and that can only draw off the water slowly, are all but useless in a lawn where the land is at all of a retentive nature, and the object is to get quit of the water with the least delay, so as to make the surface fit to walk on in the least possible time after a heavy rainfall. With this intention, whatever depth the character of the land may require the drains to be, they should be filled up over the pipes with some kind of porous material to within a foot or 15 inches of the surface, or, in some cases, nearer, so as to take the water off readily. The advantages in lawn draining, where trees are present, of filling in over the pipes with rubble, ballast, clinkers, or similar open material, are twofold, as in addition to its accelerating the passage of the water it enables the drains to act even if the roots, as they usually do, get into the pipes so as to choke them. In heavy retentive soil it is mistaken economy to underdo the work by placing the drains too far asunder; if 15 feet apart they will, as a matter of course, dry the ground so much quicker than if a greater distance intervene.

SOWING .- In the important question of turfing or sowing, here again local circumstances will in each individual case decide. Where a lawn of considerable size is being made, sowing effects a great saving in expense, beyond which it has many advantages, not the least of which is that where the requisite judgment is brought to bear in selecting a mixture such as best suited to the nature of the soil the result will be more satisfactory than with turf, such as is procurable in most localities, for if the land has been properly prepared and effectually cleaned from weeds there is a certainty of an immunity from weeds and coarse grasses, such as have usually more or less to be contended with where turf is used. The idea that there needs be much waiting in getting a good close surface when sowing is adopted is a mistake; providing enough good seed of the right kinds is used, and the work collectively is done as it should be, an unexceptional surface will soon be the result. Again, where the nature of the land and the climate are such as to favour burning in dry summers, sowing has much to recommend it, as grasses which can be selected naturally strike deeper into the soil than are procurable in turf from cultivated land which is always sown with a view to pasturage, rather than with any intention of its being used for the purpose in question. But when sowing is determined on care should be taken to give time for all the seeds of the worst kinds of weeds, such as Docks and Plantains, that are near enough the surface to admit of their vegetating, to make their appearance, and be destroyed. By this means future hand-weeding, which otherwise would be necessary, will be avoided. This is a matter of no slight importance, as the getting out of these and similar pests necessarily entails the disturbance of the young grass, which can ill afford to have its roots interfered with. As to the time of sowing, there is little to choose between the latter end of March and the early part of September. Much depends on the un-foreseen in regard to the weather; the rains usually looked for about these periods are requisite to get the seed to vegetate evenly.

The weight of seed required per acre necessarily depends on the character of the land in its needing a greater or less proportion of heavy or light seeded grasses. Where turfing is decided on the best will invariably be found the cheapest. A good clean article, free from weeds and coar c grasses, is cheaper at the top

figure of its worth than weedy indifferent material is, if obtainable for nothing, as more than the first cost will have to be expended in after-weeding.

TURFING. — When possible turf should always be laid in autumn after the ground has been well moistened by the rains we generally get then, as when carried out at this season the roots have time to take hold before winter; the next best time is in the winter—early enough to avoid the watering that usually has to be resorted to where the work is done in spring. When deferred to spring the ground should be well watered before the turf is laid, giving it a good soaking immediately after, and mulching the surface over with an inch of fine soil, which latter in itsell is worth two or three waterings, by preventing evaporation and encouraging growth. The best course in the way of aftertreatment is not to mow oftener through the ensuing summer than needful to prevent an untidy appearance, not to cut the grass too close, and to do the work with the scythe, dispensing for the first season with the mowing machine.

RENOVATING OLD LAWNS .- In the matter of old lawns, there are many to be met with that are not so good as they once were, and that cannot rightly be described as an ornament to the respective gardens in which they should play no inconspicuous part. The soil in a lawn that has to support the grass that is constantly close cut, in time becomes so poor and exhausted that it cannot keep the crop it is intended to sustain alive, which in dry seasons succumbs, and its place is taken up by weeds and Daisies. This kind of exhaustion is well understood and usually provided against in the case of other things except lawns, which are often subjected to this impoverishing proeess for scores of years without the thought of ever giving them assistance, whereas if an inch or two of fresh loam, free from the seeds of weeds, with a couple of hundredweight of fresh lime added to each cartload, were applied occasionally in the shape of a top-dressing, the con-dition in question would be avoided. Many old lawns are reduced to such a state by the neglect described that they are beyond recovery except by digging over and subjecting the soil to a thorough cleaning and resowing—an opera-tion that need not be costly providing the right course is adopted.

As to the way in which lawns have been disfigured by making croquet or lawn tennis spaces on them, since these games have come into fashion, all that can be said is that where the ground slopes naturally, so that for the games in question one of these dead level deformities has to be made, as they often are, in a prominent position, the effect is so tar hideous as to completely destroy the natural appearance, which is the greatest charm in any garden.



CALOPOGON MULTIFLORUS, Lin:ll.

This has been recently imported by Mr. B. S. Williams, our excellent orchidic patriarch. The fine slender peduncle at hand bears five small lovely flowers, which are comparable to those of a diminished Bletia verecunda. They are of the finest amethyst-purple. The stalk of the lip has on each side at the base an auricle, and on the broad, irregularly square, retuse, emarginate, anterior blade there is at the base a rich tuft of hairy lamellæ (De Bary's "Zotten"), golden-yellow, often purplish at the base; and before these are some purple calli. It is a lovely gem, and I think it has not been seen alive before in Europe in flower. H. G. Rekbb, f.

DENDROBIUM NOBILE (Lindl.) var. ALBA, n. var.

A very pretty variety, kindly forwarded by our orchidic Crossus, Mr. W. Lee, Downside, Leatherhead. It has very pallid purple edges to the sepals and petals, a very pallid purple base and tip of the lip, and a dark purple auther sitting on the green column. It comes very near to Mr. J. Day's favourite variety. II. G. &chb. f.

THE AMARYLLIS AT CHELSEA.

THE recent fine weather has had the effect of pushing forward the Amaryllis bloom in Messrs. Vencu's nursery at an astonishing rate. About the end of January the bulbs were potted, being then in their dry and dormant condition. In four weeks a number of choice varieties were in flower, and in two or three weeks more the general collection has, as it were, burst at once into full beauty. The principal feature in this large collection, and in which most interest centres, is the large number of seedling forms. These become more numerous year by year, and it is needless to say that the quality of the blooms is better this year than it has ever been before. certain to be the case, considering that as soon as a flower has been raised possessing all the requisite properties in a more highly developed state than any obtained heretofore, it is at once used as a seed or pollen-bearing parent. A large proportion of the best seedlings raised in previous years have been sent to the Royal Horticultural and Botanic Societies for certificates, and since the first hybrid form was certificated, fifteen years ago, no less than thirty-nine First-class Certificates have been obtained by the Messrs, Veitch. This, of course, does not represent all the varieties that have been raised worthy of certificates. Every day during the time the seedlings are opening their flowers to the light some choice variety or varieties may be singled out as worthy of the highest awards given to seedlings; but if they are not in good condition at the time the meetings are held they are not exhibited. Last year there was a specially fine seedling form in flower about two weeks before the first show in March. This year again the same thing occurred. The variety in question is not less but more valuable for its early flowering; owing to this babit, however, it fails to obtain a certificate. Almost the very first seedling to bloom this year about the end of February we noted it as first-rate and worthy of a certificate; but, of course, it could not obtain one, as it would be over by the first meeting of the Royal Horticultural Society in March.

It is to be observed that the constitution of the plants has not deteriorated at all, as the form, colour, and quality of the flowers have been so remarkably im-proved. Indeed, it is quite safe to say that the plants have never before been so vigorous as they are this year. The reason of this is not far to seek. If Messrs. Veitch bad continued to cross and intercross their own seedlings only, the vigour of constitution would not have been maintained. They have not done this, but have procured more vigorous constitutioned varieties even than their own seedlings, which have had a very marked effect. Empress of India, for instance, has given form, substance and colour to the seedlings; others have been obtained that produce six large well formed flowers on one umbel, and as many as sixteen from one bulb. The remarkably fine variety named Ne Plus Ultra, which obtained a First-class Certificate from the Royal Horticultural Society on the 11th, was raised from Macbeth × with Empress of India. It is quite of the pollen-parent type, but an improvement in form of that variety. Three more very fine varieties were exhibited with Ne Plus Ultra, and they were all from one seedpod. Horace was the seed-parent, the pollen-parent being Auber. The committee certificated General Graham, a very fine flower, of a crimson colour with a greenish band in the centre of the petals. For our part we thought General Gordon the better flower of the two. The lower petal was not quite so well formed, but the greenish band in General Graham was replaced in this by an ivory. white one, with a very slight tinge of green at the base, William Goldring, from the same cross, is a well formed flower of great substance, crimson-scarlet, with broad greenish-white bands at the base of the segments. The colour is broken up in lines and spots on each side of the bands. We may be over-sanguine, but we should also place this in a first-class position.

The best seedling forms in flower on the 11th in the nursery were Pickwick, a large finely-formed flower, 7 inches across, the petals densely veined and spotted with crimson, showing a creamy ground on the lower petals, also densely spotted. Minerva, another large flower of a delicate purplish-rose colour; the petals very broad, forming a handsome flower. Serrano, a fine smooth flower of the Juoius type, the petals crimson at the base, shading off at the point to crimson-scatlet. Cerise is a very fine slightly modified form of Leopoldi. Polentia, a showy flower,

with scarcely any green at the base of the petals, which are of a luminous rosy-crimson. Corsair is a well-formed flower, of a decided scarlet tinge, with a creamy band down the centre of each petal. Dido, a decidedly improved form of Leopoldi, the creamywhite ground being richly overlaid with crimson. Ajax is not a Chelsea seedling, but it is a very distinct and handsome flower; the colour is crimson-scarlet veined with maroon, through which the yellowish-white ground shows in irregular flakes and blotches. Eldorado, a vigorous form of the crimson and scarlet shade of colour; the petals have a yellowish-green band in the centre; the tube is longer than usual, and the petals slightly reflex. Bayard, intense crimson-scarlet, the base of petals rich dark crimson, petals nicely formed with a creamy blotch at the top of the petaline segments. James Douglas was passing out of flower, but it maintains its first promise of goodness. Terence, light scarlet, large broad petals, with distict greenish centre. The general collection is now finely in flower, and will be at its best during the ensuing week.

DRINKSTONE PARK.

MANY of the Orchids for which this place is deservedly celebrated were in bloom at the time of our visit, which was soon after the middle of February, and they certainly presented a sight well worth going a long way to see. Drinkstone has long been dis tinguished on account of the successful cultivation of these remarkable plants, and its celebrity in this respect does not by any means diminish. giving the names, however, of some of the more remarkable species then in bloom, it may be worth while to give a few particulars regarding the place in general. It lies some 8 miles south-east from Bury St. Edmund's, and is the seat of T. H. Powell, Esq. The mansion or Hall is a large old-fashioned edifice, a large portion of its south front being covered by a magnificent specimen of the Magnolia grandiflora, not less than 40 feet in height, while other portions of its walls are covered with the finest varieties of climbing Roses and other suitable plants. The surrounding country, although somewhat flat, is well wooded, and the soil is a rich loam upon a substratum of gravel, and is consequently admirably suited to the development of the finer kinds of coniferous and other ornamental trees and shrubs, so that the park and grounds contain a fine and well selected assortment of such plants.

Conferous trees are sometimes considered as out of place in park scenery; this, however, does not hold good at Drinkstone, where Mr. Powell has displayed excellent taste in the way of improving the landscape and creating a really charming effect by so skillply blending the dressed grounds with the rich greensward of the park that it is not easy to tell where the one terminates or the other commences.

The park, which covers some 200 acres, including a fine lake over 8 acres in extent, contains also various large groups or clumps of such species the Sequoia gigantea, Taxodium sempervirens, Cedrus Deodara, Picea Douglasii, P. Pinsapo, &c., interspersed with groups of ornamental deciduous trees, producing a warm and very pleasing effect at all seasons of the year. Among species which are conspicuous in the grounds are fine well grown examples of Araucaria imbricata, some 30 feet high; Cedrus Deodara, 60 feet in height; Abies Pinsapo, 40 feet; and fine specimens of Ahies grandis, nobilis, and A. Nordmanniana, &c.; together with Ahies Albertiana or Mertensiana, a fine free growing species; also Libocedrus gigantca, Thuiopsis borealis, Thuia Lobbii, Juniperus recurva, Taxus adpressa, fine plants; with fine Golden Yews and equally fine examples of the various kinds of variegated Hollies, &c.

In addition to a unique fernery under glass, devoted to the culture of the exotic or tender species of these plants, there is also a fernery in the open air for hardy species. This is placed in a somewhat shady and suitable situation, and is formed principally of the roots of large trees. All the plants, like their more tender congeners under glass, succeed admirably; but we were hardly prepared to find in a sheltered corner of this department a fine Todea superha, thriving under the slight protection of a hand-glass, where it has been for several years.

Particular attention is here paid to early spring flowers, many of which, on account of the con-

tinuous mild weather, were in an unusually forward condition. Driokstone is also celebrated as a fruit growing establishment, more particularly as regards the Grape Vine: the weight and quality of the crops of Grapes which are annually produced here are very remarkable.

But we must now mention a few of the most striking Orchids at the present time in flower, and in the first place may be mentioned the Phalzeopsis-house, which is in close proximity to the residence of Mr. George Palmer, the intelligent gardener, and which is the first to attract attention. It is a span-roofed structure, originally used as an early forcing-house or pit, the larger roof facing the south, and even at the present season it is considered necessary to cover this with a single thickness of Haythorn netting in order to throw a slight shade upon the plants during sunshine.

Along the front of the structure is a chamber or pit over hot-water pipes to furnish bottom-heat, and over which most of the plants are suspended. The pipes are now covered by a strong iron grating, which is loosely covered with a few inches of tree leaves kept constantly moist, and through this medium the warmth from the pipes ascends into the house, the temperature of which is carefully regulated by the admission of external air, the ventilators being seldom, if ever, altogether closed. This arrangement appears to suit the plants admirably in all respects, and they have occupied this structure for some twelve months or more.

Most of the Phalænopsis are grown in very handsome cylindrical baskets, some 14 inches in diameter, by about r8 inches deep, and those baskets are all the work of Mr. Powell, who, in addition to his love for Orchids, and his knowledge of their re-quirements, as well as of horticultural pursuits in general, is also an amateur mechanic of no mean order. In these baskets were suspended some twenty or more fine plants of Phalænopsis Schilleriana, together with plants of P. amabilis and P. grandiflora. part of the plants were in full flower, but at the same time there are not a few to succeed them. The ground colour of the flowers was exceedingly pure, and at the same time of a deeper hue than they are generally to be seen in the neighbourhood of London and other towns. This may possibly be ascribed to the more pure condition of the country air. The plants were all pictures of health, without any indications of "spot," or other drawback, while on many of the spikes might be counted as many as forty fully expanded blooms, emitting a most delicious perfume.
The house contained also fine plants of P. Luddemanniana and P. leuchorrhoda, together with the pretty little Angræcum citratum with its numerous spikes of pure white flowers, also grand specimens of Dendrobium Dalhousianum, Oncidium Lanceanum, Saccolabium Blumei majus, &c.

The plant stove is a span-roofed structure, about 30 feet by 15 feet, and is in a great measure devoted to Orchids, which are chiefly suspended from the roof, under which are grown large specimens of fine-foliage as well as flowering stove plants, a portion of the brick stage at one end of the house being devoted to some very fine specimens of Vandas, Aërides, Saccolabiums, Angræcums, Cypripediums, &c., and we noticed also two remarkably fine specimens of the old Phaius Wallichii in full flower, also Phaius grandiflorus, together with Angræcum sesquipedale, very fine; while suspended from the roof are a fine selection of the hest varieties of Dendrobium just coming into flower, which by their free growth and healthy appearance show how much they appear to be at home in the situation which has been assigned to them. There are also suspended along with them some very fine Acrides and Saccolabiums, particularly some large specimens of S. ampul-laceum majus. This house contains some remrk-ably handsome and healthyplants of Adiatuth Farleyense in baskets, suspended along with the

The next division is what is known as the Odonto-glossum-house, and is also span-roofed, with an open water-tank under the central stage. This house presented an extraordinary display of floral beauty, although the plants were not all in full flower, but were all fast approaching that condition, and giving promise of an abundant and long-continued supply of charming flowers, if we may judge by the healthy and robust appearance of the plants, and the numerous unexpanded blooms. Of those at that time in flower, Odontoglossum Alexandere and O. Pescatorei were

remarkably fine, and the same may be said as regards O. cirrosum, O. Halli, O. triumphans, O. pulchellum, O. tripudians, O. cordatum, O. roseum, and O. Rossi majus rubescens, the last-named a remarkably fine specimen (see fig. 63, p. 345). There were also in fine flower in this house plants of Coelogyne cristata, Zygopetalum Mackayi, Pilumna fragrans, and there were in full flower several fine pots of the old Cypripedium insigne, which, grown and flowered as done here, is hy no means to be despised. We also noticed some fine pans of the best Masdevallias in full bloom, while M. tovarensis was just over, but had every appearance of having been fine. Several large masses of Pleione were fast pushing up their growths, together with a very fine specimen of Maxillaria grandiflora in full flower, along with Epidendrum vitellinum majus. Among species not yet in flower, but fast approaching that condition and giving every promise of being fine, were Odontoglossum madrense, O. nebulosum, O. Lindleyanum, O. gloriosum, O. pardinum, O. Cervantesii, O. maculatum, O. citrosmum, &c., with Oncidium concolor, Marshalli, cucullatum, and incurvum, Mesospinidium sanguioeum and vulcanicum. There were also here several Dendrobiums, &c., in a state of rest. The mean temperature of the house, we were informed, does not exceed 48° in summer; of course it may exceed this, but the low temperature of the structure does not prevent such varieties as D. nobile, D. Wardianum, D. crassinode, D. heterocarpum, D. Devonianum, &c., from pushing their blooms freely and strong. The next house or division is devoted chiefly to Cattleyas, and C. Trianæ in great variety alone renders this structure very gay. But in addition to the Cattleyas there were also in bloom large specimens of Cymbidium ehurneum, Lælia anceps, with twenty or more plants of Lycaste Skinneri in almost as many varieties, many fine Dendrobiums in pots, as well as in baskets, such as nobile, thyrsiflorum, Wardianum, crassinode, heterocarpum, crepidatum, Ainsworthii, chrysanthum, &c.; also Sophronitis grandiflora, Cypripedium Argus, and C. villosum. Several plants of Odontoglossum vexillarium were conspicuous on account of their robust and healthy condition. In addition to the species mentioned this house also contained many other varieties of orchidaceous plants not in flower, and to which it may not be necessary to further

The greenhouse is furnished with a fine collection of well grown specimens of the best varieties of hard-wooded and other greenhouse plants, among which we observed pans of Disa grandiflora in fine condition.

The fernery has been mentioned, but it may be further stated that it is a lofty lean-to structure, with a northern aspect, and contains many fine tree and other Ferns, including many Todeas and other filmy varieties. All are planted out, or if any are retained in pots or tubs the same are entirely concealed by various species of Selaginella.

The high back wall, as well as the front and end walls, are cased with virgin cork, and so enduring is this material when used for such purposes that although it has been done for upwards of ten years, no symptoms of decay are perceptible, while Sclaginellas of all kinds cling fondly to it, as does also the pretty little Nertera depressa, which was in full flower; the flowers, it is true, are small and inconspicuous, but will soon be changed into its bright scarlet fruit, and will then present a very pretty appearance.

The gardens and grounds at Drinkstone Fark are not extensive when compared with some garden establishments in this county, but they contain a great deal; indeed, they are brimful of interest, and, taken altogether, reflect much credit upon the taste of the proprietor, as well as upon the skill and industry of his gardener, Mr. George Palmer, to whom we are greatly indebted for his kindness in showing us over, as well as pointing out the many interesting objects contained in the place. P. Grieve, Burry St. Edmunds.

KNIPHOFIA FOLIOSA.—This is closely allied to the ordinary Tritomas of the garden, but is more robust, has broader leaves, and the deose spikes of flowers are of a yellow colour, with very long stamens. It is a native of Abyssinia, and is figured in the Estancial Magazine, 1884, t. 6742, from the garden of H. J. Elwes, Esq.

THE PROPAGATOR.

A CUTTING FRAME: ITS CONSTRUCTION AND MANAGEMENT —The spring is the best time for the propagation of most plants, and at present many gardeoers are at their wits' end to know how to get on with the work fast enough. Year after year numbers of them suffer trouble and disappointment for the want of that first necessity to a propagator, a cutting-frame, and yet it can be simply and easily arranged in any warm house in the following manner:—

The case or frame should be made about 6 feet in length, 3 feet in width, and $2\frac{1}{2}$ feet in depth, or, rather, its highest points should be $2\frac{1}{2}$ feet from the base of the case (or of any modified dimensions to suit convenient places). It should be made in the shape of a half or three-quarter span—i.e., both sides of the case should be made to slope upwards to the centre of the case, and the slope to commence from half or three-quarters of the depth of its sides. If the slopes are not made la equal degrees on both sides it is better to make the longer slope in front. A suitable piece of wood should be fixed into, and thus run across from, one apex of the case to the other—i.e., from end to end—forming the ridge.

Pieces of wood a quarter of an inch square, and cut into lengths of a foot, should be fixed with small nails along the outer edge of the top of the two long sides of the frame, to prevent the panes of glass, which will form the roofing, from slipping off. A space of about half an inch must be left between each piece of wood, to allow the condensed moisture from the glass a free passage.

The covering or roofing of the frame should be of pieces of glass, each about 8 inches wide and of the length requisite to reach the wooden rail running across the top of the case. Thin plate-glass should be used if possible, although ordinary glass can be employed. The bottom of the case must be formed of slates, resting on a framework sufficiently strong to bear them, and although no apertures should be left between the slates, quarter-inch holes should be drilled through them to allow the heat to pass into the cocoa-nut fibre, which is placed 3 inches deep inside the case. A frame so constructed should be put in a Cucumber-house or stove in such a position as to have two or three hot-water pipes running beneath it. The case should he about a foot higher than When finished it will resemble a small the pipes. house or frame, but having loose glasses in place of

When the case has been filled with cuttings the front row of glasses should be removed early each morning for two hours, and the cuttings that are dry should be watered with a finely-spouted pot, while all of them should be gently watered overhead with a finerosed pot to wash off the condensed vapour that has gathered upon them the night before.

If this be neglected a large number of the cuttings will not arrive at maturity. The cocca-out fibre in the bottom of the case should be well mixed together and watered twice in a week, and the glasses on the frame should be washed weekly. This will prevent the former becoming a concrete mass, and will allow the condensed vapour to pass freely off the latter. The old cocca-nut fibre in the case should be exchanged for new at given intervals.

Experience has shown that a propagator can produce a larger number of plants in a frame constructed and worked on the principles we have laid down than in any other we know of. In it the cuttings root quicker, and few of them die from the continual drip which hangs to and drops from " lights."

After the construction of a cutting frame it is most important to have all the plants intended for cutting purposes brought into the propagating-house. A part of the house should, if possible, be set apart for this purpose and kept at an equable temperature, and all the plants should be placed on a moderate bottom-heat. If the latter instruction is followed it will oot only ripeo the old plants but will also be a stimulus to growth in the cuttings taken therefrom.

It is a fact worthy of notice, that cuttings taken off plants previously prepared by being placed in the same house as the cutting case is in, will strike more freely than those taken from old plants not so prepared; and in the case of things difficult to propagate it is absolutely necessary to acclimatise the plants before taking the cuttings. As a rule, cuttings

will strike best in a cutting-pot; there are, however, some exceptions, such, for instance, as the cuttings of Dracenas, Ficus, Aralias, and such-like plants, and these will strike better and quicker when they are inserted in the moist cocoa-nut fibre in the bottom of the case. Many other plants also which are very stubborn in pots will root under these conditions.

In conclusion we may point out that the cuttings when they have been removed from the frame and potted-up, must not under any circumstances be taken from the propagating house, but should be allowed to remain in order to gradually harden and strengthen them. T. O.

The Henbageous Honden.

SCILLA SIBIRICA .- Your correspondent, " Quercus," p. 310, is evidently in a fog with Squills. I presume he refers to bifolia, and not biflora, because that name is untenable, as he will see if he ex-amines the racemes of flowers. My experience of this is very favourable; it increases freely by offsets when planted in light sandy soil well enriched with manure. S. sibirica is rather slow to increase; if in health the bulbs develope to a good size, and ultimately split up into several. The best way to get up a large stock of this is by seed, which, as a rule, is produced freely enough, and it should be sown as soon as ripe in a sunny position, about 2 inches deep, sprinkling a little sharp sand with the seed. "Quercus" evidently regards Chionodoxa as a "form " of Scilla. How does he prove this? Mr. Baker, if I mistake not, is the authority for the genus Chionodoxa, and I feel certain that if these charming plants could have been classed with the Scillas, Mr. Baker would have been the last to have manufactured a fresh name for them [Boissier was the first to establish the genus. ED.]. Further, I am bound to say C. Luciliæ is worthy of the beautiful designation given to it. Probably if "Quercus" could see broad masses of this gem under natural conditions he would concur with what he now regards as a " pretentious "appellation. Granted that many have expressed disappointment about Chionodoxa, but, as I have repeatedly stated, I believe this is due to the fact that the bulbs bitherto distributed have not yet arrived at their full development, and consequently do not produce such well-flowered spikes as they will do in a few years. It delights in a well drained position in rich light soil, and is as hardy as possible. Daf.

SEEDLING HEPATICAS.—At p. 283 you have an article about Hepaticas, in which the writer says he enver saw a seedling near the plant. Now I have a lot of blue and red Hepaticas in a border under a very high wall, and there is one large plant of blue Hepatica in full bloom on the top of the wall, evidently carried there as a seed by a bird. I never saw one so grown before. Charles Tower, Bathford.

THE LEUCOJUMS.—It is curious to note how our old-fashioned plants become forgotten and overlooked; and, when their names occur in florists' catalogues, how difficult it is obtain the true plant when you order it. This is especially true with regard to the Leucojums—the "bulbous Violets" of 200 years ago, and the Snowflakes of our day. Old Father Parkinson wrote in his Paradisus, c. x.:—"The bulbous Violet is a plant that doth challenge a place next unto the Daffodils, as most oearly partaking with them, and a little with the Hyacioths. I must of necessity interpose them, and show their descriptions and differences, whereof some are early, of the first spring, others later, and some of the autumn." If et then gives:—

"1. Leucoium procox majus, the great early bulbous Violet, which hath one white flower, hanging down its head by a very small foot-stalk, made of six leaves of an equal length, every one whereof is tipped at the end with a small greenish yellow spot.

"2. L. bulbosum pracox minus, the lesser early bulbous Violet, bearing one small pendulous flower, consisting of three white leaves, which are small and pointed, standing on the outside, and having three other shorter leaves, which seem like a cup in the middle, being each of them round at the ends, and cut in the middle, making the form of a heart, with a green tip or spot at the broad end or edge." This plant, he says, came from Constantinople.

"3. L. bulbosum vernum minimum, the small bulbous Violet of the spring. This Leucoium sendeth up his small and long green leaves like hairs in autumn and before winter, which abide green until April, and then wither away quite, and about May there ariseth up a naked slender stalk, at the top whereof break forth two small white flowers, made of six leaves apiece, hanging down their heads, the three inner leaves being a little longer than the three outer, and a little reddish near the stalk, and very sweet. This came from Spain and Portugal.

"4, L. bullosum autumnale, the final autumn bulbous Violet. As the former smaller Leucoium sprang up with his leaves in autumn, so this, contrariwise, riseth up with his slender brownish stalk of flowers in autumn, before any green leaves appear, whereon stand two or three very small, snow-white, pendulous flowers, consisting of six leaves a-piece, a little reddish at the bottom of the flower, next unto the stalk, so like unto the former, that one would take them to be both one.

"5. L. majus bulbosum serotinum, the great late flowering bulbous Violet, with a flattish stalk, being thicker in the middle than at both edges, at the top whereof three or four flowers hanging down their heads, consisting of six leaves apiece, all of equal length and bigness, wholly white except that 'each leaf hath a green tip at the end of them.'"

Now of these, I is clearly L. vernum; 2 I cannot identify, but think it must be a Snowdrop, probably Galanthus plicatus; 3 I cannot make out, as I am not aware of any Leucojum from Spain or Portugal. [L. autumnale, L. grandiforum, and L. trichophylum are stated to be natives of Spain or Portugal. Eb.] Parkinson does not appear to have had much acquaintance with it, as he says it was so tender that "scarce one in a score sprange with me and would alike." 4 is our L. autumnale, and 5 is our L. sestivum.

We have a good many more varieties of the Leucojums now, but it has been difficult to make them all out, and to recover many of them from the wrong names and the oblivion into which they had fallen. Having, however, got the whole collection together, I submit the following notes and descriptions of them to your readers.

So far as I have at present made out, the Eoglish name of the bulbous Violet, which was clearly inappropriate, was changed by Curtis. In vol. ii. Eot. Mag., tab. 46, he says:—"The blossoms of Leucojum and Galanthus, or Snowdrop, are very similar at first sight, but differ very essentially when examined, the Snowdrop having, according to the Linozean description, a three-leaved octary, which is wanting in the Leucojum. The two genera, then, being very distinct, it becomes necessary to give them different names; we have accordingly bestowed on the Leucojum the name of Snowdlake, which, while it denotes its affinity to the Snowdrop, is not applicable to the meaning of Leucojum.

1. L. vernum, the spring Snowflake, is beautifully figured in Bot. Mag., plate 46, and still better in Reichenbach's Flor. Germ., No. 804. These two plates give us the typical flower, having the corolla segments of equal length, with a clear green spot on each, exactly like the Snowdrop. There is, however, another well marked and very beautiful variety, figured in Wooster's Alpine Plants, vol. i., plate 95, with a larger mass of leaves and larger flowers, the corolla having golden spots, and the interior of the flower a lovely golden hue. This plate was reproduced in the *Garden*, vol. vii., p. 156, accompanied by an interesting note on the Leucojums by the late Mr. Niven. The plants from which Wooster's figure was taken were supplied by Messrs. Backhouse, of Vork; I therefore wrote to ask if they still had this variety, and received half a dozen bulbs, all of this character. In all other respects the plant appeared to be the ordinary form of vernum, but this golden hue is so beautiful and distinctive that for our garden purposes I propose to distinguish it as L. vernum var. lutescens.

There is also a double form, L. vernum multiplex, which is exceedingly scarce, but which is in Mr. Loder's collection at Floore.

2. L. carpathicum.—This is also figured in the Botanical Magazine, pl. 1993. It has a much larger bulb than L. vernum, which has a bulb like a Snowdrop, whereas the bulb of carpathicum is more like a Daffodil, and its mode of increase is similar. The plant has, therefore, a thick tuft of leaves, and from amid these arises a curved stalk, which carries two flowers on slender peduncles. These flowers begin to show

almost as soon as they emerge from the soil, and continue to expand until the full height is reached, some 6 inches from the ground. The flowers are larger than those of vernum, and the spots a rich golden-yellow. The scapes are not always two-flowered, and sometimes you find single and twin flowered in the same clump, but generally it is two-flowered. The plant from which Curtis' plate was taken had been collected on the Carpathian Mountains. It is called by Curtis L. vernum, \$\textit{B}_{\text{carpathian}}\$ Mountains. It is called by Curtis L. vernum, \$\text{B}_{\text{carpathian}}\$ Spring Snowflake. Dean Herbert, writing twenty years later, referred to this plate in description, and said:—"I have not been able to obtain a sight of this plant. I see no reason for confounding it with the one-flowered green-spotted vernum. I believe that vernum does not ever produce a two-flowered scape, and that the L. præcox majus of Clusius is carpathicum" (Amaryflitáe,

3. L. fulchellum.—Taking the Snowflakes in order as they come into flower this comes next, as it blooms with the spring Snowflakes. This, again, is comparatively a scarce plant. Dean Herbert says he had never seen it. It resembles the summer Snowflakes, having a scape about 12 inches high, with three to seven flowers, narrower than any other, and less campanulate. It has the small green spot at the tips of the white perianth segments. Altogether it is a delicate looking and lovely flower. Niven says it has a more campanulate flower than æstivum; but herein I think he is wrong. It is more correctly described in Robinson's Alpine Flowers, as having the flowers smaller than æstivum, and the perianth segments more incurved, so that the perianth is somewhat ovoid, and its flower urcolate.

4. L. astivum forms the subject of plate 805 in

It had escaped my notice that we had two forms of assistum until Mr. Tyerman visited Brockhurst last summer, when he pointed out that we had abundance of Hernandezianum, and very few of the true assistum. I find this is frequently the case hereabouts. This variety has yellower green spots than the other. Mr. Niven does not name this variety, so I suppose he was not acquainted with it.

6. L. autumnale.—This I have, but have not yet seen it in bloom. It is figured in Reichenbach's Flor, Germ., No. 906. It has slender pink stalks, carrying three slender white flowers, pink at the base of the perianth, and with grass-like leaves—a delicate-looking and very pretty flower.

Mr. Potter, of York, tells me there is one other variety, L. hyemale, which is in the York Nurseries, Wm. Brockbank, Brockhurst, Didsbury.



FIG. 62.-THE SNOWFLAKE, LEUCOJUM VERNUM.

p. 331). Mr. Niven, writing in 1875 (Garden, vol. vii., p. 156), says there is a variety known by the title of carpathica, which to my mind is sufficiently distinct to rank as a species. Its bulb is twice the size of our plant, its stature considerably greater, and it frequently produces its flowers in pairs. It is rare in cultivation.

It is strange that so interesting a plant should not have attracted greater notice, but I have searched in vain for it in all the leading catalogues. One of our very first florist firms replied to my note that they had it, but on receiving bulbs from them I found they were only the ordinary vernum, with the green spots and single scapes. After trying in every likely quarter I at length obtained it in quantity from Messrs. James Dicksons of Chester, in whose nurseries I found they had it in quantity, but under the name L. vernum. It had been growing there for a long time and is, "without doubt, the true L. carpathicum.

Reichenbach's Flor. Germ., and it is well thus to refer to a standard illustration, as there are again two candidates for the name in our gardens. In this plate we have a scape with four flowers, and with the green spots, as in the typical L. vernum, figured on the same page. The flowers of æstivum are a little smaller, which is quite correct. This is a well-known plant, growing from 12 to 20 inches high, and blooming in May or June. It is one of our most lovely summer flowers, and is deliciously fragrant. It is said by Mr. Niven and others to be a British flower; but this is very doubtful, although it is to be found in moist meadows in Kent and some other counties.

5. L. Hernandezianum.—I have not been able to for August and any illustration of this variety. It was found by Dr. Herdandez in Majorca. Herbert says it differs from astivum in having flowers about half the size, and a more oblong germen. I believe this is far more common in Lancashire than the former one.

LEUCOJUM VERNUM.— I am under an impression that there are four varieties of Leucojum vernum in cultivation—1, L. vernum, L., from Germaoy; 2, L. vernum, fl.-pl.; 3, L. vernum var. carpathicum, Bth.; 4, a variety with yellow spots, similar to the Carpathian in colour, but only producing one flower on a stem, the strongest grower and largest of the four. The true species is by far the most beautiful of the lot, the bright green spots giving the flower a much more graceful appearance than the yellow-spotted varieties. While on the subject, may I ask if the small Leucojum trichophyllum, Brot., is yet cultivation? It was introduced in 1820, and figured in the Botanical Register, plate 544. Being a native of Barbary it is more tender than the others. Floore.

THE NORTHAMPTONSHIRE HORTICULTURAL SOCIETY'S SHOW will be held in Delapre Park on August 2 and 4.

ORCHIDS AT ST. ALBANS.

WHERE the spread of this extraordinary Orchid establishment will end it is impossible to say, so fast do the houses range themselves up one after the other. Already twelve fine structures are up, having an aggregate length of nearly 3000 feet, and varying in width from 14 feet to 31 feet, and, with the exception of the last three, filled with a valuable and healthy stock. Such a vast establishment, backed by the resources and great facilities which Messrs. F. Sander & Co. possess for importing good and new things, cannot fail to assist in giving stability to the trade in the luture, as it has done in strengthening the love of Orchids among amateurs in the past. The last two houses, each 100 feet in length, are designed for the reception of Phalænopsis and other plants requiring similar treatment. They, like all the other of the later built St. Albans houses, are built of Pitch Pine, not painted, but oiled and varnished. The effect of the varnished woodwork is very good, but its main object is to get rid of the inconvenience and expense periodical painting, and the pernicious influence which paint has on the plants for so long a time after each time it is freshly put on. A novel feature in the Phalænopsis-house is a hot-water tank, 18 inches in depth, hermetically sealed, which occupies the greater part of the surface of the middle bed; it will materially assist in keeping up an even temperature, and will not give off an inconvenient amount of moisture. Rain-water tanks also run on both sides the entire length of the house. Another noticeable feature, which would give many who are in search of it an idea of how to bottom ventilate a sunk house, is the sinking of little shafts at intervals on the outside of the house down to the ground line, where openings in the brickwork admit the air at the bottom of the house and directly among the four hot-water pipes. This is, no doubt, the proper way, and yet builders do not seem to understand the matter. Only last week we saw a well-built cold house spoilt by having the ventilators placed on a level with the plants.

On the upper part of the middle stage of the large Cattleya-house (240 feet by 31 feet) a rare sight is now to be found. On the right-hand side, the whole length of the house, many hundreds of blooms of the favourite Cattleya Percivaliana are arranged, and on the left an equally large number of the best forms of C. Trianæ of all shades and descriptions of marking; some with the large-frilled and yellow-veined lips of C. Mossiæ, some with crimson and yellow or mauve and orange lips, one like C. T. Russeliana, but superior to that variety, and many pure white and delicate pink forms, all the plants being well bloomed, and one of them having three spike of four flowers each, two of three and two of two flowers. Viewed from the entrance the effect is indescribable, the extraordinary length of the house allowing the eye to follow the flowers almost to the vanishing point. Arranged about the house are also some fine plants of Lælia elegans (some with 100 to 200 bulbs), wellflowered plants of Cattleya amethystoglossa, and Cœlogyne cristata, among the last being a new form, superior in size, shape, and substance, to the famed Chatsworth variety, and that is saying a great deal

In the Odontoglossum-houses another good innovation has been introduced; it consists of a \(^1_2\)-inch glass tube with holes drilled in it at about I foot apart. It runs down the middle of the house on the top of the middle bed and underneath the open woodwork stage; its object is to convey water along the whole length of the house, and taps are arranged so as to have the supply at the command of the operator. Such an arrangement must effect a great saving in labour over the old plan of syringing under the staging, &c., in summer, and at the same time must be more effectual. It is needless to say that a great show of fine blooms of remarkable size, form, and substance, are now as always to be lound among the 100,000 fine masses of O. Alexandræ which this firm possesses; at the present time, too, there are in the end of the house set apart for them the tarest and most beautiful batch of hybrid Odontoglossum sperhaps ever brought together. Many of these are quite new, and very lovely; to attempt to describe them would be u-eless. Among the new plants also is the lovely snow-white Odontoglossum Iruhyanum, a telling new Pescatorei, with flowers of a rich claretmanve, and a curious form of Odontoglossum with singularly undeveloped floral segments and labellum; this last is very interesting, as it may be a reversion to the normal form which existed ages ago, and from which have been evolved all those grand forms which

Prehid Notes and Hleanings.

DENDROBIUM MICANS ×.—This pretty hybrid is now io flower in Messrs. Veitch's nursery at Chelsea. The seed-bearing parent was D. Wardianum, the pollen parent, D. lituiflorum. The growths seem to be intermediate between the parents; the flowers greatly resemble a good form of D. lituiflorum; indeed, at first sight it might be taken for a good form of the pollen-bearing parent.

PHALMINOPSIS STUARTIANA.—This distinct and handsome species is well represented in Messrs. Veitch's musery; one large plant had a three-branched spike with twenty-flowers open. A similar plant had twenty-one flowers on a spike, but some of them had been removed. It seems in its style of plant and habit of growth to be most nearly related to P. Schilleriana, but lacking the peculiar flattened roots of that species. There are many small forms of it, all differing in the character of the flower and the peculiar spotting. 3. D.

CATTLEYA TRIANÆ VAR. EMILIÆ.-At Downside may now be seen a display of Cattleya Trianæ in flower which has rarely if ever been equalled. For some years past Mr. Lee has been collecting at high figures the most beautiful Trianæs he can obtain. Upon entering the Cattleya-house the eye is caught by a plant on the centre stage with some twenty flowers open, and a magnificent form it is, and alone worth the journey to Leatherhead. The name it bears is Emiliæ. The sepals and petals are light blush, almost white, and the petals, over 21 inches broad, stand well upright. The great charm lies in the contrast of colourand broad fully-open Mendelii-like lip, the colour of which is a deep crimson-plum, margined with a broad rose fringe; the two sides of the throat are deep rose, and between them and the actual dark lip there are two large yellow eyes, as in Cattleya gigas, the throat being again yellow. The tube of the lip is extremely short, perhaps not above 14 inch long, giving the variety a very distinct appearance, and placing the actual lip very close to the lower petals and sepals, thus producing the perfect round shape so much admired in all Orchids. It is a variety of extraordinary merit, and of which Mr. Lee is justly proud. A. B.

DENDROBIUMS AT BROOMHALL FIELD, SHEFFIELD, -Permit me to record the successful culture of a few Orchids, imported within the past two years, at this place, which is within the smoke-radius of Shesiield, a town which, in a smoke and sulphurous-acid-producing competition with Rawtenstall (see Mr. Swan's note at p. 210) would in all probability carry off the 1st prize. This comparison is not carry off the 1st prize. intended to be derogatory to the beautiful Orchids at New Hall Hey, but to support the implied proposition of Mr. Swan, that the vicinity of ironworks, railways, factories, &c., need be no deterrent to the successal cultivation of Orchids. In the conservatory at Broomhall Field, and standing underneath and around a beautiful Tree Fern (Alsophila excelsa), is a charming group of Orchids and Lachenalias edged with Isolepis gracilis. The principal feature of the group is a very fine specimen of Dendrobium Wardianum bearing 113 fully expanded flowers on five growths, the most floriferous pseudobulb producing thirty-two flowers. Next to this example is a smaller plant of the same species, but one of the very best varieties. Other prominent plants in the group are Cœlogyne cristata, Odontoglossum Rossii majus, O. Pescatorei, Cattleya Trianæ, and Dendrobium Farmeri var. aurea flava. In the East Indian-house are splendid examples of D. Devonianum, with thick growths 3 to 4 feet long and flowering to within 6 inches of the base; strong plants of D. primulinum D. Paxtoni, D. lituislorum, D. thyrsislorum, and D. Dalhousianum, to which last-mentioned I drew attention last spring. The pseudobulb then noticed made a double "break," and has developed and matured two strong growths, each about 5 feet long. In a low pit previously used for the cultivation of Melons, Cucumbers, and Tomatos-the warmest end being partitioned off-are some healthy intermediate and cool-house Orchids; in the former division, only some 9 feet square, is a large plant of Odontoglossum vexillarium with eight strong leading growths and

without spot or blemish; a very fine piece of Cattleya gigas, as also C. Trianæ and C. Walkeriana, Cœlogyne occellata, Oncidium ornithorhynchum, Chysis aurea, and Dendrobium Falconeri, all worthy of mention. The cool division contains some dozens of healthy established and semi-established plants of Odontoglossum Alexandræ, O. Pescatorei, O. Rossii majus, O. cirrosum, &c., and floriferous examples of Lælia albida. Sufficient has been said to indicate the small but varied and interesting collection of Orchids now being formed by B. P. Bromhead, Esq., and the amount of pleasure and success attending the judicious expenditure of a few pounds when the purchases are followed up by intelligent cultivation; moreover be it noted that no expensive preparations have been made or elaborate houses erected for the special accommodation of Orchids. As they arrived they were placed in the structures devoted to the production of fruits and flowers, until at last the original occupants have been, and are being, ousted by them. The general health of the Orchids and stove and greenhouse plants, as well as the crops of fruit annually produced in the vineries and Peach-houses testify to the care and ability of Mr. Walker, the head gardener. F. U. S.

ODONTOGLOSSUM CORADINEI. — Messrs. Veitch have sent me a very well kept flower of this. There is nothing astonishing in this. But it is not of Chelsea origin; it comes from Mr. A. R. Smith, Troy, U.S., and has travelled 4000 miles! This is the cardinal point. Amateurs now send flowers across the Atlantic just as one sent them fifty years ago from Glasgow to Kew! H. G. Rehb. f.

THE ORCHID MARKET,—There was a fine display of Orchids in flower at Stevens' Rooms, on Wednesday, and a good attendance of buyers. The best prices realised were for Cattleya Triance vars., 12½ gaineas, to 5 gaineas; Odontoglossum crispum, a fine large white-flowered variety, 15½ gaineas; O. Rossi majas, Trentham variety, 12 guineas; O. Pescatorei, 7½ guineas; Dendrobium Jamesianum, 65 100; ½ Lycaste Skinneri alba, small plant, 10 gaineas; Dendrobium nobile, fine var., 5 guineas; an Odontoglossum hybrid, 12 gaineas; Cattleya sp. with a fine lip, 105 guineas; an unnamed species of Odontoglossum, 16½ gaineas.

FRUITS UNDER GLASS.

PINES.-Shading should now be got in readiness as the time is approaching when it will be required, for Pines, although light-loving subjects, will not thrive well under glass when exposed to powerful sunshine. The Smooth Cayenne is the first to show signs of suffering from this cause by its foliage becoming browned and wiry, and plants that are allowed to undergo this strain do not give such good results as those that are judiciously protected with thin tiffany, or some similar material which enfeebles the sun's force, and diffuses its light without unduly darkening the structure. many cases the Early Queens will now be coming into blossom, and as low temperatures, cold draughts, or moisture-laden atmosphere would prove fatal to perfect fertilisation, and a single unfertilised blossom means a deformed fruit, no pains should be spared to preserve the plants and their surroundings in a favourable condition. When the blossoming period is past, the amount of moisture should be increased; in large airy houses where there is a difficulty in keeping up an adequate amount, evaporating pans filled with guano-water are of great service, and in all cases where pans are not employed the pathways should be daily sprinkled with this agent after the house closed, at the same time in hot weather overhead damping with tepid rain-water will also be beneficial; it should, however, be followed with discretion, especially in low close houses. Water at the roots will be in more frequent request now, and the importance of stimulating food in the form of liquid manure should on no account be undervalued. Where the second house has not yet been started it should now be seen to if the plants have not been arranged and replunged since the autumn. The pots may have become unlevel or loose in their beds through the decomposition of the plunging material. Such defects must be remedied, and the bottom-heat in each department should be frequently tested to avoid a mishap in this direction. recently potted will demand vigilant management in the way of a moderate degree of temperature, careful ventilation to prevent elongated growths, and a limited

amount of moisture at the roots until they have ramified in the fresh soil. These remarks respecting moisture also apply to newly potted suckers, which should be kept rather close, and slightly shaded until they have taken root.

VINES .-- The second Hamburgh and early Muscathouses will now require frequent attention in the disbudding, stopping, and tying of shoots. The latter operation, as I have previously remarked, necessitates patience, for much mischief often results by the loss of spurs through the disjointing of shoots from too much haste in this matter. In many instances the trellis is placed too near to the roof; where head-room will allow, a space of 18 inches or more should be afforded; this admits of considerable length of growth, and, of course, strength before tying is requisite, as well as a free current of air between the ge while the glass, thereby diminishing the risk of scalding, and the weight and quality of the crops are in no way impaired through being produced in this position. Hamburghs in blossom now should have a temperature at night of 65° with a constant cir-culation of warm air through the house; Muscats should he allowed 5° more, and be assisted with Hamburgh pollen. To those who are unsuccessful in setting Muscats, I would recommend the practice of syringing we ventured upon this last season, by carefully applying tepid rain-water on several successive sunny days at the time of closing the house with a warm temperature, and were well pleased with the issue. I ought to mention, however, that Hamburgh pollen was administered each day when the Vines were dry before the syringing took place, and it would not be advisable to syringe in dull weather, or with a low temperature. The Lady Downe's and other late varieties will now be moving, and should be assisted by frequent dampings until they break into growth, when they must be encouraged with increased warmth, and the overhead damping be reduced to one daily application given at closing time. Disbudding should he proceeded with, as has been directed, for the earlier houses, and the borders be well supplied with tepid water. Young Vines intended for planting should be started into growth so that they may soon be in a suitable state for turning out into the borders, while those that are intended for inarching should be brought forward in the same stage as are the Vines to be operated upon.

STRAWBERRIES .- In forwarding these this season we have had to depend principally upon our own resources, for the sun, which is a valuable factor, has given us but little assistance. When the colouring of the fruit commences, overhead syringings and the use of liquid-manure should cease, but the plants must not be allowed to suffer from the want of clear water at their roots. One favourable feature in the Strawberry to those who have to meet an early demand, is that when the fruits are set the plants will withstand great pressure in the form of high temperatures, and will freely swell their fruits when subjected to this treatment providing a liberal amount of moisture is maintained, but in pursuing this mode of culture when once there is a sign of the berries changing colour the temperature should be gradually lowered, less moisture be afforded, and a free circulation of air admitted, for without these conditional changes both high colour and flavour will be sacrificed. Where there is no Strawberry-house proper, and accommodation has to be provided in other fruit houses, such as vineries, the plants should have an unshaded situation as near as possible to the ventilators, as the air from them will accelerate more perfect fertilisation of the blossoms, and colour and flavour of the fruit. Thomas Coomber, Hendre Gardens, Monmouth.

The Pitchen Garden.

SEEDS of Connover's Colossal Asparagus should now be sown in drills 2 inches deep and 12 inches apart, in a border where the soil is of a light, rich, and sandy nature, for transplanting the following year. Seakale seeds should also be sown, either in a nursery bed, in drills 2 inches deep and 12 inches apart, in patches-about three seeds in each patch (which subsequently should be thinned out to one, 6 inches apart in the row), or in the situation in which the plants are ultimately to be forced, in rows 2 feet

apart, and 18 inches asunder in the rows, in light rich soil, from 2 to 3 feet deep. Plantations may also be made from cuttings, which, if cut into lengths of about 4 inches and placed in a box, intermixed with sand when the plants were taken up for forcing last autumn, should be dibbled in from 10 to 12 inches apart in the rows, and 18 inches between the rows. These thongs, or root cuttings, will furnish plants to be taken up for forcing next winter; but if they are intended to be forced in their permanent situation by the aid of pots and fermenting material, then the distance should be 2 feet between the rows, and 18 inches from plant to plant, and these should be set about an inch under the surface of the soil. A sowing of Chervil should now be made in shallow drills; also another breadth of Turnips, Radishes, and All the Year Round Cabbage, and Paris White Cos Lettuces. A small sowing of each should be made at short intervals, so as to always have a good supply of young plants wherewith to make frequent plantings. Make another sowing of Peas every fortnight for the next three or four months of such varieties as Carter's Stratagem, Carter's Telephone, and Ne Plus Ultra; also Carter's Leviathan and Taylor's Broad Windsor Beans, and Spinach in sufficient quantity to meet the demand for the same at the proper time.

FORCING DEPARTMENT.-Tomato plants, whether growing in pots or planted out and trained like Melons to a trellis under the roof will now, especially in the latter case, require frequent attention in the way of pinching out lateral growths and thinning the leaves, as anything like over-crowding of the shoots and leaves would be prejudicial to success. The application of water to the roots must be guided by the space allotted to the latter, together with the condition of the plants and the weather, and no stimulants should be applied until the plants have set their fruit, when they should be thinned out, leaving, of course, all the best shaped and most even sized fruits. When the plants are in flower a drier and more airy atmosphere should be maintained. Plants which are intended to fruit in pots should now be ready for shifting into 12-inch pots, which should be amply drained. The plants should be thoroughly watered the evening before being shifted into the larger pots, after which they will not require water again until the roots have pushed into the new soil; the latter should on this occasion consist of three parts of good loam and one of well rotted manure. A stiff stick, between 5 and 6 feet long, should then be put to each plant, and the latter be secured to it. All lateral growths should be pinched back to within one joint of the main stem, and in other respects treated as recommended in the case of those planted out. Let the temperature at night range from 55° to 60°, and by day 70° to 75°, running up to 85° with sun-heat. H. W. Ward, Longford

Plants and thein Jultune.

GREENHOUSE PLANTS .- Many of the hard-wooded section of Cape and New Holland plants will now be making advances towards the flowering stage. will necessitate closer attention being given to their requirements with regard to watering and other minor details. The sun also now having greater power, will cause extra regard to be paid to the ventilation, to keep in check a too rapid advance; shading however will not be needed for some time to come; in fact the less shade the better for plants indigenous to the Cape of Good Hope and New Holland, except just when in full bloom. A sturdy, short-jointed and hardy growth will yield the best return in flowers. Reverting, however, to the watering, it is necessary to say that a thorough knowledge of the individual wants of specimen plants is requisite to ensure success. This work should not be shifted from one pair of hands to another indiscriminately, or the plants will quickly suffer. Those who are well acquainted with their plants can tell nearly to an hour when they will their plants can tell nearly to an hour when they will appearance in regard to health, watering should be done with still greater caution. Any plants that are now coming into flower, in whatever stage they may be, should not be allowed to suffer. Cape Heaths will generally tell their own tale if neglected in this respect, by deformed or crippled flowers. Azlae indica will cease to develope their flower-buds, the same turning brown in some instances whilst the vigour of the plant will be concentrated in the young growths. Aphelexis flowers will cease to grow, or else develope into puny examples. In a general way, once filling up the flower pot with water is not sufficient when a plant is in robust health, a second instalment, though, perhaps, not so much, will be the best plan to pursue, so that the entire ball may be well penetrated. These plants dislike dibblings more than any we know; and natice dibblings more than any we know; and patience exercised with them will be abundantly repaid. Rain-water will be found the best for them, and it any

Rain-water will be found the best for them, and if any scarcity is apprehended somewhat later on, this should be held in reserve for their special requirements. If a later crop of flowers is needed in the case of Dracophyllum gracile or Pimelea Hendersoni and P. mirabilis, this can be obtained by pinching out the flower trusses that will soon be showing. They will quickly break afresh, and push up another lot of flower-heads; these will be smaller than the first would have been, but the desired end will have been statistical. Any other greenhouse plants that are adattained. Any other greenhouse plants that are advancing too last should be kept at the coolest end of vancing too last should be kept at the coolest end of the house or be removed to a north aspect before they are too far developed. The earliest of the Epacris that have heen giving good returns will soon need cutting back, so also will the winter-flowering Cape Heaths of the soft-wooded section. Small stock of Fleromas and other Melastomaccous plants should be kept pinched; nearly all of this type of plants are apt to run away with a few strong shoots if not thus seen to and checked in time. Kalosanthes that will in all probability flower this season must be kept near the glass to keep them stocky. will require the same treatment to intensify the colours of their beautiful flowers. Statices will soon be showing their flower-spikes; those of vigorous growth should not be allowed to run away in an upright manner, but be pulled down carefully to a point position, the strength of the residence of the spikes. away in an upright manner, but he pulled down carefully to a horizontal position, the strength of the spike being thus better distributed throughout its entire length. All tying operations that require attention amongst the specimen greenhouse plants should be seen to without needless delay. Some require more than others; the two extremes, however, are easily to be seen; either the plants have scarcely any regard paid to this cultural detail or it is very much overdone, making them look as if they had been clipped with a pair of shears. Give Boronia serrulata and all other plants that are susceptible to white-scale a close looking to before other work becomes too a close looking to before other work becomes too pressing. In a mixed collection of greenhouse plants pressing. In a mixed collection of greenhouse plants the greenfly will soon be troublesome, these and thrips be disposed of at the same time by a few frequent fumigations.

Attention should be given to the requisite stock of soft-wooded plants. Of Pelargoniums some of the best should be culled from the stock for Leddlog purposes and potted on, not omitting the scented-leaved varieties. The Fuchsias will also need attention to pruning and potting, securing a batch of cuttings as soon as available. The show and fancy Felargoniums should have all the light and air possible; now that they are rapidly filling themselves out with robust growth more room will be needed to give them fair play. Pinching for late bloom should not be practised later than this, or an undue proportion of leafplay. Pinching for late bloom should not be prac-tised later than this, or an undue proportion of leafitised later than this, or an undue proportion of leaf-growth will be made. As the earliest begin to knot for bloom liquid-manure should be given them. A batch of cuttings from the Tree Carnations should be got in without delay; if taken from those plants that have been in a little warmth a more speedy strike will ensue. A little attention given now to the best strains of Chioese Primulas, to assist better ferti-lisation, would be amply repaid in a greater yield. As soon as the double Primulas are past their best, propagation should be taken in hand. This can be done either from cuttings in a little warmth, each one done either from cuttings in a little warmth, each one in a small pot, or by layering them in a little fresh soil placed around the old stool. As these plants soil placed around the old stool. As these plants quickly suffer from an excess of moisture, pay atten-tion to any symytoms of damp, and check the same by keeping them drier. An early lot of single varieties might now be raised from seed, they will be useful in

the autumn.

COLD PITS .- The latest of the Cinerarias should now be in these, with the herbaceous Calceolarias, if at all pressed for room in the houses. Do not let the at all pressed for room in the total latter plants suffer for want of water, a damp pit will latter plants suffer for want of water, a damp pit will latter plants suffer for want of water, a damp pit will latter plants suffer for want of water, a damp pit will latter plants suffer for want of water, a damp pit will latter plants suffer for want of water, a damp pit will be a suffer for want of water, a damp pit will be a suffer for want of water, a damp pit will be a suffer for want of water, a damp pit will be a suffer for want of water, a damp pit will be a suffer for want of water, a damp pit will be a suffer for want of water, a damp pit will be a suffer for want of water, a damp pit will be a suffer for want of water, a damp pit will be a suffer for want of water, a damp pit will be a suffer for want of water, a damp pit will be a suffer for want of water, a damp pit will be a suffer for want of water, a damp pit will be a suffer for want of water, a damp pit will be a suffer for want of water, a damp pit will be a suffer for want of water, a damp pit will be a suffer for want of water, a damp pit will be a suffer for want of water, a damp pit will be a suffer for want of water, a damp pit will be a suffer for want of water, and water for wa latter plants suffer for want of water, a damp pit will also be best suited to their requirements. Should the Chrysanthemums be still standing in their cuttiogpots do not lose any more time in getting them potted, neatly labelling each one to prevent any future confusion. As soon as they are established keep them well aired, to secure a good dwarf plant at the commencement. Any plants of Carnation Souvenir de la Malmaison that have been wintered in the cold pits should have a shift into a size larger pot, provided they were potted up from layers into 60's in the autumn. The common Musk is beginning to peep through the soil, a few pots should be prepared from promising tufts for decorative purposes. Fames Hutson, The Gardens, Gunnersbury House, W., March II.,

APPOINTMENTS FOR THE ENSUING WEEK.

Monday, Mar. 17 Sale of Natural History Objects, at Stevens' Rooms, Floral Meeting in the Town Hall, Manchester.
Sale of Carnations, Picotees, &c., at the City
Auction Rooms, by Protheroe & Morris.
Flower Show in St. George's Hall, Liverpool.
Spring Flower Show at Clifton, Bristol (two TUESDAY, Mar. 18 Spring Flower Show at Clifton, Bristol (two days). Sale of Palms, &c., at the Melbourne Nu-sery, Anetley, by Protheroe & Morris (two days). Sale of Hardy Plants and Bulbs, at Stevens' Rooms. WEDNESDAY, Mar. 19 Sale of Hardy Plants and Bulbs, & Stevens'
Sacons. Sees, Plant Seeds, Bulbs, &c., at
I Protheroe & Morris Rooms.
Linnean Society meets at 8 P.M. Pagers to
Stamens in Plants; 'by Greenwood Fin.
2, 'Cleaured Cyclostomious Bryona.'
by A. W. Waters. 3, 'Life History of
July Charles of Control of Plants; 'by Greenwood Fin.
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"A RE they the fashion this year?" asked a police magistrate the other day, referring to DAFFODILS. The question was asked in connection with a case in which some one who loved money better than he loved Daffodils was brought to a court of justice for exercising his felonious instincts at the expense of his neighbour's property. What answer the magistrate received we do not know. Whether "in fashion" or no they are always welcomed for their beauty and their associations, and the more opportunities people can get to see them the better, with certain reservations. No one who loves a flower would care to see it "in fashion" in a bad sense. We have had enough of that absurdity in the sunflower craze, enough to illustrate the truth that the surest way to degrade and vulgarise a flower is to bring it into such-like fashion. This is a procedure only one iota less degrading than that of making flowers the symbol of political strife and party feeling. Fashion of this kind merely leads to the unintelligent sequacity of geese, or to the felonious proclivities of men who must live and do not much care how, and to the ultimate destruction of what is beautiful in Nature or in Art.

But there is another sort of fashion which is as much to be encouraged as the other is to be deprecated-a fashion which originates in intelligent curiosity as to the structure and habits of life of flowers, and in real admiration of their beauty. From this point of view we get all the good that flowers are capable of giving us without of necessity one unworthy thought-we had almost said, without covetousness or risk of felony. To err, however, is one of the commonest characteristics of humanity, and hence it is to be feared that sometimes some weak brother might look over the hedge and covet the Daffodils in the copse-it might be soand if the temptation proved too strong the consequence might be, as we have seen, an appearance before the police-magistrate. That functionary would doubtless administer the law with all correctness and discretion, but it would hardly occur to him to act on the axiom that "prevention is better than cure;" in fact, it would be ultra vires for him to do so. Cultivators, however, have it in their power to satisfy the demands of fashion in a way that does no harm to any one, that ensures an adequate supply, and prevents the tendency to appropriate other people's property. By all means let us grow Daffodils by the score, the hundred, the thousand-we can scarcely have too many of them; and let us not expose ourselves to the temptation of coveting our neighbour's property, or what to our minds is, if possible, a worse enormity, run the risk of exterminating from their native haunts the gems which have been the admiration, the solace of so many generations of men. If a poll could be taken on the question whether we should retain the Daffodils and Primroses of our woods at the expense of handing over Central Asia to Russia, we strongly suspect a large number

would by their votes say, Let Muscovy have Central Asia and leave us our Primroses! As we have said, the art of the gardener steps in to relieve us of any such dread necessity, and brings Daffodils and other flowers to the homes of thousands who, but for this aid, would not be charmed by their grace, nor enabled to comprehend their ineffable subtleness of association.

We may, then, say that Daffodils are in season this year, and in a good sense too; and if any further proof be needed it may be found in the announcement we are enabled to make, that a CONFERENCE of DAFFODIL GROWERS will be held on April 1, in the conservatory of the Royal Horticultural Society, when it is expected that many of the leading growers of Holland, no less than of our country, will be present to weave a cloth of gold such as FROISSART would fail adequately to describe. The exhibition, which adequately to describe. The extinuity, mich is sure to be a very extensive one, will not be confined to Daffodils proper, but will be extended to all members of the Narcissus family, and we have no doubt a few friends will be invited to join. The Conference will, it is expected, be opened with a paper by Mr. BUR-BIDGE, upon which discussion will be invited, and in which it is hoped that some of our leading grovers will take part.

leading growers will take part.

The whole scheme is to be organised by the Council of the Royal Horticultural Society, aided by a few experts from outside. No prizes will be offered, the love of flowers being, as it should be, the greatest incentive.

This action of the Council will, we think, be welcomed by reason of the soundness of the principle manifested. They have gauged the feelings of the specialists, and met them considerably more than half way. In this way they obviate the segregation and disintegration of the parent Society, and prevent that spectacle which the special societies are rather apt to present, one which we may illustrate appropriately in this case which we may illustrate appropriately in this case which we may inustrate appropriately in this case by the fable of NARCISSUS admiring his own image in the limpid stream. It ought surely to be more satisfactory for him to be the cynosure of all eyes than to be merely the subject of unbecoming self-admiration.

- WHAT IS TO BE THE FUTURE OF THE CINERARIA?-This is a question which might well be asked in remembrance of the group of extraordinary flowers Mr. J. JAMES submitted to the view of the committee on Tuesday last. The canons of the florist, as formulated by the National Floricultural Society twenty years ago on the foundation of those laid down by GLENNY, are practically as dead as CÆSAR. The Floral Committee appeared to pass over the flowers that were characterised at least by some of the qualities that used to be favourably regarded hy florists, and made awards to flowers of prodigious size, but lamentably coarse. Thirty years ago Lady Mary Lahouchere and Optima were sent out, and they were regarded at that time as varieties of great beauty and comparatively perfect, of fine shape, pure in the white ground, with a dark disc, and a Picotee edge of hlue or purple. These varieties, as figured in the Florist, were represented by pips quite up to the natural size, and nearly 11 inch in diameter. One of Mr. JAMES' varieties certificated on Tuesday last was named Pollie Charming: it had a large disc, a zone of white, and a broad marginal colouring of bright magenta-rose, but with regard to form it was sadly wanting in the symmetry we have been accustomed to see in named Cinerarias, and which was present in a few of the splendid selfs shown by Mr. JAMES on this occasion. The pips of Pollie Charming measured $2\frac{3}{4}$ inches in diameter, dimensions inconsistent with perfect symmetry. The committee evidently go for size; the blue purple self Challenge, with its grey disc and petals awry, had nothing else to recommend it. But it must be admitted Mr. JAMES has a wonderful strain of great decorative value, with self colours predominating, and a few of these of very fine form; some were of rich maroon shades, altogether new and striking; there were also hues of shaded magenta-purple, dark plum, dark purple, very rich crimson and pale bright magenta, quite a new and pleasing shade. Then the plants, of robust and yet very dwarf growth, with remarkable heads of bloom. Is there any demand for these named Cinerarias? Probably the day for them has passed, for

the present at least. Who knows but at no distant date named Cinerarias may he once more in the ascendant, for certain subjects have their season, fall into neglect, and become raised again to a new popularity, as if amenable to the laws, if any, which regulate the eccentricities of fashion,

- PRIMULA QUEEN VICTORIA. - This was shown by Mr. ODELL of Shepherd's Bush on Tuesday last, and it served further to illustrate the fact that the high-coloured varieties raised from Chiswick Red do, for some reason, fail in not a few instances to throw their flowers well above the foliage. was a large group of plants, but this defect was observed in all—the plants were robustly grown, but the flower scarcely rose above the finely developed leaves. Probably Mr. H. LITTLE has been as successful as any one in remedying this defect. He has one or two at least, of very rich-coloured varieties that throw up fine trusses of bloom well above the foliage, he having devoted himself as a raiser to realising this result. He has also secured, not only size of pip, but great substance also, which is a requisite in the high-coloured varieties; and they possess another characteristic, that the rich vermilion colour deepens as the flowers age, which is a quality of great value. "Dying well" is a term much em-ployed by the old florists: it means that a flower should maintain all its best qualities until it fades.

- PROPAGATING DAHLIAS .- March, and during the early part of the month, was always considered the hest time for taking cuttings of Dahlias, for the reason that a forced growth is not necessary to make them forward enough, as is the case with some late-struck cuttings, and they are not too early to become stunted. This is a casualty that sometimes occurs in the case of cuttings struck in February, Probably what are termed "pot roots" of Dahlias are much more used for planting-out than they used to he. The older Dahlia growers preferred young green plants formed of spring-struck cuttings, and employed pot roots only in the case of certain varieties that produced better flowers than from cuttings. "Pot roots" are the unsold plants of cuttings of the previous spring, stood in a frame all the summer, and allowed to grow as they please, but kept well watered. In the autumn these are turned out of the pots and stored away for sale, and when in a dormant state they can be sent long distances if secure from frost, Pot roots are generally potted about the end of March, placing them in a gentle heat, and moistening them once a day. When the shoots are pushed an inch or so in length they are potted into 4-inch pots, using rich soil, draining the pots with a little coarse leaf-mould instead of crocks. The roots should he covered with soil, and care is requisite not to fill the pots with earth within an inch or more of the rims, as the roots increase in size rapidly, and it is difficult to water them unless space is left for it. Pot roots treated in this way make excellent plants to put out into borders, as they flower early; or any one wishing to get up a stock of a certain variety can obtain pot roots. Secure two or three cuttings from each by placing them in a hrisk dung frame, and potting the roots afterwards as above directed.

- THE CHRYSANTHEMUM. - Those who make a speciality of Chrysanthemums state that there is a very large demand for plants. Always a popular flower, it has at the present time reached a height of popularity almost equal to that of the Rose; and many persons who cannot grow Roses can grow Chrysan-themums. It gilds the autumn and early winter months with so much of floral heauty as to rob them of some portion of their terrors. Then Chrysanthemum shows appear to he spreading on every hand; this gives an impetus to culture, and it is worthy of note that spring exhibitions appear to decline just in the same ratio as the autumn shows extend; the popular sentiment appears to go out towards the latter rather than the former.

STAUNTONIA HEXAPHYLLA. - A figure of this highly interesting climher appeared in our columns for 1876 (vol v., p. 597). The eight years that have elapsed since that figure was drawn have allowed us to make comparisons of the relative value, from an outside garden standpoint, of the present species and its Himalayan ally, S. latifolia. The former has, as far as our experience goes, always proved the hardier of the two, and has thriven where the other has utterly failed. Both species are perfectly safe in a corridor, or as inmates of the cool conservatory, and both have deliciously scented flowers, the foliage of S. hexaphylla being the bolder and more striking.

PRUNUS DIVARIGATA.—A fine specimen of this handsome early-flowering species is now so laden with blossoms at Kew that at a distance it might be supposed the tree was hidden beneath a canopy of snowy-white. The tree in question is of singularly graceful habit, and forms a bemispherical mass a dozen or more feet in height by as much through. It was procured from OSBORN's nursery, and planted by the ex-curator, Mr. J. SMITH, more than forty years ago. The flowers are somewhat smaller in size than those of the Cherry Plum, P. cerasifera, of which P. divaricata is considered by some authorities to be a wild form. According to BOISSIER the distribution of P.

high, and as much in diameter, was covered with trusses of brilliant scarlet blossoms, an object of surpassing beauty; bushes of R. Falconeri, R. eximium, and others of a similar size, and full of books ready to expand, and all growing in the open air."

BACTERIA AGAIN. — When seeds begin to grow and buds to sprout, one essential preliminary is the conversion of the insoluble and indigestible into the soluble and digestible. In the seed and in the bud starch is stored up, having been formed by the conjoint agency of solar light and the green matter of the leaves (chlorophyll), the previous season. This starch is insoluble, but through the agency of a nitrogenous ferment called diastase, secreted by the protoplasm of the cell, the insoluble starch becomes converted into soluble sugar or mallose. So much has been known for a considerable time as a general

there can be little doubt, and especially the former, because we too seldom grant to Mimuluses those merits of hardiness which they deserve. Still, no one would risk the lives of fine kinds that it was desirable to preserve all through ordinary winters out in the open ground especially when the plants can be in the autumn pulled to pieces, and the best shoots dibbled up for the winter in a cool frame, where they will grow, and presently make huge well-rooted plants. Really, no spring-sown seed can produce plants that will for a moment compare with those thus saved through the winter; indeed, it is the common experience of those who thus winter Mimuluses, that about March it is necessary to lift the plants and give them more room, or some may go into pots for house decoration, whilst the rest will do for the open borders, though perhaps better left in the frame till the end of April before planting out. All these plants should

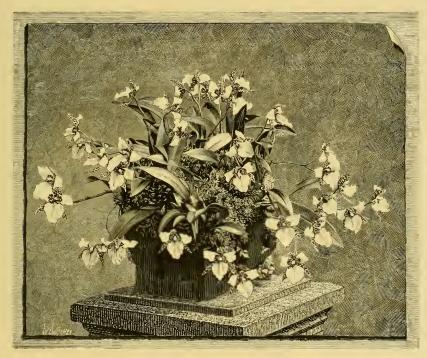


Fig. 63 .- Odontoglossum rossi major var. Rubescens, at drinkstone park. (see p. 339.)

divaricata in a wild state is from Macedonia to Caucasus and Northern Persia. A figure of the Kew plant appeared in the *Botanical Magazine*, tab. 6519.

— BERBERIS THUNDEREO is a very distinct and beautiful Japanese Barberry, and one of the earliest to flower in the genus. It makes a very compact low bush, and the red-brown bark, the simple straight spices, the entire leaves in crowded tufts all along the branches, and the drooping flowers, with pale straw-coloured petals suffused with red, combine to render the species markedly different from all its allies. It is quite hardy in this country; specimens are now in flower at Kew. A figure appeared in the Botanical Magazine, tab. 6646.

— RHODODENDRON BARBATUM.—A Welsh correspondent, "Tafiy" by name, writes:—"You must come to South Wales to see the most glorious examples of the Sikkim Rhododendrons. The other day, in Mrs. VIVIAN's famed garden at Singleton, a specimen of Rhododendron barbatum, 10 or 12 feet

fact, though the subsidiary details have and still continue to tax the patience and ingenuity of chemists. A further complication is brought about, in some cases at least, by the agency of Bacteria. It appears that these minute germs secrete either diastase itself or something like it, by means of which they dissolve the starch and appropriate its carbon, setting free in so doing some oxygen, which is used up by the germinating seed or sprouting bud.

— MIMULUS. — Few things seem just now to present a more instructive comment upon the average temperature of the winter through which we have just passed, than do large patches of the rich grand flowered Mimulus that have stood out all the winter, and that too on a north border, and in the neighbourhood of London. The fresh and vigorous growth, and the patches from single roots some to inches to 12 inches across, serve to show, either that the grand Mimulus is hardier than it is usually esteemed to be, or else that the winter has been unsually mild. That both have to be fully estimated

have the centre or main shoot removed early, and then the base shoots produce a well grown specimen. It is better to sow seed late in the autumn even, and keep the seedlings in pans for the winter, than to leave the sowing till now.

— STRAWEEREV CULTURE.—It is commonly held that few plants more thoroughly exhaust the soil, and, as a consequence, need change of place every few years, than Strawberries; it was therefore something of surprise to learn the other day from Mr. R. CLARK, of Twickenham, that on one border a rod in width and roo yards long Strawberries had been grown for forty years in succession, and that still the crops were magnificent. Mr. CLARK's garden is near Strawberry Hill, and it may be that the soil there is peculiarly fitted for the culture of this delicious fruit. Still, our preconceived notions as to the exhaustion of the soil through such long culture of any one crop are somewhat shaken, and it seems as if nothing traditional in gardening could be taken for granted. That this border is deeply worked

every two or three years, and heavily manured, goes for saying, and our metropolitan growers do manure most heavily; still it pays, and a warm border of this nature turning its crop in rather before the bulk of the early kinds are in, often gives a return that to many may seem fabulous. It is all a matter of high culture, and getting superb examples of fruit, and it is due to Mr. CLARK to say that no grower perhaps commands for his produce a higher price in the market. "Having 2000 more rooted runners in pots of President than I wanted for forcing, I planted them out on the border in August, and the crop resulting was marvellous," Such were Mr. CLARK's words, and yet this border has grown Strawberries for forty years. Really we do not know one-half of the capacities of the soil till we fully test it.

- PROLIFERATION IN SCIADOPITYS VERTI-CILLATA. -At the last meeting of the Linnean Society (March 6) Mr. F. O. BOWER drew attention to a figure published in the Gardeners' Chronicle for i, representing a case of proliferation of the so-called double needle of Sciadopitys verticillata. He alluded to the various views which have been put forward as to the morphological value of the "double needle," and concluded that the one first propounded by Professor ALEX. DICKSON, and afterwards discussed by Von Mohl in an adverse sense, and by GOEBEL favourably, is most in accordance with the history of its development. He pointed out that the figure in question represents a monstrous form, which bears out this view. The lower part of the phylloclade is here developed in the normal manner. About one-third from the base a leaf is given off, similar to the needle of Pinus, and without emargination of the apex. Higher up a second similar leaf is given off from the opposite side, while the axis continues its growth, and forms organs in a similar manner to any main axis of the plant. Such proliferations were obtained by M. CARRIÈRE from the apices of cones which had been "grown through," and the explanation probably is that the axillary axes at that point are provided during their development with an excessive supply of nutritive material. This brings about a stronger development of the apex of the axillary shoot, which is, under normal circumstances, almost, it not entirely arrested. If the double needle be regarded as a phylloclade with arrested apical growth, this case of proliferation may be readily explained as an example of continued apical growth, accompanied by a displacement of the normally more intense intercalary growth. In the normal condition this growth is strongly localised below the apex of the axillary In the abnormal example in question growth has been distributed, not only at the point, but also in the leaves themselves, and also in the apex of the shoot, with the additional organs which it bears.

—— INDIAN SPECIES of CYPERUS.—At the last meeting of the Linnean Society the Secretary read an abstract of an important contribution "Oo the Indian Species of Cyperus," by Mr. C. B. Clarke, with remarks on some others that specially illustrate the subdivisions of the genus. The author divides his men.oir into three sections:—1. A descriptive account of each part of a Cyperus, viz., the culm, inflorescence, &c., comparing these successively in all the Indian species; 2, a discussion of some difficult species and disputed genera; 3, a systematic arrangement with descriptions of the Indian species, with short citations of some non-Indian species that more particularly illustrate the subdivisions and groups.

- THE ALMOND .- What beautiful objects are the fine trees of Almonds so frequently met with in gardens near London! In early spring the Almond certainly rules supreme in British gardens. One of the forms has snow-white flowers, another-the one most commonly met with-rose-tinted or flesh-coloured blossoms. A weeping form, too, is an ornamental low-growing tree, of great value where the ordinary type would require to be cut back and cramped in order to confine it to a space which is sufficient for the weeping variety. What country, or countries, can claim the Almond as a true native? DE CAN-DOLLE, in his extremely interesting work, L'Origine des Plantes Cultivées, inclines to the belief that parts of Western Asia can claim this honour, and that in Sicily, Greece, Italy, France, and elsewhere, where the Almond occurs in an apparently wild state, it has become naturalised more or less recently. HASSEL-QUIST, the friend and pupil of LINNÆUS, in the interesting account of his Travels to the East, quaintly philosophises about the Almond. "Why," says he, "does the Almond tree, which hath white flowers blossom on bare boughs? not for the same reason as the Hazel; perhaps the fruit, having a stone, requires a longer time to grow? They adorn the rising grounds, and according to Nature's order ought to afford much fruit, as they bloom at a time of the year when the sky is constantly serne, and if neither rains nor is there any kind of bad weather, which in many countries prevent a fine blossom from giving the wished-for fruit."

—— DICHOPOGON STRICTUS. — This is a very attractive sweet-scented Liliaceous plant, like an Asphodel, with tuberous roots, long linear grass-like leaves; linear bracts, and pale violet flowers of regular form, about 1 inch or 1½ inch across, and arranged on long stalks in loose terminal clusters. The anthers have two curious purplish lobes or appendages at the base. The plant is a native of a large portion of Australia and of Tasmania. The specimen figured in the Botanical Magazine, 1, 6746, was grown in the Cambridge Botanic Garden.

- CORYLOPSIS HIMALAYENSIS .- On the wall of the herbaceous ground at Kew a vigorous young plant of this newly-introduced species is now in flower. When better known this will doubtless become as great a favourite as the charming little Japanese shrub, C. spicata, which was first introduced to British gardens some score years or so ago by Messrs. VEITCH, and figures of which have repeatedly appeared in these columns. As far as appearances go at present, C. himalayensis seems a more vigorous grower than its Japanese relation, the Cowslip colour as well as the Cowslip fragrance being equally as marked in the former as in the latter species, pendulous racemes-subtended by large pale strawcoloured bracts-of C. himalayensis seem larger than those of C. spicata, but the anthers of the last-named species are more conspicuous on account of their bright red colour. A figure of C. himlayensis has been prepared for the Botanical Magazine.

- CLIMATE, -The following extracts, taken from the last report of the Botanic Garden, Trinidad, will be of interest to cultivators as showing the comparative uniformity of conditions and the slight range under which tropical plants grow. The mean maximum temperature for the three years, 1880—1882, was 90°, the range being from 83° in January, 1880, to 92° in April, 1881. For the same period the mean minimum temperature was 61°.7, the range being from 60°.7 in February, 1880, to 68°.4 in April, May, 1881, and in September, 1880. The extreme range between maximum and minimum for the three years was 38°.3 F. The mean temperature for twenty-one years is given as 77°.7, the highest being 79°.5 in May, the lowest 76° in January and February. The maximum humidity for twenty-one years is registered as .885 in August, 1880; the minimum in April, 1869, as .572-1000 representing saturation. average amount of rainfall for twenty years is 65.85 inches, the maximum being 85.2, the minimum 44. The average amount of cloudiness (ranging from o total clearness, to 10 total cloudiness), is given at 5.2 for the whole year, the range being from 4.5 as a monthly mean minimum in January to 64 in October. Where, as in countries like Trinidad, the range is so small, records of mean temperature are valuable, but for climates where the conditions are more variable and the extremes wide apart mean temperatures are misleading. A ready method of recording the relative duration of any given temperature or other meteorological phenomenon is still a desideratum.

—— ROYAL HORTICULTURAL SOCIETY. — The President, Lord ABREDARE, has nominated the following gentlemen Vice-Presidents for the ensuing year, viz., Sir Trevor Lawrence, Bart., M.P., J. II. MANGLES, Esq., ROBERT HOGG, Esq., LL D., F.L.S., and Sir P. CUNLIFFE OWEN, K.C.M.G., C.B., C.S.E.

—— GARDENERS' ROYAL BENEVOLENT INSTITU-TION.—TO Mr. J. E. PERKINS, of the Billing Road Nurseries, Northampton, is due the credit of originating a new method of making life-members of this Institution. From a schedule of prizes before us, of the Northamptonshire Horticultural Society, we learn that at the third annual exhibition, to be held in Delapre Park, on August 2 and 4, Mr. PERKINS offers as a first prize "a Life-Membership of the Gardeners' Royal Benevolent Institution, value £10 10s.," in a class for a group of miscellaneous plants suitable for conservatory decoration, open to gentlemen and gentlemen's gardeners in the county of Northampton. Special prizes of this kind are highly to be commended, and we trust many others may see their way to doing likewise, during the ensuing season.

— The Wood Trade in Konigsberg.—It is stated in a recent report from Konigsberg that the trade in wood is increasing every year. The shipment of wood at Konigsberg is much kept back by the shallowness of the channel in the Frische Haff, between Konigsberg and Fillau, which prevents large vessels loading up at Konigsberg. It is, however, hoped that this will shortly be remedied. Billet wood, Birch and Eech, is shipped in considerable quantities to Scotland to make herring barrels, and Alder wood to the Weser to make cigar boxes.

ROYAL METEOROLOGICAL SOCIETY.—At the ordinary meeting of the Society, to he held at 25, Great George Street, Westminster, on Wednesday, the 21st inst., at 7 F.M., the following paper will be read:—"Brief Notes on the History of Thermometers." By Robert H. Scott, M.A., F.R.S., President. After the reading of this paper the meeting will be adjourned, in order to afford the Fellows and their friends an opportunity of inspecting the exhibition of thermometers, and of such new instruments as have been invented and first constructed since the last exhibition.

— PRESENTATION TO MR. GEORGE EYLES.— The late Honorary Secretary of the Richmond Horticultural Society, Mr. GEORGE EYLES, was last week presented by the subscribers with a silver tea-kettle, stand, and lamp, in recognition of the manner in which he had discharged the duties of his office.

— THE WEATHER.—General remarks on the temperature, rainfall, and duration of bright sunshine, for agricultural and sanitary purposes, during the week ending March 10, issued by the Meteorological Office, London: — The weather has been very unsettled and changeable generally, with a good deal of rain, sleet, or hail. Over the greater part of England, and in some parts of Scotland, however, the first few days of the period were fine and bright. The temperature has been 1° below the mean in Iteland, but 1° above or about equal to its normal value elsewhere. The maxima were registered in most places on the 6th; and ranged from 49° in most places on the 6th; and ranged from 49° in "Scotland, N." to 55° in "Scotland, E.," the "Midland Counties," and "England, S." The minima, which were recorded on different days in the various districts, ranged from 27° in "Ireland, S.," and 28° in "England, N.E.," and the "Midland Counties," to 32° in "Scotland, E.," and "England, N.W." The rainfall has been more than the mean in all districts, the excess over then north of England and south of Ireland being large. At Valencia the total fall has amounted to as much as 4.84 inches. Bright sunshine shows an increase in duration in most places. The percentage of possible duration was greatest, 51, in the "Channel Islands," and least, 11, in "Scotland, F.," while in "Scotland, N.," 30 per cent, in "Scotland, W.," 31 per cent, in "England, S.," 32 per cent, and in "England, S.W.," 36 per cent, in "Scotland, W.," 31 per cent, in "England, S.," 32 per cent, and in "England, S.W.," 36 per cent, in western stations on the 4th and 8th, has consequently been between south and west. On our western and outhern coasts thas blown freshly or stongly, and during the latter part of the week the force of a fresh gale (from the southward was readened in Ireland, and a very strong gale in the north-cast and east of Scotland, and a very strong gale in the north-cast and east of

— GARDENING APPOINTMENTS.—Mr. G. RAMSAY, lately Foreman at Huston, Argylshire, as Gardener to Viscount Ashbrooke, Castle Durrow,
Queen's County.—Mr. Richard Parker, Foreman
to Mr. McIndor, Hutton Hall, Guisborough, as
Gardener to J. Corbett, Esq., M.P., Impney,
Droitwich.—Mr. E. Bryan, for the last three years
Foreman at Hackwood Park, Basingstoke, as Gardener to Lord Thynny, Culver House, Stroud.—
Mr. W. Clayton, for the last two years Foreman at
Baldersby Park, Thisk, as Gardener to Lord
St. John, Melchbourne Park, Sharnbrook, Bedford.

HYBRID AMARYLLIS.

Concluded from p. 307.)

I WOULD now ask the following questions:—
(a) Is it a good or a bad practice to attempt to fertilise a pistil with more than one kind of pollen?

The following facts will, perhaps, give some answer to the above question:—

1. It is evident that in a state of Nature promiscuous fertilisation of some flowers appears to be the law. There is no provision in the Amaryllis for preventing a moth or other insect from carrying pollen to a pistil which had already come in contact with another kind of pollen, nuless it be the closing of the petals over the pistil, alter fertilisation. This, however, is insufficient. There is no way of preventing different kinds of pollen being carried to a stigma before fertilisation actually occurs, and the subsequent closing of the petals. In fact, a moth, visiting flower after flower, cannot help taking to an unfertilised pistil a mixture of pollen grains at one and the same time.

2. In 1875 I crossed promiscuously, that is, I applied on the same pistil, at different times, the pollen of a number of varieties, sometimes more than half-a-dozen. The result was satisfactory, both as regards quantity of seed, and germinating power. As to flower, some wonderful novelties were produced.

3. In 1882 I did the same thing, and the result, as to number of seeds and germinating power, was equally satisfactory. As to flower, however, I am not yet able to judge.

yet abuse to judge.

4. In 1833 I acled differently, that is, I applied one kind of pollen only to each pistil, selecting, as a rule, those varieties the qualities of which I wished to combine. The result was a failure, as the following list will show:—

Padsbah x Dilfarèb	1 c seeds	r germinated and
Sita × Acramaoni	11 11	I germinated and
* **		perished
Lucy × Harari	3.1. 11	r germinated and perished
(ſ	1 germinated and
S. Marco × seedling vittata	Un- (perished
21 22 21	counted	None germinated
Banavia × Lucy	ra seeds	1)))
S. Marco × Sila	23 11	11 11
Pinkedge × Dilfareb	10 ,,	a) 19
Isabella × Padshah	9 11	17 19
Isabella × Sita	8 ,,	11 11
Alma × Bonavia	2) (31 11
Alma × Dilfareb	12 11	12 11
Alma × Hazarı	5 **	11 11
Sita × Radha	5 11	19 10
Sita × Bonavia	3 11	12 11
Sita × Padshah	11 "	31 31
Maculata × Ulta	7 19	1) 11
Benam x Dilfareb	7 11	11 11
Lucy × Bonavia	15 ,,	9
11 11 11 11	15 11	1 germinated
v c .v (Un-	5 germinated and 3 perished
Lucy × S. Marco	counted f	0.1
" " ' (Counted	r germ'nated
Dil Awèz × seedling from } Holland	25 seeds {	2 ,,
0	25 11	2 31
Alma × Dilfarèh	38 .,	2 (1
S. Marco × Lucy	Un- }	2 germinated and
	counted 5	perished

Here is a lot of twenty different pistils crossed with the pollen of their peers, and apparently producing among them upwards of 167 seeds, and all of them worthless; and another lot of seven pistils, also crossed with the pollen of their peers, producing upwards of 103 seeds, eleven of which only were visible; while, on the contrary, eight pistils of the common kinds, crossed with some of the above, produced among them 359 seeds, of which 154 germinated, and 123 are now living, that is, more than a third.

Promiscuous crossing has, in my opinion, this advantage—if the pollen of the desired flower, which should, I think, be applied first, to give it a better chance, do not take, you may have other chances of getting seed, by applying other kinds of pollen afterwards. If the first succeed, I think no harm will result by some of the ovules being fertilised by other pollen also.

It will be seen from the above experiments that in some kinds, even when the pollen sets up some action, it is only in a small number of the ovules contained in the seed vessel that fertilisation actually occurs. If you limit yourself to only one kind of pullen per pistil and wait for the result, the opportunity of obtaining any seed from a plant that is, for getting a large amount of seed with the chance of new kinds coming out of them—I should say, fertilise promiscuously.

(é) The other question I should like to ask is this: —Is it possible for an ovule to be fertilised by more than one pollen grain, either of the same or of different flowers? This, I think, could only be decided by the microscope, and by carefully made experiments on prolific individuals. By watching the result it might be perhaps ascertained whether two distinct characters belonging to two pollen-bearing Amaryllis could be blended with those of a third, used as a seed bearer.

I would conclude by statiog that all the seeds obtained in 1882 and 1883 were subjected to the same treatment, and therefore the want of germinating power, and in some cases speedy death after germination, must have been due either to a want or a deficiency of vitality.

a deficiency of vitality.

After writing the above I read an article on "Sterility in Plants," by Dr. Matthews Duncan, published in the Lancet. It is interesting, and he comes to the conclusion that sterility may result from a large number of opposite causes, besides from interbreeding. E. Bonardia, M.D., Elawah, 7an. 19. [See Gardeners' Chroniele, p. 344, vol. xix.]



NOTES FROM MR. BULL'S NURSERY.

WHAT astonishes one at the entrance to this place this year is the stout growths observable on the Tree Ferns, Zamias, Encephalartos, that constitute the imposing attractions in the big conservatory. This growth is the more remarkable from the fact of the excessive amount of ventilation that is given from a constantly open door next to the street, and the uniformly cool, humid temperature that is maintained. This early and strong growth is doubtless owing in a great measure to this and the large amount of air that is admitted, and to the unusual mildness of the weather up to this time. In a house off from this one the white and blue Iridaceous plant, Marica pacifica, had one of its striking blooms open. It is certainly as handsome as many an Orchid, although belonging to species of the easiest culture. The remarkable Godwinia gigas still continues in bloom, and shows but little if any change in its appearance. Some fine Sarracenias were throwing up their sparsely distri-buted but conspicuous globular blooms in a cool house . of these we noticed S. flavum maximum with a lemon-tinted flower, S. Drummondi alba carrying a fine bold spike, and almost equally tall pitchers. This is a variety of S. Drummondi, the better known plant from Florida, but instead of carrying the rich crimson flowers of that species, it has white sepals and petals with finely mottled leaves or pitchers. S. atrosanguinea, with creamy-white blooms and green style; S. crispata, with broadly marked reticulate pitchers and whitish flowers, and S. psittacina were also to be seen in bloom, the whole collection forming a seldom seen exhibition in itself. Tillandsia Lindeni vera, of the most beautiful purpleblue, and bright rosy bracts, had a flower open in a warm pit, the beauty of this plant exceeding, if anything, that of T. Lindeni.

In the Masdevallia-house the pretty M. Harryana acanthilolia was throwing up a few of its shining flowers of rosy-pink, the bright M. splendens, M. ignea Massangeava, M. militaris, and the more curious yellow and brown M. triangularis—this last being literally loaded with bloom, that was decidedly effective as a mass. In a house where Cattleyas formed the major portion of the contents, and where some very large plants of well-known and rarer kinds were standing in most vigorous health, as was indeed the whole of the collection, we saw a particularly fine C. Trianæ regioa, the rosy-lilac sepals and petals, and intensely dark purple lip and yellow throat, marking a beautiful and distinct thing. A very finely coloured variety, named C. T. splendida, had superh colours; but the choicest seen open was C. T. magnifica, with dark maroon lip that contrasted finely with the creamy-white tints of the rest of the blooms. Another fine Cattleya, exhibiting a much larger yellow mass in the throat and very large rosy sepals, is C. T. aurea grandiflora; this is very distinct and choice. In this division the somewhat rare Lælia Lindleyana had opened a few creamy-white, faintly spotted with crimson, blossoms. The great banks of Vandas, Lælias, and Cattleyas have an appearance of splendid health rarely seen. The Chatsworth var, of

Coclogyne cristata, so useful as extending the flowering season of these beautiful white bloomers, had a great mass of flowers open on several plants, as had the yellow-throated and somewhat earlier C. Lemoniana. The richly-coloured Miltonia cuneata could also be seen, but its beauties had begun to fade.

Of Cypripedium novelties not many had opened their blooms, or we failed to observe them, C. Hartwegii being apparently the most striking thing out, for although lacking the deeper hues and white of other kinds, the long and branching habit of the flower-stalk, surmounted with the elegant, long-winged green flowers, make it a pleasing addition to collections. We noticed a beautiful lot of Odontoglossum Phalenopeis, fine stocky plants, evidently at home near the glass in a well-ventilated cool house. Without attempting the enumeration of all the fine Odontoglossums to be found now in bloom here, it must suffice to point out the more noticeable of this remarkable collection. O. Halli leucoglossum, O. crispum roseum-the latter with a rosy suffusion in the petals; O. membranaceum, similar to an O. Cervantesi, but without spots, and with fewer of those circular bar markings; O. Ruckerianum, having also the pink shading notice-able in O. crispum roseum; O. Œrstedii, a rarer kind, pure white, with a yellow eye; O. Jenningsianum pauciguttatum; the pretty O. Chestertoni, and O. Pescatorea aurantiaca, a variety with the additional attraction of having a distinct orange crest; many O. crispum of varying form and tints, made with the before-named varieties, and several of O. luteum, an elegant kind; O. odoratum, O. hystrix, and O. Roezlii, a charming exhibition; the house, owing to the foreshortening of the perspective, as seen from the end, appearing to be quite filled with bloom; and there are, in fact, more than 200 spikes open, or about to become so. The O. vexillarium houses contain many splendid plants, and an immense number of smaller ones, in perfect health, dwarf, stocky, well furnished, and which, when in bloom, must form a fine exhibition in themselves.

An Oncidium Marshalli is about coming into bloom; it has many flower-spikes, and should be a fine object in a short time. O. Edwardi, with a hundred flowers open, was also a pretty sight, as was also a group of Sophronitis aurantiaca, but conspicuous among which was S. coccinea, a variety of far more brilliant colour, and against which the former appears of a rusty-red.

In the house appropriated to Dendrobes chiefly several D. crassinode, and foremost amongst these last D. c. Barberianum, by far the richer of the type; D. Paxtoni, and the beautiful rich golden D. fimbriatum occulatum. A few D. Wardianum were also in bloom, and the handsome, easily managed Phaius Blumei.

Amongst the more miscellaneous plants were to be sen some of the latest additions to useful hardwooded plants, Epacris onosmeflora, flore-pleno alba, and E. o. plena nivalis producing pretty minute rosettes of bloom on loog flowering shoots, the first-named being blush-white and the latter pure white. Another plant likely to prove of considerable value for early forcing, and possibly for out-of-doors planting, is an Azalea cross between A. indica and A. mollis, the foliage being that of the latter, and flowers rosy-lilac, in clusters. M.

COLONIAL NOTES.

ADELAIDE, SOUTH AUSTRALIA.-Presentation to Dr. Schomburgk.-In September last a meeting was convened of the friends and admirers of Dr. Schomburgk, Curator of the Adelaide Botanic Gardens, for the purpose of considering the best means of practically recognising the valuable services rendered to the colony by that gentleman in the cause of botany. It was then decided that his portrait should be painted and permanently placed in some portion of the Gardens under his care. A committee was formed, subscriptions were obtained, and the task of producing a painting of Dr. Schomburgk was entrusted to Mr. L. E. Tannert, Master of the School of Art. All the necessary preliminaries having been completed, it was that a public presentation of the painting should be made to the Board of Governors of the Gardens, and his Excellency the Governor was requested to perform the formal ceremony. On Janu-

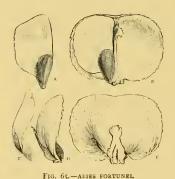
ary 30 the Museum of Economic Botany, situated in the very centre of those beautiful Gardens in which Dr. Schomburgk takes so much pride, was converted into a temporary hall. The painting was hung over the northern interior door, and bore the following inscription: - "This portrait of Richard Schom burgk, Ph.D., &c., is presented to this Museum by a number of his friends, in appreciation of the zeal energy, and skill which he has devoted to rendering the Botanic Gardens an ornament to the City of the botanic Gardens an ormanent to the City of Adelaide, and the pride of the Province of South Australia."—His Excellency the Governor having made the presentation in terms highly eulogistic of the valuable service rendered by Dr. Schomburgk, and the portrait accepted by Dr. Wyatt, the oldest Governor of the Botanic Garden, Dr. Schomburgk said he could not, even if he so desired, appropriate to himself the credit which was also due to those who had been instrumental in bringing the Gardens to their present state. Firstly, much was due to the Legislature for its liheral annual vote; secondly, a considerable amount of praise belongs to the late Mr. George Francis, who was the first Director of the Gardens, and who planned and designed the first portion of them. He need not say that when a good and substantial foundation had been once laid it became a comparatively easy task to add to the superstructure, the only difficulty to avoid being that



FIG. 64. -ABIES FORTUNEI: CONE.

The Arboretum.

ABIES FORTUNEI,—Thaoks to the courtesy of Messrs. Rovelli, of Pallanza, we are now enabled to give illustrations of the foliage, cone, seed-scale, and bark of this remarkable Conifer (figs. 64—67). A fine tree exists in Messrs. Rovelli's nursery, from which they have secured seed. This tree is little known in this country, where the climate seems generally unsuitable for it, but in the south and west coasts, in southern Ireland and the Channel Islands, as also in many of our colonies, this tree ought to find a congenial home. It is a singular fact that up to this time but one tree of this kind is known in its (presumed) native country—that originally met with by Fortune in the vicinity of a temple at Foo Chow Foo, in China. Fortune speaks of it as a magnificent tree with the habit of a Cedar of Lebanon, with beautiful erect purple cones, thickly grouped like rows of soldiers, on the branches. No other tree of this species, is, as we have said, known, except those raised from Fortune's seeds. From this circumstance, and the fact of its situation in the grounds of a temple, it is probable that the tree was introduced to Foo Chow Foo, and that its native habitat will sooner or later be discovered. Meanwhile, it is satisfactory to know that Messrs. Rovelli can supply seed and plants sufficient to obviate the risk of extermination of so remarkable a tree. It was introduced to this country under the erroneous name of A. jezoensis, and to the late Andrew Murray is due the credit of disentangling the consistency of the produced in our columns, 1851, p. 311, is approximately correct, but the coose are decidedly erect, not pendulous. It was considered to form a link between the Spruces



A, Seed; B, Seed scale and seed; C, Side of seed; D, Side of seed-scale, showing bract; E, Bract and seed-scale.

particularly thick corky character, quite unlike that of any other Conifer that we can recal, and much more like that of a Cork Oak. M. T. M.

Home Correspondence.

Tree Protection on Open Walls.—Mr. Smith (p. 317) seems to place great dependence on copings as a protection to wall trees, and, I think, rightly too, as it is of the utmost importance that the walls and blossoms be kept dry, in which condition the bricks are many degrees warmer, and frost and cold have much less effect. A board coping, however, is only a makeshift, as, though it answers the purpose of throwing off wet, it excludes the light from the tops of the trees, the shoots on that part of which, when under tis influence, seldom set any blossoms, and the young growth comes weakened and poor. Some object to glass copings on account of their being permanent or immovable, but those who are against them on that score cannot have experienced their great utility at the time fruit is ripe, when it frequently happens we get a glut of rain, as we did last year, with much wind, when Peaches and Nectarioes that were exposed were sorely damaged, and mary spoiled, while those

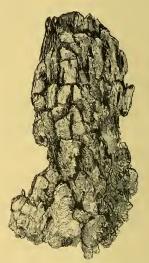


FIG. 66.—ABIES FORTUNEI: PORTION OF THE BARK.

of spoiling the design by attempting too much. The services of Mr. Francis have not been altogether forgotten, and an obelisk has been erected to his memory in the Gardens. It would be a source of gratification to him if he could see his portrait placed side by side with his own. Much was also due to the Board of Governors of the Gardens, to whose support and assistance he was indebted for a great part of his success. He had been associated with most of the present members of the Board ever since he was appointed to his present office eighteen years ago. For the whole of that long period, during which he had laboured under those gentlemen, their intercourse had been one unbroken chann of cordiality, earnest co-operation, and kinduess. Indeed the confidence they had reposed in him had supported him through many difficulties, and rendered his labours comparatively light. The founding of this Museum of Economic Botany (in which his portrait has been placed) had been one of the many objects of his great solicide. The high estimation in which he left proud to say it is held by the public, and the never failing interest it excites and maintains, was a substantial reward for all the pains he had taken to make it what it is.

THE BASINGSTOKE HORTICULTURAL SOCIETY'S eighth annual exhibition will be held at Goldings, Basingstoke, on August 19.

(Picea) and the Silver Firs (Abies), but, in truth, it is very much more nearly allied to the latter, of which it has the flat leaves, the smooth stem, and the erect cones. The scales of the latter, however, are stated to be persistent not deciduous, but in our specimens the scales manifest a tendency to fall away—if we would let them! The male flowers we have not seen, but at present the evidence seems to point to the fact that this is a true Abies, and that the genus Keteleeria, formed to receive it, is not really necessary. The buds are small, vooid, covered with orange-brown scales, the lower of which are prolonged into a long thread-like point. The branches are glabrous, of an orange-red colour; the leaves are of a pale yellowish green on both surfaces, dispersed more regularly round the stem than is usually the case in species of Abies, that is to say, they are less twisted at the base; and this circumstance is probably due to a difference in the arrangement of the branches—a point on which we cannot speak with certainty. The leaf structure shows a double layer of hypoderm beneath the upper epidermis, a single layer above the lower skin with two resin-canals close to the latter and near to the margins. A central fibro-vascular bundle, surrounded by a "whonle-sheath," traverses a mass of "transfusion tissue," and there are palissade cells on the upper surface. The cones vary considerably in size, and when dry are of a dull bluish colour, with a glaucous bloom, like those of Pinus Cembra. The bracks vary in shape and size, but when young are lanceolate and acuminate, the point being broken fast she cone ripens. The brack for the trunk is of a

under shelter escaped, and were none the worse for the weather. Apricots, when ripe, are very tender in the skin, and if they get wet at that time perish wholesale, a striking proof of which we had here some years ago when one of our walls was coped and the other unprotected, as the fruit on the latter became hadly specked and damaged, and had to be used for jam and cooking, while that on the trees with glass over them was perfect and nearly all fit for dessert. The thing in putting up copings is to have them proportionate to the height of the walls, which, if 10 feet or so, should not have a coping wider than about 18 to 24 inches, as, when they project far, the air is too confined, and becomes very hot during the summer. To counteract any bad effect from loss of night dews and rain on the foliage it is necessary to syringe or use the garden englies so as to well wet the leaves during the afternoon in summer, which, with the requisite watering of the trees when swelling their fruit, will keep them in a high condition of health. Mr. Smith, though advocating copings, says he looks upon any front protection as a great evil, in which I entirely differ from him, as the coping, though of great use to secure dryness, will not keep off beating rains and driving hail or soow, which, unless the trees have something before them, are carried on to the face of the wall, and the object and purpose of the coping in a great measure defeated. Thick opaque screens I hold quite a mistake, unless they can be put up and down quickly night and morning, and not used to obstruct light and sun, every portion of which the

blossoms need to keep them healthy and strong, Fishiag-nets, strained tight, applied double for the meshes to cross, keep off so little of either, that I am quite in favour of them, and have some on contoually; as not ooly do they ward off hail, snow, and rain, but they sift the keen wind, and take out its sting, for, open as they are, it is surprising what a difference there is in temperature behind them to that prevailing in front of a wall where nets are not used. 7. Sheppard.

Birds and Peas: a Curious Fact,—In November, 1882, I sowed two lines of Peas, old Daniel O'Rourke and Carter's First Crop, to come in extra early, in my experimental vegetable garden. There is a wall convenient, where crows, jackdaws, &c., perch, and during the winter months have an unholy propensity for everything peeping above the ground. My early Peas soon disappeared, and I tried Hun-

There is no difficulty in obtaining pollen from almost any variety, but some varieties will not take it. Some of the most difficult are the finest forms of the Leopoldi type. I have a seedling hybrid form of Leopoldi which I have tried with all sorts of pollen, and at all times, and failed to get a single seed from it. The variety in question might be hybridised by the pollen of a common form, but it would not be worth while to try it except by way of experiment. It is a very expensive business raising seedling Amaryllids in sufficient quantity to obtain good results, and labour would be wasted in trying to raise seedlings from other than the very best varieties. J. Douglas, Great Gearies.

The Gooseberry Caterpillar.—As every year this pest is more or less abundant, a little trouble at this season of the year will completely exterminate them. Get some fresh tan from the tan-yard, and

in the habit of every day cutting sections of one or more tubers, and I have never once found a Potato diseased by Peronospora in the centre when its exterior did not show traces of infection. Many years is an indefinite period, but I can assure Mr. Smith these observations have been continuously carried on by me for the past thirty years; rarely have I missed a day. As a rule, more than one Potato has been sliced by me; so that 30 × 365 = 10,950 tubers examined, not one of which has shown the centre diseased by Peronospora, while the exterior remained sound. I admit these tubers had been subjected to a temperature of 212° F. before I sliced them, but although Mr. Jensen tells us 77° C. is fatal to the vitality of the Peronospora, yet it requires a higher temperature than 212° F. to obliterate all traces of the disease. Before I sliced these 10,950 tubers each one had been washed, and in most of them the epidermis had been removed; during these processes the disease was almost invariably discovered, and the tuber rejected; but if the disease had commenced inside first then it would have escaped detection during the preliminary processes, and it would not have been observed until the sections were made. I do not deny that it is possible for Potatos to decay in the centre first—decay may begin anywhere; but I am only speaking of that form of decay induced by the presence of Peronospora infestans. Charles B. Ploweright, 7, King Street, King's Lynn, March 4.

Peculiar Tree Growths,—When at Aber last week a rather curious case of the junction of an Oak

Peculiar Tree Growths,—When at Aber last week a rather curious case of the junction of an Oak and Ash stem was pointed out to me. For over 2 feet in height these stems were so closely united that unless by a very careful examination the junction could not be detected. It is quite possible that as the trees were growing close to each other and alongside a public pathway they may, when of a small size, have been inarched and bound together by some one in passing. At Gwydyr Castle I noticed another curious case, in which the branch of an Oak tree terminated in the main stem at a distance of 3 feet from the point whence it originated. The diameter of the branch is about 6 inches, and so uniform in size that it is rather a difficult matter to state from which end the branch sprang out. A. D. Webster.

Saxifraga oppositifolia var, splendens,—Of the many varieties of this pretty native rock-plant I know of none to equal this in depth of colour and for producing a mass of bloom. I helieve it was originally found by Mr. Backhouse on the Welsh mountains. At the present time it forms grand sheets of rosy-crimson on the rock garden at Vork. It prefers being planted on raised mounds, or in crevices, &c., in sandy loam. R. P.

British Ferns.—Mr. Druery (p. 281) has done good work in bringing before your readers a plea for that much neglected class of plants—our native Ferns. It is certainly to be regretted that so few take a direct interest in these plants, and their almost numberless varieties, many of which equal, if not excel, in point of beauty, as well as ease of culture, their exotic brethren, on whom so much care is usually lavished. The high price of British Ferns is no doubt, at least in many cases, a serious drawback to the forming of anything like a large collection of these plants, for it is not every one who would care or can afford to pay at the rate of a couple of shillings each for most of the kinds coumerated in the choice list which Mr. Druery has kindly placed before your readers. But, on the other hand, those who really take an interest in these plants will find ways and means, apart from buying, of obtaining even the most choice varieties, as many kinds may be readily enough raised from spores, while the plant exchange system affords peculiar advantages for the obtaining of new and rare specimens. In this county (Carnarvonshire) one of the best districts in Britain for Fern collecting, I am above the mark in stating that there are not halfadozen collections worthy of the name, or that would repay one for the trouble of a visit. In conclusion, I hope Mr. Druery's remarks will have the desired effect, in not only promoting a desire for, but in furthering the cultivation of this elegant and interesting class of plants. A. D. Webster.

Apple Cracking.—The peculiar split or sutured form seen on Mr. Bunyard's Apples referred to at p. 313 by Mr. Berkeley, the samples of which I saw, seem to be peculiar to certain of the Russet family, though more abundant in some years than in others. Probably few familiar with Apples but can remember, even from their earliest years, the sutured Russets, so crisp and sweet, seeming almost like split Cherries, all the sweeter for the contortion. I would refer, however, to the fact that very much in excess of ordinary experience this splitting or suturing was seen in some kinds of Potato, especially round ones, during the past season, quite deforming them out of all knowledge and usefulness. This peculiarity was ascribed first to checked growth and setting of the skins by drought, and then to forced expansion by

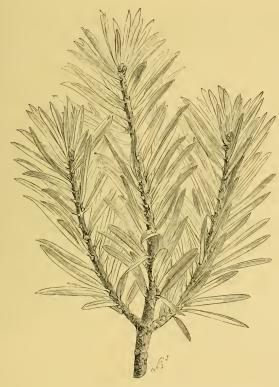


Fig. 67.—Foliage of abies fortunei. (see p. 348.)

dredfold, rolled in red lead, about January, as I thought mice were helping the rooks; these were wouldly thinned too, though I put some hundreds of yards of thread over the lines. Lastly, I put down, about the middle of March, Pride of the Market and Stratagem, without any protection at all, and they were unmolested; in fact, the birds did not appear at all. I have come to the conclusion that about this time those destructive birds are so engaged in nest building, and have so much field food, as not to come near houses, so I am only sowing my Peas now this year. W. 7. Murphy, Clonnel.

Hybrid Amaryllis—Are we to understand from the remarks of Dr. Bonavia, at p. 307, that hybrid forms of the Amaryllis cannot be fertilised with their own pollen? If the Dector thicks so I should say that his experiments have not been sufficiently exhaustive. I fertilised seven blooms of a highly-bred variety with their own pollen two years ago, and from those seven pods raised 750 plants. With the pollen of that variety I tried to cross other hybrid forms, and failed in some cases, but was successful in others.

cover the surface of the ground all round the Gooseberry bushes, 2 or 3 inches thick; let it remain till the autumn or winter, then dig it in. Care must be taken that the tan is fresh, or the result will prove a failure. \mathcal{T} . G. Hill.

Potato Disease.—In a communication upon this subject at p. 283 Mr. Smith says of the Potato disease "that in a very large number of cases the disease starts from the interior of the Potato tubers and finds its way to the outside, often after storing, and during the winter and spring mouths. At the time of lifting it is by no means uncommon on cutting open an apparently sound Potato to find a small disease patch in the middle." While I agree with Mr. Smith that the mycelium can and does hybernate in the tubers throughout the winter and produce condida in the following spring, yet I am certain he is wrong in supposing it ever commences in the centre of the tubers. I am sure it invariably begins from the outside, and works its way inwards. I am in a position to speak confidently upon this point, for the very good reason that for many years past I have been

warm rains and healed soil. Whatever may have been the operating cause, however, the features referred to were seen in unusual abundance. A. D.

Zinc Labels.—A capital label for pot plants is sold by Messrs. Veitch, of Chelsea, under the name of "the Glenny garden label." It is 5 inches long of "the Clenny garden label." It is 5 inches long and 1 inch broad, rounded at the top, well pointed, and neatly finished. These, if written on with 0 sman's indelible ink and thinly varished, are practically indestructible. For the hardy border I find them too small, and get some made 8 inches long by 14 inch wide, out of ordinary sheet zinc. They can be readily cut out with a timman's shears, and, though rather rapph asswer their nuroose very well, and are inficut out with a tinman's snears, and, though rather rough, asswer their purpose very well, and are infi-nitely superior to wood labels. The point to remember with these labels is to get a clean and bright surface to the zinc immediately before writing on it, for if dirty the ink will not readily "take" to the label, neither will it stand so long. The surface can be easily cleaned with a bit of fine glass-paper. For outdoor use varnish is nuncecessary. John C. Tallack, Prideaux Place, Padstow, March 10.

Peports of Societies.

Royal Horticultural : March 11.

SCIENTIFIC COMMITTEE.—Sir J. D. Hooker, K.C.S.I., in the chair. Present: Lord Enfield, Messrs. Smee, Grote, Loder, Houston, Mangles, Wilson, MacLachlan, Murray, Ridley, Professors Church and Foster, Drs. Lowe and Masters.

Mushroom Spawn.—A letter was read from the Rev. M. J. Berkeley, referring to the capriciousness of the mycelium of Mushrooms under cultivation.

of the mycelium of Mushrooms under cultivation,
Alteration of Habit in Pellia,—Mr. G. Murray
showed plants of Pellia epiphylla which in consequence of being grown under a bell-glass had assumed
an erect habit, very different from its usual condition.
Abite (Keteleria) Fortunci.—Dr. Masters showed
foliage and cones of A. Fortunci together with slabs
of its corky bark received from MM. Rovelli, of Pallanza, in whose nursery the tree assumed large proportions (see p. 348).

portions (see p. 348).

Pica Omorika.—Dr. Masters showed cones, &c., of the Servian Spruce, procured through the mediation of Mr. Nicholson, and figured in the Gardeners' Chronicle, p. 309.

Burr-knot in Ribes.—Dr. Masters showed from Mr.

Webster, The Gardens, Gordon Castle, a specimen of red Currant in which there was a large production of ted currant in white there was a range processor buds and shoots, the main stem being arrested in growth, thus producing an appearance like that of the knots in the Beech now recognised as the work of a mite (Phytoptus). The specimen was sent to the Kew Museum.

Phalanopsis Stuartiana.—Mr. O'Brien showed

flowers of this species grown by Major Lendy, and in

flowers of this species grown by Major Lendy, and in which the lateral petals presented in the centre of the upper surface indications of a crest like those on the lip. The important point was, that this peculiarity was constant in this variety.

Hyacinths Grown in the Dark.—Mr. Smee showed flowering bulbs of a red, blue, and almost white Hyacinth respectively, which had been planted and covered with a drain-pipe, the mouth of which was covered with a drain-pipe, the mouth of which was covered with a drain-pipe, the mouth of which was covered with a cool and perfume of the flower were lanked, and the size not greatly below the averwell marked, and the size not greatly below the averinches. The colour and perfume of the flower were well marked, and the size not greatly below the average; the leaves were of a sickly green at the top, yellowish at the back. It was pointed out that the experiment was bardly a crucial one, inasmuch as the nutritive matter out of which the colouring principles were formed was already contained in the bulb. Gumming in Fruit Trees.—Referring to the article of Dr. Beijerinck, summarised by Sir James Paget in a recent oumber of the Gardener's Chronicle, Mr. Plownight sent specimens received from Profession.

Mr. Plowright sent specimens received from Prolessor Oudemanns affected with Coryneum Beijerinckii,

sor Oudemanns affected with Coryneum Beijerinckii, together with a sketch of the spores, of which we shall shortly give an illustration.

Canker in Apples, &c.,—Mr. Plowright sent specimens of three different affections, each called canker. One on Hawthorn was perhaps the consequence of insect puncture; a second, on the Apple, caused by Nectria ditissima, alias N. cicatricula, which is not uncommon on the Beech. The third form is a distinct affection, of which nothing can be predicated. As the Coryneum is stated not to be able to pierce the bark without the help of an insect, why, asks Mr. bark without the help of an insect, why, asks Mr.

the Coryneum is stated not to be able to pierce the bark without the help of an insect, why, asks Mr. Plowright, may not the Nectria be in like case?

The Jensenian Plan of Preventing the Potato Discase.—Some suggestions as to practical experiments to be carried out at Chiswick with reference to this subject were read from Mr. Plowright, and it was suggested that a sub-committee, consisting of persons specially interested in the matter, should be appointed to watch the experiments. to watch the experiments.

Apples Preserved in Sand .- Lord Ducie sent speci-

mens of Courl-pendu Plat and Duke of Devonshire

mens of Court-pendu Plat and Duke of Devonshire Apples preserved in dry sand.

Epidendrum rhicofhorum.—The Hon. and Rev. **International Professional Profess

FLORAL COMMITTEE. — Present in Section A. G. F. Wilson, Esq., in the chair; Messrs. T. Moore, J. Hudson, J. Fraser, H. Herbst, J. Woodbridge, H. Ballantine, J. Dominy, J. O'Brien, E. Hill, J. Laing, Dr. Masters, and the Rev. G. Henslow, Section B. J. T. D. Llewlyn, Esq., in the chair; Messrs. H. Eckford, H. Bennett, W. Bealby, J. Douglas, J. James, J. Child, G. Duffield, H. Turner, and H. Cannell. The chief points of attraction at the meeting on Tuesday last were almost identical as regards the genera of plants shown with those of February 12, Cinerarias, Cyclamen, Primula sitemsis forming the major portion, with but few Orchids or other subjects to relieve them. Mr. Anthony Waterer, Knap Hill, Woking, showed two large, well bloomed specimens, and a few small ones, of Andromeda japonica, which were greatly admired; also a large collection of hardy Polyanthuses and Primtoress, some of the forms of which, as well as the colours, being particularly good; two of the prettiest of the hardy Frimroses were named Princes of Wales and James Douglas. Mr. H. B. Smith, St. George's Nursery, Ealing Dean, had a fine well-grown collection of Cyclameos, principally persicum giganteum varieties, and including most of the shades of colour now seen in these flowers. The flowers of the show were, undoubtedly, the Cinerarias of Mr. James, Woodside, Farnham Royal; a more beautiful FLORAL COMMITTEE. - Present in Section A .: of colour now seen in these flowers. The flowers of the show were, undoubtedly, the Cinerarias of Mr, James, Woodside, Faraham Royal; a more beautiful lot, whether in regard to the size of the individual blooms, their perfection of form, or richness of colour observable can hardly be imagined. There was once the fear that the Cineraria had lost position as a greenhouse plant; but in view of these ine seedlings such fear is now quite illusory. A few of the most distinct and perfect in form had received names, vir., Pollie Charming, with even, overlapping florets of a rosy-purple, and a white ring round a dark eye. Royal Standard, a rich crimson sell, and Challenger, a full metallic-blue, very intense. From Messrs, Veitch & Sons, Chelsea, came four specimens of their hybrid Amaryllis, good in shape and colouring, and showing eminently the decided advances made by them in these plants, of which more may be known by reference to p. 328. decided advances made by them in these plants, of which more may be known by reference to p. 338. A sort oamed Ne Plus Ultra, a very large scarlet, with somewhat reflexed segments and a not too regular outline, and General Graham, a dark crimson, with but little green colour in the throat, were very superior. General Gordon, a dark crimson, and Wm. Goldring, a flower having much green in the centre, were but little behind those first enumerated. This firm showed also a very pretty rose-pink flowered variety of Azalea ameena named Little Beauty, and which was raised by Mr. C. M. Hovey, of Boston, U. S. A.; also a lemon-coloured Freesia, named Leichtlin, likely to be as useful as L. refracta alba, as it is apparently equally free blooming. named Leichtlini, likely to be as useful as L. refracta alba, as it is apparently equally free blooming. Rhododendron Priocess Beatrice, a lemon-shaded pink variety, of the tender section of these plants; a pretty group of Staphylea colchica, nicely in bloom, the pure white of this being much admired; the rosy-purple Pinguicula caudata and Prunus tomentosa, a vary floriferms, early bloomer, the flowers white with the pure white of this being much admired; the rosypurple Pinguicula caudata and Prunus tomentosa, a
very floriferous early bloomer, the flowers white with
a pink envelope. Messrs. Barr & Son hadi a large
quantity of the handsome Narcissus pallidus przecox,
which were intermixed with Anemone fulgens; and
A. F. multipetala, the latter forming an almost
double flower, at least in early morning. Messrs.
Collins Brothers & Gabriel, 39, Waterloo Road,
showed a bright mass of the Tenby Daffodil,
also associated with Anemone fulgens multipetala.
Messrs, Cannell, Swanley, showed a pair of plants of
the little known Streptosolen Jameson; that attracted
considerable attention, the colour being a pretty shade
of orange, the habit free, and the cultivation of the
easiest. A collection of Cinerarias and the Begonia
Carriert, this last being in the way of floribunda, a
decidedly useful winter bloomer, with pure white
blossoms, that are produced in great oumbers, which
if they do fall off in great quantities, are reproduced
equally as rapidly. Mr. Henry Bennett, Shepperton,

brought two of his new pedigree Roses—Grace Darling, a hybrid Tea, of a very bright shade of pink, the reflex of the petals being creamy-white, the flower being fairly full for a winter Rose and delicately scented; Cleopatra, the other, somewhat past its best, but very sweet. Some enormous Amaryllis came from Messrs. Paul & Son, Cheshunt. Tree flowers were rather coarse, and green preponderated in the colouring, still the plants have an imposing appearance, and would be capital subjects to place amongst robust plants in big conservatories. Mr. Wiggins, gr. to W. Clay, Esq., Kingston-on-Thames, exhibited three named varieties of Cinerarias and three also of Cyclamen, but not distinct enough to obtain the recognition of the jurors. Mr. R. Dean had twelve Polyanthuses and Primroses of surpassing colours and form—Cloth of Gold, yellow, with an brought two of his new pedigree Roses-Grace Darhad twelve Polyanthuses and Primroses of surpassing colours and form—Cloth of Gold, yellow, with an orange eye; General Gordon, crimson, with a yellow eye; Royal Purple, purple, with a yellow eye; and Kovelty, a puce, beiog amongst the best of these. This exhibitor had also the hose-in-hose Polyanthus, which later on served the Rev. G. Henslow as a text for an interesting between Asserting the Company of the Company of the Rev. G. Henslow as a text for an interesting between Asserting the Company of the Company This exhibitor had also the hose-in-hose Polyanthus, which later on served the Rev. G. Henslow as a text for an interesting lecture. A group of Primula sinensis named Queen Victoria, a bright crimson, was staged by Mr. J. Odell, florist, Hillingdon, Saxifraga oppositiolia major, S. sancta, a pretty yellow, oicely in bloom; the slate-blue coloured hardy Primrose, Scott Wilson, rather pretty and dwarf; It is reticulata, and Soldanella montana, were shown by Messrs. Carter & Co., Holborn. A large plant of Lealia superbiens, with thirty blooms, came from Mr. G. W. Cummings, gr. to A. II. Smee, Esq., The Grange, Wallington, with the pretty Ceology nor sparsa, and other small specimens of Orchids. A Violet with the general appearance of The Cara, named Wellsiaca, was shown by Mr. Wells, Fern Hill, Windsor Forest. Mr. Ballantine, gr. to Baron Schrueder, Egham, showed that perfect gem amongst cool Orchids, Odontoglossum Pescatorei Veitchianum, which was furnisbed with one long spike of its remarkable beautiful blossoms; and Mr. Salter, gr. to J. Southgate, Esq., Selborne, Streatham, Dendrobium Findlayanum giganteum, a very fine variety, with four blooms. An Azalea, a hybrid, came from Mr. Todman, gr. to J. Connel, Esq., Eushey Downs, Streatham, the colour being white, with a lemon suffusion in the cectre. Mr. J. Edmonds, florist, Hillingdon, exhibited there new hybrid Cyclamens, of which one called Princess Ida, a delicate blush-tinted one, was most pleasing. A splendid variety of Cateleya Trianz, named splendidissima, came from Mr. Hillingdon, exhibited three new nybrid Cyclamens, of which one called Princess Ida, a delicate blush-tinted one, was most pleasing. A spendid variety of Catleya Triane, named splendidissima, came from Mr. B. S. Williams, Victoria Nursery, having four beautiful blooms, the petals of which were of transparent white, very broad, sepals also white and narrow, and intense dark purple lip without margin. A good scarlet-flowered Abutilon Scarlet Gem came from Mr. Steveas, nurseryman, Futney, which should prove a good thing as a bedder, the outside colour being quite equal to that of the iosade. J. H. Mangles, Esq., Valewood, Haselmerce, exhibited a plant of Rhododendron grande, a massive-looking variety, with very large flower-heads, the individual flows having a resemblance to those of Yucca gloriosa—the young truss is lemon-rose, afterwards becoming pure white when fully open. The same gentleman showed cut blooms of Rhododendron grande argenteum, a grand truss, baving large creamy-white blossoms, and the foliage measuring nearly a loot in length.

The awards were : -

FIRST-CLASS CERTIFICATE.

Section A.
To Mr. B. S. Williams, for Cattleya Trianæ splendidissima.

To Messrs, J. Veitch & Sons, for Rhododendron

Princess Beatrice.
To Mr. C. J. Salter, for Dendrobium Findlayanum

giganteum.
To Messrs. H. Cannell & Sons, for Streptosolen Jame-

n.

Section B.

To Messrs. Veitch & Sons, for Amaryllis Ne Plus

Ultra.
To Messrs. Veitch & Sons, for General Graham.
To Messrs. Veitch & Sons, for Azalea amoena Little

To Mr. James, for Cineraria Royal Standard,
To Mr. James, for Cineraria Pollie Charming,
To Mr. James, for Cineraria Challenger,
To Mr. Todman, for Azalea indica Mrs. Alfred Heaver. To Mr. A. Waterer, for Hardy Primrose Princess of

To Mr. A. Waterer, for Hardy Primrose James

Douglas.
To Mr. Wells, for Violet Wellsiana.
To Mr. H. Bennett, for Hybrid Tea Rose, Grace

Darling.
To Messrs, Cannell & Sons, for Begonia Carrièri.
To Mr. Edmunds, for Cyclamen (persicum giganteum)
Princess Ida.

FRUIT COMMITTEE.—Present: II. J. Veitch, Esq., in the chair; Messra. P. Crowley, J. Lee, J. E. Lane, G. T. Miles, W. Paul, J. Burnett, G. Eunyard, S. Lyon, G. Goldsmith, A. Howcroft, and

J. Roberts. Messrs. Veitch & Sons were awarded a bronze medal for their collection of fifty varieties of Apples grown on their Southfield nursery. These exhibit in an admirable manner the capabilities of the Apples grown on their Southein unitery. These schibit in an admirable manner the capabilities of the light land at Fulham when well manured and carefully managed. The fruit was clean, free from speck or blemish, and had been well preserved, but few kinds showing a withered condition. Mr. J. Burnett, gr., The Deepdene, Dorking, contributed a somewhat smaller collection of Apples, amongst which were Shepherd's Seedling, a conical, useful-looking fruit, with a yellow skin; good-sized Calville Blanc, Norfolk Beaufin, and Wellington. A nice-looking seedling Apple was exhibited by Mr. Allan, gr., Gunton Fark. Mr. Gilbert, gr., Burghley, showed a new hybrid Cabbage, the result of a cross between his Chou de Burghley and a Savoy: which variety of the latter had been made use of was not stated. The Cabbage shown was firm, white-hearted, and of a medium size; if it is as hardy as the best strain of Chou de Burghley it will prove of considerable value in hard winters. Good useable specimens of the Chou de Burghley were also shown by the same exhibitor. the same exhibitor.

Manchester Horticultural Mutual Improvement: March 6.—Mr. Bruce Findlay, the President, in the chair. This was the closing meeting of the first session, and the report of the committee, read by the Secretary, Mr. Swan, congratulated the members upon the work done since the Society was formed in October last. The number of members at present on the books was 123, and Mr. Robert Tait, the Treasurer, said the session ended with the balance on the right side. A brief discussion ensued upon the class of papers it was most desirable to have read at the meetings, the general opinion being that as heretofore they should be of a mixed character, and include bottany and practical horticulture. The motion was then agreed to, and a member suggested that a branch should be established in connection with the Society for the benefit of members in sickness or in needy circumstances. The idea seemed to find lavour with the meeting, but at the subject should be brought forward for consideration next session. Manchester Horticultural Mutual Improve-

Chemical.—"On the Composition of the Ash of Wheat Grain and Straw, grown at Rothamsted in different Seasons and by different Manures." By Sir J. B. Lawes and Dr. J. H. Gilbert.—This paper gives an account, including duplicates, of 253 analyses. The ashes were prepared at Rothamsted, being burnt in oblong platinum dishes by surface heat, in order to prevent, as far as possible, any fusion. Every ash is from produce of known history of growth as to soil, season, and manuring. The experiments are arranged in three series. The first illustrates the influence of fluctuation of season from year to year, under three known, but very different, conditions of manuring during sixteen consecutive seasons. The second shows the influence of dour characteristic seasons, two favourable and two unfavourable, under nine different conditions as to manuring. The third demonstrates the influence of continuous exhaustion or supply of certain constituents as it

consecutive seasons. The second shows the influence of four characteristic seasons, two favourable and two unfavourable, under nine different conditions as to manuring. The third demonstrates the influence of continuous exhaustion or supply of certain constituents as it represents the proportionally mixed produce for the ten years 1852-961 and the ten years 1852-97 from ten differently manured plots. In the first series the three plots were respectively—(r) unmanured; (a) treated with 4 tons farmyard manure per acre; (3) treated with about 200 lb. of ammonium sulphate and 200 lb. of ammonium chloride per acre annually. The principal points of interest in the analyses are the relative quantities of potash and phosphoric acid.

The chief conclusions are—that with normal maturation the grain is of nearly uniform composition whatever the manure; that the deviations from normal mineral composition are associated with deviations from normal examples of the product of the product of the product of the product of the grain grown by animonium salts alone shows on the number of the grain than the manure. There was nevertheless an obvious difference in the average composition of the grain in under the different conditions as to manuring. Thus the grain grown by animonium salts alone shows exhaustion of potash, and especially of phosphoric acid. In the second series of analyses the following four seasons were selected: 1852, ad, both as to quantity and quality of produce; 1856, quantity fair, but quality indifferent; 1853, quantity moderate, quality above the average; 1863, very good as to both quantity and quality of produce; 1856, quantity fair, but quality and quality of produce; 1856, capanity fair, but quality and quality of produce; 1856, quantity fair, but quality and quality of produce; 1856, quantity fair, but quality and quality of produce; 1856, quantity fair, but quality and quality of produce in the grain is nearly fair, but quality and quality of produce in the grain shoule; and potash sold and magnesia salt;

deficiency of one or more constituents, having regard to the amount of growth which is induced by the liberal supply of others.

The Wenther.

STATE OF THE WEATHER AT BLACKHEATH, LONDON FOR THE WEEK ENGING WEONESOAY, MARCH 12, 1884.

DAY.	BARO	TEMPERATURE OF THE AIR.				duc fr Gla l'ab	rome- il De- tions om isher's les 6th ition.	Wind,			
MONTH AND DAY.	Mean Reading Reduced to 32° Fahr.	Departure from Average of 18 years.	Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 50 years.	Dew Point.	Degree of Humdity. Sat. = 100.	Average Direction.	RAINFALL
Mar.	In.	In.									In.
6	29.98	+0.05	50.0	33.0	17.0	41.6	+ 2.1	38.2	89 {	E. ; N. N. E.	0,00
7	29.76	-0.17	51.5	32 9	18 6	41.3	+ 0,8	37.1	83	5.E.	0.00
8	29.53	-0.41	48.5	35.0	13.5	41.8	+ 1.3	38 4	83	S.E.	0.19
9	79 33	- 0.60	50.5	39.5	11 0	43 7	+ 3.2	38 2	81	S.W.	0.00
10	29 16	-0.77	52.0	39 8	11 2	43 4	+ 2.8	38 4	82	5.	0 22
11	29.24	— a.6 3	49.5	36.5	13.0	41.0	+ 0.3	39 4	91 {	E.: N.N.E.	0.59
12	29.63	→ 0.28	52.S	37 .c	15.5	47 -3	+ 6.5	41.4	81	S E.	0 00
Mean	29.52	-0.41	50.5	36.2	14 3	42 9	+ 2.3	38.7	85	5,E,	00.1

March 6.—Fine bright morning, dark afternoon and eight.

— 7.—Fog in early morning, fine day and eight.

— 8.—Fine morning, rain in afternoon, fine eight.

— 9.—Fine day and night.

— 10.—Rain from early morning fill 10 A.M. Fine light afternoon, fine eight, sky clear till 10 F.M., then contents.

overcast.

11.—Raioing heavily from early morning till 9.30 A.M.
Overcast day and night.

12.—Fog in early morning. Fine bright day and night.

London: Atmospheric Pressure.—During the week ending March 8, the reading of the barometer at the level of the sea increased from 30.04 inches at the beginning of the week to 30.07 inches by 9 A.M., decreased to 30.06 inches by 3 F.M., and increased to 30.09 inches by midnight on the 2d, decreased to 20.04 inches by 3 F.M. on the 4th, increased to 30.28 inches by midnight on the 5th, and was 29.61 inches by the end of the week.

The mean reading of the barometer for the week at

The mean reading of the barometer for the week at the level of the sea was 29.93 inches, being the same as last week, and 0.15 inch lower than the average of

Temperature. — The highest temperature in the shade in the week was 51°, on the 4th; the highest reached on the 3d was 43°.2. The mean of the seven high day temperatures was 48°.5.

The lowest temperature was 27°, 5, on the 3d; on the 4th the lowest temperature was 42°. The mean of the seven low night temperatures was 34°, 1.

of the seven low night temperatures was 34°.1.
The greatest range of temperature in one day was 18°.6, on the 7th; the smallest was 9°, on the 4th. The mean of the seven daily ranges was 14°.4.
The mean temperatures were—on the 2d, 37°.4; on the 3d, 37°.3; on the 4th, 45°.4; on the 7th, 41°.3; and no the 8th, 41°.8; of these the first two were below by 3° and 3°.2, and the last five were above by 4°.9, 1°.7, 1°.1, 0°.8 and 1°.3 respectively.
The mean temperature was 41°, being 2°.9 higher than last week, and 0°.5 above the average of the week.

The highest reading of a thermometer with blackened bulb in vacuo placed in the full rays of the sun was 99°, on the 7th. The mean of the seven readings was 80°. 6.

The lowest reading of a thermometer with its bulb placed on grass was 20°, on the 3d. The mean of the seven readings was 26°.3.

Rain .- Rain fell on three days to the amount of 0.35 inch.

ENGLAND: Temperature.—During the week ending March 8 the highest temperatures were 57° at Sheffield, 55° at Truo, 53°.7 at Nottlingham; the highest at Bolton was 50°, at Bradford 50°.2, and at Brighton, Bristol, and Blackheath 51°. The general mean was 52

The lowest temperatures in the week were 21°, at

The lowest temperatures in the week were 21°, at Hull, 26°, 42 th Cambridge, 27°, 4 at Wolverhampton; the lowest at Preston was 33°, at Plymouth 32°, 8, and at Liverpool 32°, 1. The general mean was 20°, 6. The greatest ranges were 31°, at Hull, 28° at Sheffield, 27°, 1 at Cambridge; the smallest ranges were 18°, 44 Bradford, 19° at Prestoo, and 19°, 2 at Plymouth. The general mean was 22°, 7. The mean of the seven high day temperatures was highest at Truro, 52°, t, at Plymouth 49°, 8, at Cambridge 31°, at Cambridge 31°, at Cambridge 32°, at Cambridge 33°, at Camb

bridge 49°.3; and was lowest at Bolton, 45°, at Sunderland 45°.2, and at Bradford 45°.3. The general mean was 47°.4.

Sunderland 45.2, and at Bradlord 45.3. The general mean was 47.4.

The mean of the seven low night temperatures was highest at Truro, 40°, at Plymouth 37°.7, at Sunderland 36°.9; and was lowest at Wolverhampton, 31°.3, at Cambridge 32°.9, and at Bolton 33°.3. The general mean was 35°.

The mean daily range of temperature was greatest at Cambridge, 16°.4, at Bristol 15°.1, at Wolverhampton 14°.5; and was least at Sunderland, 8°.3, and at Bradlord and Preston 9°.4. The general mean was 12°.4.

The mean temperature was highest at Truro, 45°.2, at Plymouth 42°.9, at Blackheath and Liverpool 40°, and was lowest at Wolverhampton, 37°.8, at Bolton 35°.4, and at Hull and Bradford 39°.8. The general

35.4, and at 11011 and Diaglord 39.6. The general mean was 40.5; set all was 2.09 inches, at Bolton, 1.69 inch at Truro, 1.58 inch at Plymouth; the smallest fall was 0.35 inch at Blackheath, 0.41 inch at Cambridge, and 0.58 inch at Nottingham. The general mean fall was 1.16 inch.

SCOTLAND: Temperature.—During the week ending March 8, the highest temperature was 55°, at Leith; at Perth the highest was 48°. The general mean was 51°,7.

The lowest temperature in the week was 28°, at Perth; at Aberdeen the lowest temperature was 33°.6. The general mean was 30°.8.

33°.6. The general mean was 30.0. The mean temperature was highest at Leith, 41°.1; and lowest at Perth, 36°.9. The general mean was

Rain.-The largest fall was 1.41 inch, at Perth; and the smallest fall was 0.53 inch, at Glasgow, general mean fall was 0.99 inch.

JAMES GLAISHER, F.R.S.

Enquiries.

"He that questioneth much shall learn much,"-BACON.

PLANT LABELS.—Your correspondent last week asks what has become of the plant label that was awarded the rst prize in the Society of Arts competition two years ago. I would ask further what has become of the Society's award for last year's competition for permanel labels.) Surely it is time some decision were arrived at. F.

Answers to Correspondents.

CATTLEVA TRIANÆ: Peter Massey. Yes; a very good variety.

CINERARIAS AND VINES: M. J. T. The largest flower is of remarkable proportions, but not so fine in form, nor so good in substance, as the smaller ones, which are first-rate. The cause of the Vine being fasciated is a little over-development through an excess of nutrition.

CONIFER SEEDS: Y. B. You had better write to Messrs. Vilmorin & Co., 4, Quai de la Mégisseric,

FUNGUS: R. B. L., Longhborough. The name of the fungus invading your friend's Mushroom-bed is Nylaria vaporaria. It generally occurs in the condition in which you have sent it—f.e., like nodular lumps of some sucker belooging to a tree, or like pieces of the noderground stem of some perennial plant. It should be gathered together and burnt, for it often proves an intolerable nuisance in garden as well as Mushroom beds, and is sometimes so abundant that it has to be pulled up in long cords and carted away in wheelbarrows. IV. G. S. FUNCUS

Darrows, IV, G. S.

INSECTS: The Mug. The "beetles" are the too well known Otiorhynchus sulcatus, a weevil which shams death when disturbed, and which is easily captured by spreading a sheet uoder the plants and shaking then off at night.—W. H. B. We can find no insects at the root of your Pancratium fragrans, the bottom of which is much gnawed (certainly more so than would have been done by the larvæ of the weevil (Otiorbynchus), I. O. IV.

JUNIPER: C. M. O. It is impossible to say with certainty what your plant is from the fragments seat. Judging from the locality, it may be Juniperus canadensis, the Canadian form of the common Juniper.

NAMES OF FRUITS: A. B. Apple: Striped Beaufin. NAMES OF FRUITS: A. B. Apple: Striped Beaufin.

NAMES OF PLANTS: C. IVIIIliams. 1, Prenis cretica;
2. Thuis gigantea; 3, Arabis alpha; 4, Franciscea
calycina.—7. W., Gordon Cartle. Your Holly is flex
dipyrens, from Himalaya.—H. Farrant. Your Fern
is a variety of Preits serrulata, aspective to the service of the service tricolor.—W. B. Jeffreys. Dendrobium barbatulum. —M. P. S. 1, Lastrea Filix-mas crispa; 2, L. quin-quangularis; 3, Asplenium fontanum.

ORCHIDS: H. M. S. Your Cattleya Trianæ is a very good variety—one of the best—and in the way of C. T. Osmanni, but smaller. The Dendrobium is a good ordinary variety.

PEARS BITTER FLAVOURED: G. W. H. sent is nearly rotten, so cannot give any opinion as to flavour. The "peculiar bitterness" of which you speak may be owing to dryness last season at the roots, or a want of vigour in the tree.

HODDDENDRON AGENTEUM (GRANDE).— Mr. Mangles, Valewood, Haslemere, would be obliged if those who grow this plant would send him a flower of this species with the parts of the flower in fives, viz., five sepals, five-lobed corolla, ten stamens, &c. RHODODENDRON

* All communications intended for publication should be addressed to the "Editor," and not to the Publisher or to any member of the staff personally. The Editor would also be obliged by such communications being unritten on one side only of the paper and sent as early in the week as possible. Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

FOREIGN SUBSCRIBERS sending Post-Office Orders are requested to send them to the Fublisher of this journal, 44, Wellington Street, Covent Garden, and to make them payable to William Richards, at the Post Office, Drury Lane, London, W.C.

INTELLIGENT READERS, PLEASE NOTE: — Letters re-lating to ADVERTISEMENTS, or to the supply of the Paper, should be addressed to the Publisher, and NOT to the Editor.

CATALOGUES RECEIVED.

GEORGE POLLOCK, 55, South Place, Stirling — Farm Seeds, Manures, &c.
HENRY BENNETT, Shepperton, Middlesex — Pedigree Seedling and New French Roses.
SANUEL SHEPPERSON, Belper — Bedding and Herbaceous Plants, Seeds, &c.
G. W. KERR, Dargavel, Dumfries—Agricultural Seeds.
W. P. LAIRD & SINCLAIR, Dundee—Agricultural Seeds.

Communications Received,—J. V. & Sons.—Jones.—J. P. & S.—Dr. Wallace.—Sir Trevor Lawrence.—E. V. B.—R. P. (thanks).—O. W.,—W. B.—W. J. M.—J. C. & C.—C. M. O.—W. S.—T. B.—F. G. A. D. W.—Wild Rose.—A. D.,—J. D.—F. O. B.—C. W. D.—D. C. P.—Dr. Muric.—G. N.—B. T. B.—J. R.—S. W.—C. P.—R. E.—H. L. C.—J. H. G.—G. E.—H. B.

DIED, on February 23, at Harrietsham, Kent, John Cutbush, Seo., in his eighty-ninth year; for nearly forty-five years gardener and confidential servant in the family of the late W. W. T. Baldwin, Esq., of Stede Hill, and for thirty-six years clerk of the parish church of Harrietsham, greatly respected and esteemed by all who knew him.

Markets.

COVENT GARDEN, March 13.

[The subjoined reports are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list weekly, and are responsible for the quotations. It must be remembered that these quotations are averages for the week preeding the date of our report. The prices fluctuate, not only from day to day, but often several times in one day, and therefore the prices quoted as averages for the past week must not be taken as indicating the price at any particular date, still less can they be taken as guides to the price in the coming week. Ed.]

LENT has affected the values of all best goods, with the exception of Grapes, which remain at last week's quotations, James Webber, Wholesale Apple Market.

FRUIT .- AVERAGE WHOLESALE PRICES.

s, d. s. d.	s. d. s. d.
Apples, 1/2-sieve 1 0- 5 0	Pears, French, doz. 1 6- 9 0
Cobs, per 100 lb 125 n-150 0	Pine-apples, Eng., lb. r 6- z n
Grapes, per lb 5 o- 10 n	- St.Michael's, each 2 n- 8 n
Lemons, per case 15 o	Strawberries, per lb. 8 o-12 o

VEGETABLES .- AVERAGE RETAIL PRICES.

Artichokes, Globe, per doz
per dox
— Jerusalen, bush. 4 o Asparagus, English, per 100
per 100
Bett, per dor. 1 o - 2 o - Nushrooms, p. baskt. 1 o - 2 o Onions, per bushel. 7 o - 2 o Carrots, per bun. 0 4 - 0 6 Parsley, per bunch. 0 4 - 0 Rew French, per - New French, per - Rew French, per - New French,
Beans, French, p. 100 3 6 Beet, per doz 10 Cabbages, per doz 10 Carrots, per bun 04 New French, per bunch 04 Radishes, per doz 16 Radishes, per doz 16 Radishes, per doz 16
Beet, per doz 1 o Onions, per bushel 7 o Cabbages, per doz 1 o- z o Spring, per bun. n 6 Carrots, per bun. n 6 Parsley, per bunch. o 4 Radishes, per doz 1 6
Cabbages, per doz 1 0 - 2 0 - Spring, per bun. n 6 Carrots, per bun 0 4 - 0 6 Parsley, per bunch. 0 4 Radishes, per doz 1 6
Carrots, per bun o 4- o 6 Parsley, per bunch o 4 Radishes, per doz 1 6
- New French, per Radishes, per doz 1 6
bunch 2 o Rhubarb, per bund, o 4- o 6
Cauliflowers, Eng- Salsafy, per bundle o 8
lish, dozen 2 o- 3 o Seakale, per punnet 2 o
Celeriac, per root o 4- o 6 Small salading, pun. n 4
Celery, per bundle I 6- 2 6 Spinach, per bushel 4 0
Cucumbers, each 1 o- z n Sprue, French, bund. 1 6
Endive, English, per Tomatos, per lb 2 6
dozen r o Turnips, per bun n 4

POTATOS.—Kent Magnums, 8os. to 100s. per ton; do., Regents, 8os. to 100s.; Champions, 5os. to 65s.—New; Jersey, 1s. lb.; French, 6d. lb.

CUT FLOWERS.-AVERAGE WHOLESALE PRICES.

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

Abutilon, 12 bunch, 3 of 6 of Arum Lilies, 12 blun., 3 of 6 of Arum Lilies, 12 blun., 3 of 6 of Arum Lilies, 12 blun., 3 of 6 of Mignonette, 12 blun., 3 of 9 of Bouvardias, per blun. 1 of 1 of Pelargoniums, 12 spr., 1 of 2 of Crocus, 12 blunches. 1 of 2 of Pelargoniums, 12 spr., 1 of 2 of Crocus, 12 blunches. 1 of 2 of Pelargoniums, 12 spr., 1 of 2 of Daffodils, double, 12 of Pelargoniums, 12 spr., 1 of 2 of Daffodils, double, 12 of Perimula, double, blun. 1 of 1 of Pelargonium, 12 blun. 1 of 2 of Cardenias, 12 blun., 4 of 6 of Cardenias, 12 blun., 1 of 2 of Cardenias, 1

Lily-of-Valley,12 spr. 9-16	
PLANTS IN POTSAVER	AGE WHOLESALE PRICES.
s. d. s. d.	s, d. s. d.
Aralia Sieboldi, doz.12 0-24 n	Ferns, in variety, per
Arbor-vitæ (golden),	dozea 4 0-18 0
per dozen 6 o-18 o	Ficus elastica, each 1 6- 7 0
- (common), dozen 6 o-12 o	Foliage Plants, vari-
Arum Lilies, dozen 9 0-18 0	ous, each 2 0-10 0
Azaleas, each ., 2 6- 5 0	Genista, per dozen 9 0-18 0
Begonias, per doz 6 o-12 o	Hyacinths, per doz. 8 o-10 n
Bouvardias, doz12 0-18 0	Lily of the Val., pot 16-20
Cinerarias, per doz. 8 o-12 o	Marguerite Daisy,
Cyclamen, per doz12 0-30 0	per dozen 12 0-18 0
- Extra size, each 5 0-10 0	Myrtles, per doz 6 c-12 0
Cyperus, per dozen 6 0-12 0	Narcissus, per dozen 9 c-12 0
Dracæna term. doz30 0-60 0	Palms in var., each 2 6-21 0
- viridis, per doz12 0-24 0	Pelargoniums (show)
Erica, various, dor. 9 0-24 0	per dozen 18 0 24 0
Euonymus, various,	- scarlet, per doz 6 o 12 o
per dozen 9 0-18 0	Primula, single, per
Evergreens, in var.,	_dozen 4 0- 6 0
per dozen 6 0-24 0	Tulips, per dozen 6 0- 9 0

SEEDS.

SEEDS.

LONDON: March 12.—The sowing demand for farm seeds is at present much retarded owing to the soddened condition of the land in many parts. Values in the meantime remain unchanged. English red is cheap and abundant. White Clover seed continues firm, but Alsike and Trefoil are dull. The low rates ruling for Rye-grasses have at last attracted the attention of buyers. Sanfoin, Millet, and Rape seed well sustain the late advance. Full prices are realised for spring Tares. John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.

CORN.

At Mark Lane on Monday no quotable advance occurred in Wheat, the demand being slow, but prices were fully steady, and sales were not pressed. Flour was were fully steady, and sales were not pressed. Flour was considered to the property of the property o

CATTLE.

At the Metropolitan Market on Monday trade was dull in every department. Rates for cattle generally slack, and quotations reduced 2d. per stone. For calves rates were unchanged, and there was no quotable change in the pig market.—Quotations:—Beasts, 4s. 65., and 5s. 4d. to 5s. 6d.; calves, 5s. 10 7s.; sheep, 4s. 1od. 5s. 6d., and 5s. 1od. to 6s. 8d.; pigs, 4s. to 4s. 6d.—On Thursday there was no fresh leature in the trade. Both beasts and sheep sold slowly at Monday's currencies. Calves and pigs were quiet.

POTATOS.

The Borough and Spitalfields Markets reports state that good supplies were on offer, and met a slack demand, as follows:—Magnum Bonums, 8oz. to roos.; Regents, 6os, to 8oz.; Champions, 5oz. to 6oz.; and Victorias, 7oz. to 8oz. per ton.—The imports into London last week consisted of 48t bags from Hamburg, 24 from Boulogne, and 2 bags I case from Jersey.

The following are the prices current at market during the week: — East Wylam, 15:, Ravensworth West Hartley, 14:, 9d; Walls End—Hetton, 15: 6d; Hetton Lyons, 14:5; Lambton, 15:1; Wear, 14:; Caradoc, 15:, 9d.; Tecs, 15:; 9d.; East Hartlepool, 14:, 9d.; South Hartlepool, 14:, 3d.; Thornley, 14: 9d.

Government Stock.—Consols closed on Monday at 101½ to 101½ for delivery, and 101½ to 102 for the account. The figures for Tuesday and Wednesday were 101½ to 101½ for delivery, and 102 to 102½ for the account. Thursday's figures were as on the previous day for delivery, and 102½ for the account.

DANIELS BROS.

CHOICE FLOWER SEEDS.

We can highly recommend the following Choice Flower Seeds as being really fine strains and well worthy of cultivation :

Auricula, choicest Alpine

Antirrhinum majus, splendid mixed

Antirrhinum Tom Thumb, splendid mixed

Aster, Victoria, fine double mixed

6d. and
Aster, Pænoy-flowered, fine double mixed

6d. and
Aster, Dwarf Chrysanchemum-flowered

8d. and
Balsam, Daniels Camellia-flowered

1z, 6d. and
Begonia, Tuberous-rooted hybridis, very fine

mixed

1z, 6d. and

1z, 6d. and mixed
Carnation, splendid double, from stage flowers, a remarkably fine strain 25. 6d. and
Calceolaria hybrida, splendid mixed is. 6d. and

CalcoularIa By Orina, splendid mixed 1t. 6t. and ClinerarIa by Drida, choice mixed 1t. 6t. and From Mr. H. Brown, Langford, July 2t.—"The CALCEOLARIA and CINERARIA seed that you sent me last year turned out splendidly; the flowers were the admiration of all who saw them; many of the CALCEOLARIA blooms were quite 2½ inches across."

Cockscomb, Daniels' Giant Prize, fine Marigold, Orange African Prize
Marlgold, Striped French, Prize Scotch
Mignonette, Victoria Giant Red, new, fine.
Mimulus, Daniel's large-flowered
Fansy, Daniel's Show and Fancy, splendid. Pansy, Daoiels' Prize Blotched, magnificent varieties Pansy, Daniels' Improved Striped, very fine

From Mr. A. J. BARNDON, Soodland, Rochester, April 6.—" The BLOTCHED PANSIES I had from you were splendid. I took First Prize at Malling Flower Show last year."

at Malling Flower Show last year."
Petunia hybrida grandiflora, magnificent class, splendid mixed ... 12. 6d. and Petunia, choicest striped Phlox Drummondi grandliflora, very brilliant choice mixed ... 6d. and Printriose, brilliant hybrids, mixed ... 15. 6d. and Printriose, brilliant hybrids, mixed ... 15. 6d. and Printriose, brilliant hybrids, mixed ... 15. 6d. and ... 15. 6

From Mr. A. TURNBULL, Cemetery, Kelso, N.B., April 18.—"The two packets of PRIMULA seed I got from you last year were the finest I ever grew; and I have now grown Primulas for seventeen years."

FLOWER SEEDS IN PENNY PACKETS—A splendid assoutment of the most showy, popular, and beautiful varieties, including finest Double German Aster and Ten-week Stock, Scarlet Linum, Phoko Prummondi, Double Zinnia, Mignonette, Pansy, Sweet Peas, Nemophila insignis, Calliopsis, Dwarf Nasturtium, Clarkia, &c. d. 200 packets in 100 choice varieties, post-free, 8 n. 200 packets in 100 packets in 100 packets in

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NORWICH.

HOT-WAT E S 0 N. 1 8 8 4.

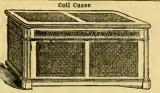
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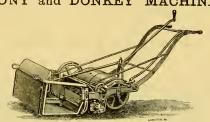
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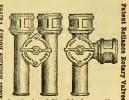
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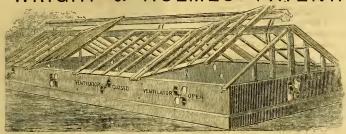
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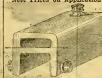
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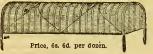
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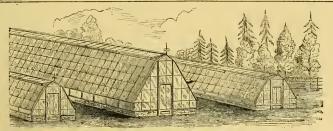
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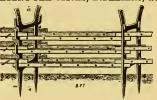
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 —four years previously.—B. SMITH, Hales, near Loddon,
Norfolk, JOURNEYMAN, in a Gentleman's garden; age 20 - A GARDENBER cao highly recommend a young man as above. Five years' experience.—HEAD GARDENER, Sir W. H. Salt, Eart., Maplewell, Loughborough.

JOURNEYMAN, in the Houses in a good establishment.—Age 20; five years' experience. Can be well recommended by present employer Bothy preferred.—E. T., the Gardens, Mickleover Manor, Derbyshire.

JOURNEYMAN (FIRST), in the Houses, in a good establishment—Age 24: good practical know-ledge of the work. Bothy preferred. Thoroughly recommended.—HORTUS, Bryakinal Gardeos, Chirk, Roabon.

JOURNEYMAN, in the Houses, under a Foreman, in a Gentleman's establishment.—Age 20; three years character from present situation.—J. NEWITT, School House Cardens, Rugby.

JOURNEYMAN, in the Houses, in a good establishment.—Age 22; foor years' good character. Bothy preferred.—W. B, 11. Elm Crescent, Kingston op-Thames, Surrey.

JOURNEYMAN, in the Houses, under a good Plant and Fruit Foreman—Age 21; good reference. Bothy preferred. State wages.—H. S., 20, Queen Street, Ashford, Keot.

JOURNEYMAN, in the Houses; Nursery preferred.—Age 24; steady and respectable. Ten years experience; present situation eight years. Good reference.—WOOD AND INGRAM, The Nurseries, Huntingdon.

JOURNEYMAN, in a good Gentleman's establishment.—Age 20; seven years' experience. Good character. Bethy preferred.—JOSEPH HORNER, Harmby, Bedale, Vorkshire.

JOURNEYMAN, in a good establishment.— Age at; two years' good character from present situation. Bothy preferred.—S. SMITH, The Gardens, Broomsleyh Seal, Sevenoaks, Kent.

To Head Gardeners.

JOURNEYMAN, in the Houses in a good well recommended. Leaving on own account—R. CAMP. The Gardens, Winshade, Exeter.

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TMPROVER, under Glass and Outside.—Age 20; two years previous, nine months last place.—W. GODFREY, Furneaux Pelham, Buntingford, Herts.

MPROVER, in a Gentleman's garden.—Age
18'; over three years' experience. Can be well recommended.—Mr. MOV, 285, Upper Morton Street, Lime Grove,
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HOPMAN, SALESMAN, or MANAGER.

Age 26; first-class knowledge of Ferns and Foliage

Plants. Ten years London and Provincial experience, -A. F.,
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To Seedsmen and Florists.

INVOICE CLERK and ASSISTANT.—
Age at; respectable. Can offer good refereoces.—
D. W. C., 9t, Fernlea Road, Balhim, S.W.

BOOK-KEEPER. — Advertiser, who has a two words knowledge of the Seed Trade, having some eveniogs unoccupied, desires employment in Book keeping.—SCOT, Gardeners' Chronicle Office, 41, Wellington Street, Strand, W.C.

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ARM STEWARD.—Wanted a re-engagement as above; thoroughly understands Light and Heavy
Soils, Boying and Selling all Farm Produce. Wife good Dairy
Manager, Good reference—A. E. C., Messrs, Sutton & Sons,
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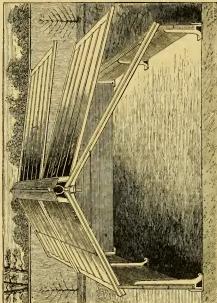
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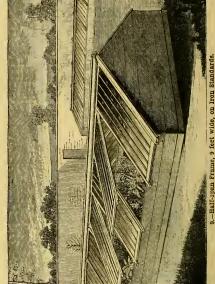
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which have gained so large a sale for our Frames, 6 feet and 8 feet and 8 feet wide. Each Frame has a door at one end, and a sunk path, 2 feet 9 inches wide, allows of the Gardener attending to the plants from the inside-a Having been often asked for Frames of a greater width than those we have hitherto made, we have this year prepared patterns of New Designs for Frames, 10 feet wide. They have all the special features FOSTER & PEARSON, BEESTON, NOTTS.

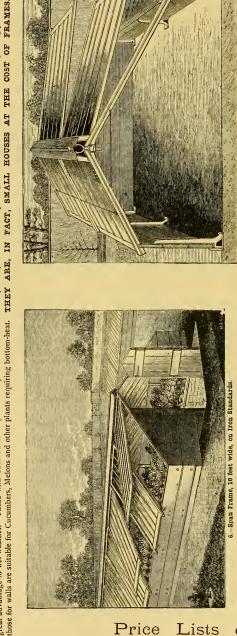
great advantage in wet weather. Those with boarded sides (No. 6 sect.) are intended for Roses, Lilies, and other cool plants, and will be found most useful for growing plants to supply the Conservatory, while

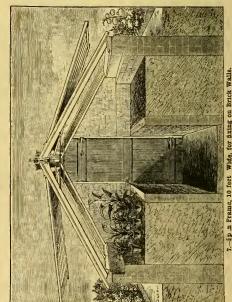
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-Half-span Frame, 8 feet wide, on Iron Standards





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CHRONICLE. GARDENERS'

Established 1841.

No. 534.—Vol. XXI. (NEW SERIES.)

SATURDAY, MARCH 22, 1884.

Registered at the General Price 5d. Post-office as a Newspaper. POST-FREE, 51/2d.

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NOTICE to SUBSCRIBERS and OTHERS.
Post-office Orders and Postal Orders should
now be made payable at
DRURY LANE.

ROYAL BOTANIC SOCIETY GARDENS, EXHIBITION of REGIL SPIA, NW.
EXHIBITION of REGIL STATEMENT, WERS, WEDNESDAY NEXT, March 26. Gates open at 20 Clock. Tickets to obtained at the Gardens only by Vouchers from Fellows of the Society. Price 2s. 6d. each.

ROYAL BOTANIC SOCIETY GARDENS,
Regent's Park, N.W.
EXHIBITIONS of SPRING FLOWERS, WEDNESDAYS, March a6, April SPRING FLOWERS, PLANTS,
and FRUIT, WEDNESDAYS, May 21, June 18,
EVENING FETE, WEDNESDAY, July 2,
Schedules of Prizes and Tickets are now ready.

ROYAL HORTICULTURAL SOCIETY, South Kensington, S.W.
NOTICE !— COMMITTEE'S MEETINGS. Fruit and Floral, at 11 A.M., in the Conservatory; SCIENTIFICAT **P. M.
GENERAL MEETING for the Election of Fellows, & GENERAL MEETING for the Election of Fellows, & S. W. M., in the Conservatory, on TUESDAY NEXT, March 25SECOND PROMENADE SHOW and Band of the ROYAL Horse Guards from balf-past 3 A.M. Admission, One Shilling.

ROYAL HORTICULTURAL SOCIETY,

ROYAL HORTICULTURAL SOCIETY, ROYAL HORTICULTURAL SOCIETY,

South Kensington, S.W.

A Conference on the Species and Varieties of the Genus
NARCISSUS will be held in the Conservatory of the ROYAL
HORTICULTURAL SOCIETY,
April 1, 1884, at which Flowers will be exhibited and Papers
read, after which discussion will take place on the various topics
brought before the meeting. Mr. F. W. Eursinga will read a
paper, and it is expected that many who are interested in the
Communications respecting space required for the exhibits to
be addressed to Mr. A. F. BARKON, Garden Superintendent,
not later than SATURDAY, the 29th inst.

(By order) F. MASON, Major, Secretary.

C R Y S T A L P A L A C E.

FRIDAY and S ATURDAY, April 4 and 5.

Entries Close March e8. For Schedules apply to W. G. HEAD, Garden Superintendent, Crystal Palace.

W. G. HEAU, Garden Superintendent, Crystal Palace.

IN TER RN ATION ALFORE ESTRY
EXHIBITION, EDINBURGH, 1884.
Under the Patronage of Har Maj Asyrv The LERN.
The Earth Patronage of Har Maj Asyrv The LERN.
The Committee of the Major State of the cabilities and the Committee of the Committee of the Major State of the M space, ecc., apply to GEORGE CADELL, Secretary, Office—3, George IV. Bridge, Edinburgh, Special Nortes—Applications for space must be received not later than March 31, 1884.

SHEPPERTON and DISTRICT FLOWER SHEPPERTON and DISTRICT FLOWER
SHOW including Addlestone, Ashford, Charlton, Chertsey, Esber, Feltham, Hampton, Ottershaw, Staines, Stanwell,
Sunbury, Thorpe Walten, and Weybridge.
EXHIBITION of ROSES and other FLOWERS,
FOLIAGE PLANTS, ORCHIDS, &cc., FRUIT, and
VEGETABLES, to be held on WEDNESDAY, July 2, in
the Grounds of the Manor House, Shepoerton, under the
Presidency of Sir Parick Colquiboun, O.C., Li.D., &c.
Special classes, open to all England, FRIZES will be given
Special classes, open to all England, FRIZES will be given
FOUNDS. Further information, Schedule of Prizes, and
Enthrance Forms to be obtained from
E. ROPER, Etq., Hon, Sec., Shepperton

LTORT CLULTURAL EVALUATION.

HORTICULTURAL EXHIBITION, to be held at the BOTANICAL GARDENS, SHEFFIELD, JULV at and a5. Prize Schedules may now be obtained on application to

Mr. J. EWING, Curator.

NORTHAMPTONSHIRE HORTICUL-The ANNUAL SUMMER SHOW and FLORAL FETE will be held August a and 4 (Bank Holiday and preceding Satur-day). Schedules now ready. E. COOKE. Hus. Services E. COOKE. A. FORBES, Hon. Secs.

ROSES.—Standards, 2½ to 4 feet; ditto 1½ to varieties in cultivation of Hybrid Peroetusla, &c, Descriptive CATALGGUE post-free THOMAS RIVERS AND SON, Sawbridgeworth, Herts.

STANDARD ROSES. - Leading sorts, strong, well-grown plants, very cheap. Price on appli-

cation. SCHARMER AND MÜLLER, Pinneberg, near Hamburgh.

To the Trade.

NARF H.P. ROSES, fine bushy plants, and best named varieties, ass. per 100, in not less than 20 varieties, cash. Lists free.

EDWIN HILLLER, Wiechester.

POSES IN POTS.—All the best New and Old English and Foreign sorts, from 18x, to 36x, per dozen. These world-Immed Roses cannot fail to give the greatest satisfaction. Descriptive LISTS on application.

RICHARD SMITH AND CO., Worcester.

ROSES—ROSES—ROSES.— Forty choice Perpetuals sent to any address on receipt of remutance for 212; Purchaser's selection from 200 betwarters. List of numes on application. Hundreds of testimonials, JAMES WALTERS, Mount Radford Musery, Exeter, Deven.

MARECHAL NIEL ROSES. — Strong, well-grown plants, very cheap. Price on application. SCHARMER AND MÜLLER, Pinneberg, near Hamb r. h

ILIUM AURATUM.—Good, plump, sound L Bulbs, 6r, 9r, 12r., 18r., and 24r. per dozen; extra strong, 50r. and 42r. per dozen. All other good LILIES at equally low prices.

Mr. WILLIAM BULL'S Establishment for New and Rare Plants, 536, King's Road, Chelsea, London, S.W.

TENDERS ARE REQUIRED for SHRUBS, from a to 3 feet in height, to be delivered on the Comberhand Park Estate, Acton, Middlesex. Tenders to be

Mr. ALFRED WRIGHT, Belgrave House, 190A, Brompton Road, with full description of Trees and Shrubs

NOTICE TO SENDERS.—We have now ROSES, LILY OF VALLEY, &c., also GRAPES, CUCUMBERS, THE MERCH BEANS, MUSTROOMS, &c., Garden, W.C.

To Nurserymen, Private Growers, &c.
A CATTANEO, COMMISSION SALESMAN,

•44, Har Street, and New Flower Market, Covent Garden,
W.C., is open to RECEIVE CONSIGNMENTS of CHOICE
CUT FLOWERS in any quantutes. Terms on application. WANTED, BEDDING PLANTS, of sorts, in quantity, for cash. State price per 1000, and valle-

ties to F. W. ABRAHAM, 17, Tanfield Road, South Croydon.

Carnations and Picotees.

CHARLES TURNER'S noted and extensive collections of the above are in the most robust health. If planted now a good bloom will be ensured. Purchasers leaving the selection to C Turner will be the

The Royal Numerics, Slough.

ORDER CARNATION,

First-class Certificate awarded to H. G. Smyth. A beautiful rose-coloured Self, very highly scented, of great size, very full, and of perfect shape; does not burst the calx, a very free bloomer and vigorous grower, and perfectly hardy. See Garderst Chronicle, August 4, 1883, page 146. Frice 2s., each or se. 6d, pair. Law with order.

H. G. Shiver, and the control of the contro

Two Acres Daffodils.

BARR AND SON'S Grounds, Lower Tooting;
nearly soo varieties. Visitors admitted to inspect, TUESDAYS, THURSDAYS and SATURDAYS, from now to May.

BEGONIA OLBIA, new interesting species, described in Cardiners' Chromete (see p. 720, vol. xx.), plant, 8r.; a plants.acr. Free to all parts of England.
ED. PYNAERT VAN GEERT, Chent, Belgium.

CAMPANULA, double white; Old Clove, Mule, Anne Boleyn, and other PINKS; HEMBRO. CALLIS FULVA, ACHILLEA, pt., double white; POTENTILLA, double yellow, extra strong, 31 per dozen, cash. GEO. SMITH, Florist, 67, Pennose Street, Walworth, S.E.

RAPE VINES.—A fine stock in leading varieties, Planting and Fruiting Canes. Apply to FRANCIS R. KINGHORN. Nurseryman, Richmond.

CREEPERS for Walls, Trellises, &c., in great variety. By planting what is suitable an unsightly object may easily be made beautiful. Descriptive LIST and advice on application. RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

Merchants, worcesser.

AING'S CHOICE HYBRIDISED SEED, all new and of unequalled quality. Scaled packets, free by post-sungle, 12, 21 6d, and 52; double, 22 6d, 32 6d, 43 6d, 52 foulth, 23 6d, 32 6d, 54 foulth, 25 6d, 35 foulth, 26 fo

HIFTY THOUSAND DAHLIAS, Double and Single, dry roots. CATALOGUES on application. KELWAY AND SON, LANGORY, Somerset

BEAUTIFUL SPRING FLOWERS.

Send for CATALOGUE.
RODGER, MCCLELLAND AND CO., Newry.

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ARCH.— Special offer to clear ground.

Stout and well rotted, a to 3 feet, 15s. per 1000; 3 to
4 feet, 17s. 6ss. per 1000 Nett cash.
GARAWAY AND CO., Dardham Down, Clifton, Bistol.

PELARGONIUMS, in 40-pots, to flower in April and May, best Show and Decorative varieties, 9s per dozen, 65s, per 100. GARAWAY AND CO., Durdham Down, Clifton, Bristol,

CUT LILIES of the VALLEY .- A thousand blooms daily. For a supply at Easter week, Orders are now booked. For present orices apply to T. JANNOCH, Lily Nursery, Dersingham, Norfolk.

CUCHARIS CANDIDA.—Good Bulbs by the 100 or 1100. The flowers of this free flowering species are extensively used for cutting. Price on application. Mr. WILLIAM BUILL, Establishment for New and Rare Plants, 536, King's Road, Chelsea, London, S.W.

To Osier Growers, Basket Makers, and Nurserymen, PRADFORD AND SONS, Yeovil, Somerset, now Grow and Cut yearly too Acres and npwards of OSIER BEDS, and will quote prices to the Trade, according

to quantity required.

Samples and prices of Osier "Sets" on application.

Forest and Ornamental Trees and Shrubs.

THE LAWSON SEED AND NURSERY
COMPANY (Limited), Leidnburgh, have an umense
Stock of the leading kinds of Seedling and Transplanted
FOREST TREES and SHRUBS, &c.—31 in healthy condition and prices moderate. Special cifers on application.

Daffodil, Daffodilly, Daffodowndillies.

A DESCRIPTIVE CATALOGUE of more than 200 serts of DAFFODILS free en application.

BARR AND SON, 12. King Street, Covent Garden, W.C.

Special Culture of
PRUIT TREES and ROSES.—A large and
Select stock is now offered for sale. The Illustrated and
Descriptive CATALOGUE of Frusts post-free for threepence,
the Descriptive CATALOGUE of Roses post-free.
THOMAS RIVERS AND SON, The Nusseries, Sawbridgeworth, Herts.

To the Trade.

SEED POTATOS.

H AND F. SHARPE are offering their fine
selected Stocks of all the best kinds of SEED
POTATOS at very low prices, which may be had on application.
Seed Growing Establishment, Wisbech.

SALES BY AUCTION.

The Collection of Stove and Greenhouse Flants tormed by F. A. Davis, Esq., who is giving up exhibiting.

M. R. J. C. STEVEN'S has received instructions from F. A. Davis, Esq., of Subbitoo, to offer for SALE by AUCTION, at bis Great Rooms, 39. King Street, Covent Garden, W.C., on WEDNESDAY, March 26, the COLLECTION of PLANTS with which he has been so successful in exhibiting. Amongst others will be found fine specimens of: Erica Shannoniana Pimelea mirabilis Dracophyllum gracile Pimelea Hendersoni

mens ot :—
Genetyllis fuchsioides
,, tulipitera
Phenocoma prolifera Barnesii
Aphelexis macrantha purpurea
,, rosea, Baines' var.

,, sessamoides rosea
Erica Findleyana
, ventricosa Bothwelliana

Pimelea Fiendersoni Bongainvillea glabra Clerodendron Balfonrii Erica exquisita ,, tricolor Wilsoni ,, Actoniana Turobulli

A few ORCHIDS, &c., all in the best possible health and well set with flower.

On view morning of Sale, and Catalogues had.

On view morning to care; they could be compared to the could be compare valuable species. On view morning of Sale, and Catalogues had.

On view morning of Sale, and Catalogues had.

Wednesday Next.—(Sale No. 656.5)

MIPORTED and ESTARLISHED ORCHIDS, &c.

MIPORTED and ESTARLISHED ORCHIDS, &c.

MIPORTED and ESTARLISHED ORCHIDS, &c.

R. J. C. STEVENS WIll SELL by AUCGarden, in The Control of the Control of the Control

Garden, in Miller of the Control of the Control

12 o'Clock precisely, Imported and Established Orchids, in
13 o'Clock precisely, Imported on Established Orchids, in
14 o'Clock precisely, Imported on Established Orchids, in
15 o'Clock precisely, Imported on Established Orchids, in
16 o'Clock precisely, Imported on Established Orchids, in
18 o'Clock precisely, Imported on EstaBlished Orchids, Important on EstaBlished Orchids, Important

On view morning of Sale, and Catalogues had.

Wednesday Next.—(Sale No. 656a.)

MR. J. C. STEVENS will include in his Sreet, Cowent Garden, WC, on WEDDNESDAY NEXT, March 26, an importation from Monlmein, in the best possible condition, of fine plants of De NOROBIUM INFUNDIBLUTION, D. FYTCHEANUM, and D. FORMOSUM GIGAN. TEUM: TEUM

Thursday Next – (Sale No. 6697)

CATTLEVA DOWNANA.

M.R. J. C. STEVENS will SELL by
Covent Garden. W.C., on THURSDAY NEXT, March 97, at
half-past 12 o'Clock precisely, by order of Mr. F. Sander, a
half-past 12 o'Clock precisely, by order of Mr. F. Sander, a
half-past 12 o'Clock precisely, by order of Mr. F. Sander, a
half-past 12 o'Clock precisely, by order of Mr. F. Sander, a
half-past 12 o'Clock precisely, by order of Mr. F. Sander, a
half-past 12 o'Clock precisely, by order of Mr. F. Sander, a
tradian ORCHIDS, such as a most superb lot of CATLEYA
CITRINA, &C. Brazilian ORCHIDS, Such as Catalogues and Catalogues had.
On view morning of Sale, and Catalogues had.

On view morning of Sale, and Catalogues had.

Thursday Next.—(Sale No. 66:7)
ESTABLISHED ORCHIDS.

R. J. C. STEVENS will include in his
Street, Covent Garden, W.C., on THURSDAY NEXT,
Machay, the Collection of ESTABLISHED ORCHIDS
Gened by H. J. Earburinge, Sale, including Cattleya glays,
majus, O. Alexandre, San publichlum grandiforum, O. cavelle,
with forty leaves; Ledia purparta, Dendrobnums, Calanthes,
Phalzenosis, Cypripediums, Oncidiums, &c.
On view morning of Sale, and Catalogues had.

Thursday Next.—(Sale No. 6627.)

Six Cases of ARAUCARIA EXTELSA, as received.

MR. J. C. STEVENS will include in his

SALE by AUCTION, at his Great Rooms, 38. King

Street, Covent Garden, W.

Match 27, six cases of ARAUCARIA THURSDAY NEXT,

taining from 200 to 400 plants in fine condition.

On view morning of Sale, and Catalogues had.

Flowering or chids.

M.R. J. C. STEVENS begs to announce that his NEXT SALE of FLOWERING ORCHIDS will take place on WEDNESDAY, April 9. Gentleme desirous of entering Plants for this Sale will please send particulars of same not later than Thursday, April 3. decion Knoms and Offices, 38, King Street, Covent Garden, London, W.C.

Botanical Library.

MR. J. C. STEVENS has received instructions from the Executors to offer for SALE by AUCTION. in APRIL, the valuable BOTANICAL LIBRARY
formed by the late Robert Hanbury, Esq., of The Poles, Nuc.
Further particulars in future advertisements.—Anction Rooms
and Offices, 36, King Street, Covent Garden, W.C.

and Offices, 38, King Street, Covent Garden, W.C.

The Down House Collection of Orchida

M.R. J. C. STEVENS has been favoured
with instructions from Sir Wm. Marriott to SELL by
AUCTION, at his Great Rooms, 28, King Street, Covent
Garden, W.C., about the SECOND WEEK in MAY, his wellknown collection of ORCHIDS. The plants have been selected
with the greatest care for a period of more than 15 years, during
which time the inferior varieties have been several times discarded. Among them will be found many of the finest varieties
acrded, Jamong them will be found many of the finest varieties.
The whole collections of the collection of the second of the sightest reserve,
and nothing disposed of prior to Sale.

Further particulars in next advertisement.

The Valuable Collection of Orchids formed by the

MR. J. C. STEVENS has received instruc-tions from the Executors to effer for SALE by AUC-TION, at his Great Rooms, 38, King Street, Cowent Garden, W.C., on WEDNESDAY and THURSDAY, April 2 and 3, at half-past 12 o'Clock precisely each day, without the least the control of the property of the property of the property of the by the late Robert Hanbury, Eq., The Poles, Ware. Amongst other fine things will be found:

Vanda tricolor, extra Cattleya labiata " gigas " Mendelii , suavis
, corrulea
, Cathcarti
Odontoglossim Alexandræ,
many fine varieties
, Halli
, Edwardi
, platyodon, &c.
Cypripedium Spicerianum

, Mossiæ Aërides Fieldingi ,, Lobbii ,, Lobbii
Angræcum sesquipedale
Phalænopsis amabilis
,, Sanderiana
,, Schilleriana
,, grandiflora

n, grandiflora
Peristeria elata, fine
Cymbidium Lowi, fine vars.
Obralia xantholuca, flowers
Spotted; Masdevallias, Dendrobiums, and Bolleas of sorts, &c.
On view mornings of Sale, and Catalogues had.

Important Sale of a First-class Collection of CARNATIONS, PICOTEES, PINKS, CLOVES of finest growth, 400 Standard ROSES, selected FRUIT TREES, hardy, AMERICAN PLANTS, CONFEREZ, DAHLIAS in Dry Roche, PEONIES, & PERSEDS, DAHLIAS in Dry Roche, PEONIES, WE RESEDS, DAHLIAS in Dry Roche, PEONIES, WE RESEDS, Well SELL the above hy AUCTION, at the City Auction Rooms, 38 and 39, Gracechurch Street, E.C., on TUESDAY, March 25, at 25 o'Clock precisely.
On view the morning of Sale. Catalogues had at the Rooms, and of the Auctioneers, 5, New Broad Street, E.C.

SPECIAL SALE of ORCHIDS in FLOWER.

MESSRS. PROTHEROE AND MORRIS
will SELL by AUCTION, at their Central Sale
Rooms, 67 and 68, Cheapside, E.C., on TUESDAY NEXT,
at half-past 12 o'Clock precisely, a grand lot of ORCHIDS in
FLOWER, comprising plants from some of the principal collections in the country, and embracing over 300 lots. Amongst
them may be mentioned:—

them may be mentioned:—
Cattleya Triane, many superb varieties
,, eboracenis
Masdevallia Lindeni
, chimera Roczilibi
Dendrokim Roczilibi
Leptotes biotobr
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, and or continued the continued of the mention of the continued of the mentioneers, of and 68, Cheapside, E.C. (Telephone 1809)

Thursday Next.

Thursday Next.

ROSES, LILIES, GLADIOLI, &c.

MESSRS, PROTHEROE AND MORRIS

will SELL by AUCTION, at their Central Sale Rooms,

for and 68, Cheapside, E.C., on THURSDAY NEXT, at halipast 110 Clock precisely, 1000 first-class Standard ROSES, of

CLADIOLI, Double and Simple DAHLIAS, area LILIES, including a new L. AURATUM species, L. EROWNI, fine

BLOOMING PLANTS and BULBS; also an importation of

CO view morning of Sale. Catalogues had of the Auctioneers,

for and 68, Cheapside, E.C.—(Telephone 1809)

Thursday Next.—Palm Seeds.

MESSRS. PROTHEROE AND MORRIS

will SELL by AUCTION, at their central Sale Rooms,
67 and 63, Cheapside, E.C., on THURSDAY NEXT, an
importation of PALM SEEDS, received direct from the

Erails, and in first-class conduiton, including several thousands
of Coccs Weddelliana, Geonoma gracilis and G. speciosa,
Caryota virens; also 16 h. of IRS ROBINSONIANA.

On view morning of IRSIs ROBINSONIANA.

On view morning of Sale, and Catalogues had.

Cattleya Skinner! — C. Skinner! alba.

MESSRS. PROTHEROE AND MORRIS
are instructed by Mr. F. Sander to SELL by AUCTION,
at their Central Sale Rooms, 67 and 68, Chepside, E.C., on
FRIDAY NEXT, at half-past 12 o'Clnck precisely, a most
wonderful importation of CATLINNA SKINNERN, in grand
wonderful importation of CATLINNA SKINNERN, in grand
hitherto been seen like this importation.
On view morning of Sale. Catalogues of the Auctioneers,
67 and 68, Cheapside, E.C. (Telephone Nc. 1809).

The General Horicaltural Company (John Wills), Limited.

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Will shartly be favoured with instructions to SELL by
UTENSILS in Trade situate at the Royal Ecotic Nusery.

Osalow Crescent, S.W.; the Sussex Place Nursery, South
Rensington; and the Fulham Road Nursery, Fulham, S.W.
Auction afthe articular will be duly announced.

Auction after the Offices, 8, New Brand Street, and 67 and
68, Cheapside, E.C.

West Kent Auction Mart, Sydenham Station,

W. ABRAHAM will SELL by M. R. F. W. ABRAHAM WIII SELL UY AUCTION, on THURSDAY, March 72, 24 as Clock recisely, in the large Rooms as above, NURSERY STOCK, all sizes and varieties, Cooliers, Evergreens, Fruit Tees, oses, &c., all genuine stock and will be sold without reserve. Catalogues of Mr. PRATT, Railway Approach, Sydenham, E.; or of the Auctioneer, 17, Tanfield Road, South Cruydon, of Weking. Nurrey.

Young's Auction Rooms, North End, Croydon.

MR. F. W. ABRAHAM will SELL by
AUCTION, on SATURDAY, March 29, at halfpast
30 'Clock precisely, in the large Rooms as above, NURSERY
SLOCK, Roose, Fruit Treat, generated, Conlers, Climbers,
&c., all bealthy, well-rooted, generated, Croydon, or of the
Auctioneer, Croydon and Working.

(Near Great Eastern Railway, 11 miles from Loadon.)
IMPORTANT SALE LOSS FILENS STOVE and GREENMR. TYDE MAN is instructed by Mr. E.
Worcester, who is giving up Exhibiting, to SELL oby
AUCTION, on the Fremise, at Waltham Cross, on WEDNESDAY, April 23, at 11 for 12 o'Clock, the whole of his wellknown Collection of well-grown specimens of AZALEA
PHENOCA COLLEGE OF SELECTION OF

To Florists and Others.—Brighton.

OR SALE, at Valuation, Old-established NURSERIES, including extensive and well stocked Hot and Greenhouses, fitted with every convenience. Large and folliential connection. The Nurseries, with Dwelling Houses attended to the other control of the Control of

TO BE SOLD, 54 years' LEASE of a composition of the propagating Houses, Stabling; all in good order, close to London. Full particulars of SLATER AND BREADMORE, Marshgate, Richmond.

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Florists, Nurserymen, &c.

TO LET, a well situated GROUND, with
thothouses, Petting Sheds, &c., in the best part of
town. Stock can be taken to (if wished), at a low valuation.
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TO BE LET, by Tender, on Lease for 7, 14, DENS, Fryear, the well-known MOGDEN HOUSE GAR. DENS, Fryear, the DENS, Fryear, th

The market accepted.
Fill particulars and forms of Tender can be obtained of Mr. E. P. NEWMAN, Market Gardener's Yaluer, 41, High Street, Uxbridge.

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SQUELCH AND BARNHAM. giving personal attention to all consignments, they are thus enabled to obtain the HIGHEST MARKET PRICE.

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&c. Six well-runted plants to:
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12 in 12 new varieties of 1883. A

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183. per 100.

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BOX. new, Istifolia aurea, 8 inches, good and busby.

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THUIA ELECANTISSIMA, 3 to 3½ feet, well rooted,
Astrong and busby, 200, per dozen.

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these are the most gorgeous coloured among all the Lily coloured among all the tribe for garden or pots,



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None genuine unless in sealed packages and printed cultural directions
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DRICE 7s. PER POUND.

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STRONG CANES for immediate Fruiting, 72 6d, and 76, 6d, each, 16 Planting, 35, 4d, and 76, each, Leading kinds, throughly thened without bottom heat.

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PARE BULBOUS and TUBEROUS
ROOTED FLANTS, old or new, especially for the
open ground, or for Greenhouse or Conservatory. Offers, per
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TROPÆOLUM SPECIOSUM.—Now is the time to plant this fine hardy Climber. Extra strong Pot Roots at 9.4. each, 8s perdozen, for cash. Post and package free.
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APPLES, FRARS, PLUMS, CHERRIES, FEACHES,
NECTARINES, APRICOTS, &c. as Standards, Dwarfs,
Pyramids, Bushes, Cordon and Trained Trees in great variety.
HOUSE, Exclusive Standards, Draines,
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Descriptive LIST, containing a sketch of the various forms of
Trees, with durections for Cultivation, Soil, Drainage, Manya
Pruning, Lifting, Cropping, Treatment under Giass; also information as to Synonyms, Qualify, Step, Form, Skin, Colour, Flesh,
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RHODODENDRON PONTICUM HODODENDRON PONTICUM,

3 to 4 inches, transplanted, 35t, per reco; 4 to 6 inches,
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Samples on application.

LAUREL (common, 1½ to 2 feet, fine, 14t; 2 to 3 feet, 17t. 6d, per 1000;
CAUCASICUM, 1½ to 2 feet, fine, 14t; 2 to 3 feet, 17t. 6d,
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Own root ROSES, in pots. my selection, op, per duzen.

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GARDENIA RADICANS, showing about 10 to 12 buds, 182.

GENISTAS, splendid, in flower, 82, 09, 1 er., 1224, 20d 182.

HYDRANGEAS, Dwarf, in good condition for travelling.

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B. S. WILLIAMS' Prize Strain of

CINERARIA

(extra choice mixed),
Per packet, 1s. 6d. and 2s. 6d.
superb straio of very dwarf bracching babitzand strong constitution, conaming a great variety of colours.

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A splendid White Marrow, height 4 feet, bearing a profusion of long, handsomely curved pols, with the cell-rich splendid white Marrow, height 4 feet, bearing a profusion of long, handsomely curved pols, with the cell-rich splendid her profusion each We have patient of the cell-rich splendid her james Lye (the Raiser), for distribution.

Prics per Quart, 5s.; per Pint, 2s. 9d. DANIELS BROS., Seed Growers, Norwich.

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RHODODENDRON PONTICUM, 1 to 1½ foot, 1½ to 2 feet, bushy.

, choicest, named, in 50 to 60 varieties, magnifecest phants, grown in sandy leam soil.

LAUREL, Common, 1½ to 2 feet, 2 to 2½ feet, 2½ to 3 feet.

, COLCHICA, 1 to 1½ foot, 1½ to 2 feet, 2 to 3 feet.

, PORTUGAL, 1 to 1½ foot, 1½ to 2 feet, 2 to 3½ feet.

, ROTUNIFOLIA, 1 to 1½ foot, 1½ to 2 feet, 2 to 3½ feet.

LAURUSINUS, ½ to 1 foot, 1 to 1½ foot, 1½ to 2 feet, 2 to 3½ feet. CATALOGUES of Roses, Fruit Trees, Conifera, Shrubs, &c., free on application.

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25t. 10 yrs per 100.

Extra large FRUITING TREES of APPLES, PEARS,
CHERRIES, &c., from 3c. 6d. to 15.
THUILA LOBBIL, 3 to 4 feet.
RETINOSPORA AUKEA, 6 to 15 inches.
CUPRESSUS ERECTA VIRIDIS, 1 to 3 feet.
VELLIKOR AUTA GGANTEA, 3 to 5 feet.
WHITE BEAM.
COMMON LAURELS, 1 to 12/6 feet.
OWALLEAVED PRIVET, 2 to 4 feet.
IRISH YEWS, 1 to 2/6 feet.
MOSS ROSES in var.
CUPRESSUS KANA, 9 to 12 inches.
CHERRIES SKANA, 9 to 12 inches.
COB NUTS, Webb's, 200. per 100.
Other Trees, Shrubs, &c., cot enumerated in this Advertisement
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CHARLES NOBLE, Bagshot.



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Frie Strain of
GLOXINIA,
CHOICE MIXED,
Per packet, 1s. 6d.
This produces immense flowers, of
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Glections of 1 dozen tramed, our Selection :—

Singles, A 42/r, B 36/r, C 30/r, D 24/r, B 18/r, F 12/r

Doubles, P 50/r, S 8/r, S 48/r, T 42/r,

Singles, G 24/r, H 18/r, J 18/r, K 12/r, L0/r per doz.

Doubles, W 30/r, X 24/r, Z 18/s per dozen.

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, new Golden Weeping, a large number of very heautiful BOX, and Variegated, 3, 4, 5, 6, to 7 feet, many thousands. YEWS, Common, 3, 4, 5, 6, to 10 feet, thousands. Golden, of all sizes up to 10 feet. We have many thousands as Pyramids, Globes, Standards, in point

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, Lawsoniana lutea, 3, 4, and 5 feet, nundreds.
Specimes, Specimes, A, and S, 4, and S, feet, hundreds.
RHODODENDRONS, many thousands, 3, 4, 5, 6, 7, 10 feet. The plants are covered with buds.
AZALEAS, Hardy, the finest varieties known, 2, 3, 4, and 5 feet high, thousands,
JUNIPERS, Chuese, 7, 8, and 10 feet high.
PICE OF THE STANDARD A, 7, and 8 feet.
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Beas, standard wars, 12, 12, 24, 12, 6d, 31, per quant.

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CATALOGUE, containing fuller descriptions of the above, with a vast number of other choice Carnations, as well as every their section of HARDY FLORISTS FLOWERS, is now ready and shall be sent free to all applicants.

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RED DUTCH, 5s. per 1000
Package free, extra plants for carriage. Cash.
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Bre bushel, §6 lb.; Myatr's Prolife Kidney, Early Rose, Karly Shaw, Early Goodrich, Megnum Bonum, Scotch Regeut, Champion Victoria, Fortyfold, 2r. 6d. per bushel, §6 lb.; also other varieties. All true stock. Larger quantities at a considerable reduction. Bags free. The above forwarded or receipt of Post-office Order or Chequet to J. H. BREEZE, Potato Saleman, Spitalfields Market, London.

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1-yr, and ayr, from drills, also extra good stuff, transplanted,
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Price LISTS on application.

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IN ONE. HUNDRED NAMED VARIETIES, Carriage Paid to Edilburgh, Newcastle, Hull, or
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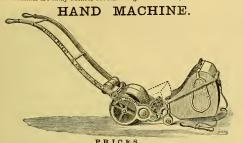
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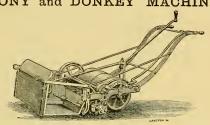
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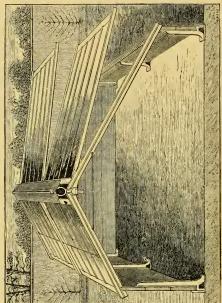
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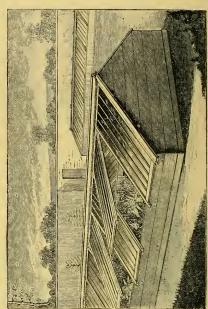
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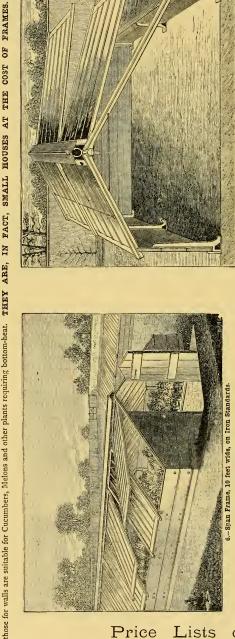
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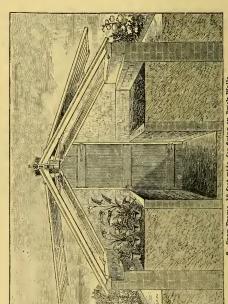


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THE QUEEN'S SEEDSMEN. READING, BERKS.



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Gardeners' Chronicle.

SATURDAY, MARCH 22, 1884.

WINTER BEDDING.

WE give in another column (see p. a representation of a portion of the terrace garden at Heckfield, and which exhibits in a somewhat pronounced aspect the value of a style of flower-bed decoration in the winter months. The summer bedding, always amongst the best of its kind in the kingdom, has been more than once illustrated in these pages, and the winter bedding has also been referred to, but this is the first time that it has been thus pictured. That gardens and trees give beautiful pictures even in the winter months the present example testifies. Not only at Heckfield, but in some few other good gardens, winter bedding of the style here depicted is well done. Still, in the doing of this, or, indeed, of any other kind of decorative bedding, very much depends upon the peculiar requirements of the family associated with the respective Thus it happens that Viscount gardens. Eversley, whose attachment to his beautiful place is well known, seldom leaves it from the end of June to the middle of February. During that time the summer and autumn bedding is at its best, but by means of Mr. Wildsmith's arrangements, towards the end of October, when the tender plants have passed their best, and the beauty of the designs is becoming dimmed, these plants are removed, leaving all the hardy plants which generally indicate the designs, while the vacant spaces are filled up with various ornamental shrubs, Heaths, and other suitable subjects. In a few days the gay pompadour dress of the garden has given place to the sombre but more seasonable velvet attire, and the garden stands arrayed in fitness, but still in exceeding beauty for the winter months.

Then, by-and-bye, in the early spring, when the family has gone to town, the house is closed, and the gardens are no longer enlivened by the presence of those who love them so well, the shrubs that have done such good service are again returned to their summer quarters, and even then not promiscuously, but in pleasing and effective arrangement. Even in modest retirement, as well as in public view, they thus play some part in the general deco-rations of the gardens. We sometimes hear objections to any forms of bedding-out in gardens, on the ground that a large amount of labour is needed that might be otherwise employed. That is naturally a matter for em-ployer and gardener to decide upon, and not But if other garden departments were neglected that one specially favoured section should be attended to, a critic might reasonably find fault, but that is not the case at Heckfield, nor at other places where proprietor and gardener take pride in their work.

Objections are also made to the bedding system of a more reasonable kind, because all criticism based upon garden art, or even on garden practice, has a right to be heard. Unfortunately, the class of objectors or critics have little to offer in place of the bedding beyond certain stereotyped styles of planting and arrangement that may admirably suit some places, but be just as unfit for others. Still farther, nothing could tend more to detract from pleasure in gardening than the existence of monotony in garden-arrangements. Thus we find the terrace garden at Heckfield is peculiarly fitted for the style of summer and winter decoration so beautifully carried out there, and which, if to some extent uniform, is yet from year to year so far varied as to render it always pleasing. Certainly, whatever may be the correct thing in gardening high art -and of that even its most pronounced professors are not quite assured-lovers of gardening endowed with broad tastes and practical views will never cease to admire the beautiful effects that well-managed bedding-out, whether of summer, autumn, or spring plants, can give.

The Heckfield terrace garden includes on the north side some six raised oval basket beds, filled with tall and spreading Conifers, Hollies, Aucubas, Mahonias, Japan Honeysuckles, &c, all well covered and elegant; then eight long beds, four on either side of the baskets, have neat designs worked out in them, in which golden Hollies, Aucubas, small Conifers, Euonymus, Heaths, and carpets of short Heath, fill in with other carpets of Sedums, Herniaria, &c.; indeed, every bed in the garden has a raised edging of the Herniaria, the deep rich green hue of which stands out in striking contrast to the paler hue of the grass. Eight round beds also are found in this garden, some of which show on the green carpets star-shaped raised centres margined with Echeveria secunda, the bed dotted with golden Yews, silver and golden Enonymus, Erica herbacea purpurea in charming bloom, and as centre plants finely variegated Phormium tenax, in robust health and vigour. Other variations of this style are adopted, but literal descriptions of all are unnecessary.

On the east terrace we find the beds chiefly arranged in four distinct blocks of four each, with large vases for centres; but in one lot, the block that forms the angle of the terrace, the vase is now replaced by a bed that is most effectively planted with a choice selection of decorative shrubs, and the surrounding four beds are in charming keeping. Next that block comes one of a diverse pattern, and then the block, as seen in the foreground of the picture, in which the large vase planted with shrubs forms so prominent a feature. The plants which so strongly reflect the light are Mahonia aquifolia, the glossy purplish leafage in the picture coming out almost white. On either side of these blocks of beds run in admirable keeping specimens of Retinospora squarrosa, about 5 feet in height—all handsome and even. Of centre plants, besides the Phormiums, of which there are several, there are also very fine Dracæna australis lineata, and Phormium Colensoi and P. sanguineum, all very striking and unusual objects in the winter garden.

Specially charming as dot plants on the carpets left over from the autumn are fine specimens of the green Chamæpeuce, and in many beds Retinospora plumosa aurea and R. pisifera alba, with small plants of Cupressus Lawsoniana, are exceedingly effective. The east terrace comprises some thirty-four beds and vases, so that the quantity of shrubs needed to fill all effectively may be imagined. Even in the always pretty borders that run through the kitchen garden small shrubs, Coniferæ, and Heaths play an important part. Our sketch is necessarily a condensed one, but enough has been said to show that winter bedding as done at beds Retinospora plumosa aurea and R. pisifera said to show that winter bedding as done at Heckfield is very beautiful gardening indeed. X.

APPLE LANDSBERGER REINETTE. - This useful APPLE LANDSBERGER REINETTE.—Ins such Apple was the subject of a coloured illustration in the Florist and Pomologist for December, t. 600. The fruit is of moderate size, globular, or somewhat conical, with a short stalk and shallow eye; the skin. ls pale straw-colour, flushed with orange-red on the sunny side; flesh white, tender, brisk. The tree is a good bearer; season October.



ADIANTUM RHODOPHYLLUM, n. hyb. ?

FRONOS smooth, evergreen, nearly or quite a foot long, spreading, with very slender black stipites and rachides, triangular tripinnate; pinnæ few, the lowermost longest and most developed, pinnate or bipinnate, the upper undivided ones about 1½ inch long, and, as well as the 1-inch pinnules, rhombeo-trapezoid, and set on long hairlike pedicels, the margins deeply inciso-lobate, the lobes often toothed; sori rather small for the size of pinnules, occupying the apices of the lobes, but much broken up, so as to be various in form-round reniform oblong or elongate oblong; indusium smooth, narrow. Caudex erect, free from scales; stipites and rachides ebeneous

A beautiful hybrid Fern raised by Mr. Bause, and now in the hands of Messrs, Veitch & Sons, of Chelsea. In aspect it is somewhat intermediate between A. Victoriæ and the larger-pionuled forms of A. tenerum, and, being of free and vigorous habit, though not large in stature, it is one of the most ornamental Maidenhairs yet obtained. The fronds grow up together and form bushy tufts, which, in the largest plants yet seen, are not quite a foot in height and about a foot across, the individual fronds numerous but not overcrowded, and having a certain degree of boldness of outline, and a very pleasing and grace-fully curving habit, on account of which it will be a valuable decorative object. The great beauty of the Fern, however, resides in the brilliant colouring of the fronds during the earlier stages of their development and in the succession of lovely tints it puts on until they become fully expanded. The younger fronds are of a most attractive tint of rosy-purple, much stronger and brighter than in any other Fern of the same character, this tint lasting for a considerable period, and eventually passing through various shades of a soft coppery hue until it acquires firstly a pale green and then the full green colour which marks the mature fronds. These red-tinted Adiantums are all very handsome plants, and the present is certainly one of the finest amongst them. T. Moore.

CATTLEYA (LABIATA, &c.) SPECIOSISSIMA REGINA.

This is indeed a grand Cattleya, kindly sent me by Sir Trevor Lawrence, who calls it a speciosissima. It is, indeed, identical with the typical flower, kindly given me by Mr. S. Low in March, 1868, and carefully labelled and kept in my collection. It has the same broad sepals, immense petals, great column, and the, relatively, smaller lip. This has the lateral light yellow eye-spots, a reddish ferruginous line between the light rose side laciniæ, a dark mauve-purple anterior lacinia. The grand beauty consists in the rich purple colour of ovary, column, sepals, and petals. I have only once seen such a colour in Mr. Thompson's celebrated ill-known Cattleya, which is totally distinct by its shape.

Some of the best orchidists believe Cattleya speciosissima to be the same as Cattleya Luddemanniana. My excellent friend, Mr. G. Luddeman, who has always been the same kindhearted most useful correspondent during thirty-two years, gave me in September, 1882, fresh materials. I think Luddemanniana is unique in its long, narrow, equal emarginate lip, manve-purple at the top, with two ochre blotches and light purple diverging bars in two leng rows on the disc. Herr Franz Kramer, of Klein, Flottbeek, sent me as speciosissima Lowei something that pertains much better to the narrow lipped Luddemanniana, though distinct in colour, the anterior part of the lip not being mauve-purple, but covered with purple.

I think our young queen, "regina," one of the grandest Cattleyas ever seen. H. G. Rchb. f.

LACHENALIA TIGRINA VAR. WAREI, Baker.

This is a handsome new form of Lachenalia, well worth the attention of cultivators. It has the variety of bright colouring with which we are familiar in L. quadricolor, Jacq., Ic., t. 396; Andr., Bot. Reg., t. 148; but it is not a variety of tricolor at all, but in all essential points of botanical character agrees with an entirely distinct species, L. rubida, Jacq., figured Bot. Mag., t. 993. It is much more handsome than the type or either of the two varieties (tigrina and

punctata) known already, so that it is to be hoped that Mr. Ware, from whom the specimens came, may succeed in multiplying it.

Leaves two, oblong-lanceolate, 4-5 inches long, with copious darker green round spots on a dull glaucous green groundwork. Scape green, sparingly mottled with bright red-brown. Flowers 10-12, in a dense raceme; pedicel jellow, \(\frac{1}{a} - \frac{1}{6}\) inch; bracts lanceolate, looger than pedicel. Perianth 1\(\frac{1}{6}\) inch jong; outer segments two-thirds as long as the inner, bright red at the base, bright yellow in the middle, tipped with green; inner segments protruding \{ incb beyond the outer, the orbicular blade & inch broad, greenish-yellow, with a reddish-brown margin. J. G.

PHALÆNOPSIS STUARTIANA HRUBVANA, nov. var.

A glorious variety, having petals and sepals purple at the back, with a white broad margin on the petals, a narrow one on the upper sepal, the inner border of the lateral sepals also white. It has just flowered with Herr Baron von Hruby, Peckar, near Colin, in Bohemia, the most intelligent possessor of a very fine collection grown by Mr. Skopec. There also is most probably the grandest specimen of Renanthera Lowei, and which has given an opportunity for very interesting experiments, about which we may soon he instructed, H. G. Rchb, f.

ONCIDIUM PRÆTEXTUM BELLUM, n. var.

This has a glorious yellow lip, with numerous brown spots on the disc, and an interrupted border of similar partly semilunar blotches. Its tall column, widely extended tabula infrastigmatica and calli prevent its being O. Forbesi; the shape of its lip is against regarding it O. crispum. It has a very broad, furrowed pseudobulh. I have to thank for it Dr. Wallace, of the New Bulb Company, Lion Walk, Colchester. H. G. Rchb. .

RHUBARBS.

I HAVE the following sorts of Rhubarb, all growing on one piece of land here, under similar conditions, except that Paragon and Stott's Monarch have only had one season's previous growth, while all the others have had two. They are in rows side by side, so that comparisons regarding some of their respective merits may easily be made. As regards earliness they take the following order :- Ist, Royal Albert; 2d, very slightly later, Scarlet Defiance; then Champagne, followed at a greater distance by Linnæus; after which comes Johnston's St. Martin's, then Paragon, then Victoria, and, lastly (only just-March 14-beginning to show above-ground), Stott's Monarch.

The latter, certainly the monarch of all as regards The latter, certainly the monator of an as regards size, will, I imagine, when the merits of Rhubarb generally are better recognised, be more heard of than it is now. From what I have seen of it at present it appears to mark a great advance in Rhubarb culture, despite its lateness. None of the varieties on the before-named piece of land had been pulled from at the date of these observations (March 14), but Royal Albert was just ready to pull, and the grada-tions in point of forwardness seemed nearly equal tions in point of forwardness seemed nearly equal from this to the last, except that Scarlet Defiance was very close on its heels, and that Scarlet Defiance was very close on its heels, and the step from Champagne to Linneus was wider than the rest. Faragon has only lately been sent out, and is still being advertised as an extra early, as well as an extremely productive variety, but compared with the other storia associated with it on light sandy soil, manured with house sewage from a neighbouring dead well, it is here apparently the latest of all, excepting only Victoria and the gigantic Stot's Monarch.

I hope to test all for flavour shortly. I should much like to know, and pethaps you or some of your correspondents can inform me, if chemical analyses of Rhubarb stalks of various sorts in various stages of growth have ever been made, and, if so, where

growth have ever been made, and, if so, where information on the subject can be obtained? What is the Royal Horticultual Society doing, that it does not offer its members information on matters of this kind? Comparisons are no doubt sometimes apt to kind? Comparisons are no doubt sometimes apt to be odious, and if subscribers of 21s, per annum each to the Royal Horticultural Society and the Royal Agricultural Society make one, as to what they get in return for that sum annually from each of these two societies respectively, this comparison will not be at all in favour of the lormer. F. E. Eving, Eaton, Korvuich, March 14, You will find an analysis of the stem and leaves of Rhubarb quoted in Watts' Dictionary of Chemistry, vol. v., p. 1085; but the analysis of the ash alone is misleading for practical authorized.

purposes. ED.]

WHICH IS WHICH?

GENDERS are very apt to go astray in garden catalogues, and the complications and accretions of botanical nomenclature frequently bring about a very "mixed" condition of affairs. The other day we had to note, for instance, a Narcissus minor major, which, after all, is no more remarkable than a white blackbird. One very general rule is that the names of trees and plants are feminine, and, as in the case of Rosa, demand that the qualifying adjective shall be feminine also; but unfortunately Greek nouns ending in "a" are neuter, and then the rule will not apply. Again, though the rule is as we have stated it, the exceptions wherein the name of the plant takes a masculine or a neuter form are extremely numerous, and nothing but an acquaintance with the Latin and Greek grammars, or a reference to some scholarly friend, will suffice to help the puzzled ones out of their difficulties. Another complication arises when the name of a variety has to be added on to that of species-e.g., Narcissus Bulbocodium var. monophylla. Here we have all three genders together-the generic is masculine, specific is neuter, and the varietal feminine. It would seem as if they could not all be right, yet it would be difficult to prove that any one of them is

No one will question the masculinity of Narcissus, even though he had one reputedly feminine qualification. Bulbocodium is an old name once used in a generic sease, and, therefore, entitled for distinction's sake to the use of a capital letter to begin with, and also to retain its original neuter termination. Whether the varietal name is rightly placed in the feminine or no depends on circumstances. If the specific name is feminine, of course the varietal name must follow suit, but if it is neuter the varietal name should he neuter also. How, then, can the term Narcissus Bulbocodium var. monophylla be justified i To this question the reply is, that the insertion of the abbreviation var. for varietas, which is feminine, demands a feminine termination; but if the word var. be omitted, then the rule would be for the variety to follow the specific name—neuter if masculine if masculine, and so on. But in order to elicit the views of the distinguished codifier of hotanical nomenclature, we solicited an expression of opinion from M. Alphonse de Candolle, who obligingly responds to our request in the following terms:—"I have sometimes put to myself the same question as to the gender of the names of varieties, and it is most likely that in practice I have it sometimes in one way sometimes in another, but I have just been looking to the practice of authors of repute, and I observe that, in general, they have made the varietal name conform to the gender of the generic name, thus :-

- " Nasturtium amphibium, a indivisum, DC., Syst., ii.,
- p. 117. "Thymus Serpyllum, β montanus, Benth., in Prodr., xii.
 "Phyllanthus simplex, β oblongifolius, Müller, in
- Prodr., xv., &c.

If the word "varietas," or the abbreviation 'var,' be employed, it seems most correct to make the adjective feminine. The use of Greek letters to indicate varieties, thus: a, B, y, corresponds to the employment of figures, which have no gender. On the other hand, when the idea is expressed by a qualifying 'var.' or 'varietas,' a sentence is made which must be constructed in the correct grammatical manner. The name of the variety becomes in this case an adjective qualifying 'varietas,' and should, therefore, take a feminine termination. Eoglish writers generally use the abbreviation 'var.' LINNÆUS indicated the varieties by the Greek letters, α , β , γ , without, as a rule, adding any other epithet. Continental authors have mainly conformed to Linnean usage, and do not write 'var.' This is in conformity with the omission of 'gen.' before the genetic, or 'sp.' hefore the specific name. Alph. de Candolle."

The plan of using Greek letters only would not commend itself to catalogue makers who have a special affection for superbissima, splendidissima, nobilis fl, plenissima, and all the rest of it.

Perhaps the simplest and most easily recollected rule would be to make the varietal name feminine in all cases, whether the "var." or "varieta" were expressed or understood. This at least would be intelligible, and would conduce to uniformity of practice.

TRANSPLANTING TREES AND PROPAGATING THE CAMELLIA. SHRUBS.

WITHOUT pretending to having found an infallible method, I wish to describe a plan that has been found of considerable value in a variety of soils, and especially in those that are brashy, or containing coarse gravel or large studes. In these soils the most essential point to observe, next to seeming all the roots possible lying beyond the range of the ball, is to see that the ball itself is compact and firm, and that it remains so until it is placed in its new station. We will suppose a tree or bush has to be moved that will require a ball of 3 feet in diameter, and 11 foot in depth. A trench should be marked out, either circular or square, at 6 feet from the stem; and 3 feet deep, shovel this out clean, taking care of all roots, binding them with matting and tastening them up to pegs of 11 foot high stuck in the ball: now carefully fork down in a perpendicular direction the soil right to the bottom (3 feet), and keep the trench quite clear, and so continue to work inwards till the ball is of the size at which it is intended to move it. The sides of the hall should he upright, and be made roughly regular. For a ball of this diameter a dozen bits of board (generally called packing), nearly as deep as the ball, three-quarters of an ioch thick, and 4 or 5 inches broad, should be placed perpendicularly at short intervals against the sides, and be firmly kept together with a stout piece of rope and a short wooden lever. Now all is safe, it is ready lor the next step-that of undermining, which should he carefully and gradually done with the spade and pick :

larger balls require special tools.

This undermining should be carried on till nothing remains but a pillar of earth directly under the centre of the tree, the bottom of the ball being made quite level. This is now ready for removal on a broad sheet of stout iron plate with hooks at the four corners to which chains can be fastened. can usually easily be placed under the ball by tipping it backwards so as to get the plate in the middle of the weight. The short chains can be attached to the corners, passed over two stont carrying levers of Ash, and the ball heaved over still more, so as to allow of a stout plank being shoved underneath on which the iron plate will slide easily upward out of the hole, especially if the plank be made wet. When a ball is very heavy, and the way out of the hole steep, as it will be in some cases, a horse can be attached a chain passed round the ball, and the ball thus pulled up the plank. When the plant is once out of the hole it can be run along on wetted planks, or be slid up the plank upon a low two-wheeled truck, and transported to its new site. For larger trees than those with balls of 3 feet diameter sets of oaken boards, six in number, are the best to employ. These are usually made so as to form platforms 3 feet square for balls of 4 feet diameter, 32 feet square for 41 feet diameter, and so on; but for trees of more than 5 feet diameter other and stronger appliances and special machines are required, of which I will not speak at this time.

The boards above-mentioned are best made of inch stuff, free from knots ; the breadth may be from 8 to 10 inches, and should have their inner edges slightly hollowed out, so as to let the little convexity of the ball drop easier on to them. Four of these boards have screw-holes passing through iron plates near the ends, so that by passing a bolt through they can be screwed tightly together with a thumb-screw The undermost pair of boards are provided with rings fastened on with longish iron straps and screws, to which chains for heaving can he attached. The third pair of boards that are used loose are unprovided with screw-holes or rings, and are also slightly hollow on one edge, are useful to push under the ball to keep it in an upright position and to steady it.

When such a platform as the above described one has been placed piecemeal under a ball properly prepared, it can be blocked up with wooden blocks placed under it; then the middle pillar of earth can be shovelled away, two stout planks pushed under the hall so as to form an inclined plane, up which the tree must be drawn and pushed, as with the ball on the iron plate. Such simple appliances as the above iron plate and hoard platforms, with a few stout planks, wooden blocks of varying thickness, and a low two-wheeled truck for small specimens, and a four-wheeled one for large ones, should be found on all well-appointed places. M.

ONE way in which the gardener desirous of increasing his stock of these is by procuring seeds of C. simplex or cuttings, and thereby raising his own stocks for grafting purposes. The stocks are easily raised from cuttings of the above-mentioned sort, struck in heat in late spring in a propagating pit on a bed where the bottom-heat is not higher than 85°. They can be struck in pots or shallow boxes; but the sand-bed lying on boards or tiles immediately over the bottom-heat pipes affords equally graded warmth to every cutting in it, and so the rooting takes place simultaneously. Such stocks when potted must be accorded greenhouse temperature for the ensuing summer. They may be planted out in a frame, and be allowed to stay in it during the first and second summer, when they must be taken up and potted in September. Sometimes stocks are found to be strong enough after only one summer's growth to be taken in hand and grafted, and, in fact, exceptionally well rooted cuttings potted off in May may be worked the same summer; but the stocks make stronger growth, and consequently more roots with which to sustain the future scion, when not worked so

Ordinary practitioners, who will not perhaps possess an air-tight case within their propagating pit, will manage very well by sinking a two-light box inside of a larger or a three-light one, the distance between the lights of the one and the other not being less than 2 feet. This will make a very close shady pit that will also require closely shading during the hours of sunshine. One-year-old wood is the best, but it may be two years old; the scions may be side-grafted, or the stock may be cleft or whip-grafted. should be tied in moderately firm, and the united parts well smeared with grafting wax to keep out water; the tip of the scion, if the bud has been cut off, must be sealed with the wax as well as the cut-The stock must retain some portion of over stock. its foliage till a junction has taken place, when it may be cut off from time to time, so as not to check growth or endanger the health of the plant. must be taken that each plant as soon as grafted be placed in a frame, and be securely shut up, and, if requisite, shaded. On this much depends, as flagging of the foliage of the scion is oftentimes fatal to it, and invariably makes the uniting process more tedious.

The inner frame must be made very damp by a copious watering, the plants themselves must get one thorough saturating at first, and all must be made close with no broken panes or ill-fitting joints or lights. There should be no examination of the frame for two or three weeks, the admission of air being usually followed by bad results, and, the air being at satura-tion point within it, there will be no need for watering or syringing.

Plants must be kept in the frame till they have made some 2 inches of growth, which they will do in four or five weeks. When a plant has grown so much it is better removed to airier quarters, shaded and syringed, and thus gradually inured to greenhouse regimen. The frame may require a thorough watering about the fourth week, but the other points of management must be persevered in till it is seen that all those that are likely to succeed have made the required amount of growth, and it may be taken for granted that those which will do so will not need more than six weeks from first to last. The proper time to begin is the end of June, when the current year's wood has got firm, but not ripe. Y.

LIÈGE BOTANIC GARDEN.

Some time since we had occasion to comment on the miserable condition of certain of the Continental hotanic gardens, and of the lamentable results as regards scientific botany. In Belgium, of late years, an advance has been made, especially in the Brussels Botanic Garden, and the illustrations we are now enabled to give (figs. 68-71) will testify to the fact that well-directed zeal and energy are not lacking in Liège, and that they are recognised by the State. the city, sometimes called the Birmingham of Belgium, much has been done of late to construct new buildings and to put the Botanic Garden on a proper footing, thus M. Morren, the Director, has had the happiness of completing what his eminent father, Charles Morren, began. The new buildings are arranged in two divisions, separated by a terrace of

fine proportions. The upper group consists of a centre devoted to large plant-houses, and wings containing the rooms necessary for scientific instruction. In one wing to the right, in the subjoined plan, is the lecture-room, capable of holding over 200 students. Adjacent is the laboratory, in which practical demonstrations by the aid of the microscope and dissecting needle are given of the subjects which bave been discussed by the lecturer, and in which the students can

is filled with economic and other plants. In the left wing are the museums of economic botany, libraries and physiological laboratory. The terrace is supported by a well-designed wall, carrying a balustrade with pilasters and ornamental vases. From the centre proceeds a flight of steps to a central space, in which the pits and frames and the experimental plots will be established. On three sides of this central enclosure are the smaller bot-houses, forming

But the completion of the Botauic Garden is only one of the many improvements and additions made to the University of Liège. Institutes of Pharmacy, of Technical Electricity, of Zoology, of Medicine, are completed or in progress. Liège has thus the start of the sister University of Ghent, where last spring, at the time of the Quinquennial, it will be remembered that the foundation stone of new buildings of a similar kind was duly laid. At Ghent has our readers know, is

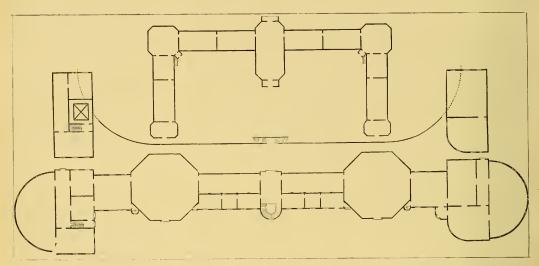


FIG. 68,-LIÈGE BOTANIC GARDEN: PLAN SHOWING THE ARRANGEMENT OF THE UPPER AND LOWER RANGES, SEPARATED BY THE TERRACE.

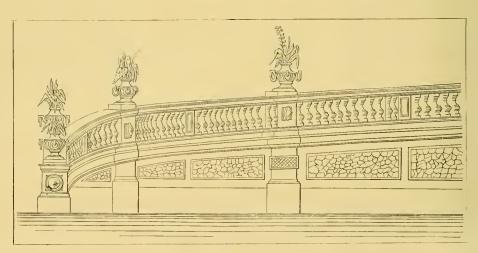


FIG. 69.-LIÈGE BOTANIC GARDEN : PART OF THE TERRACE WALL

work for themselves. In the centre of this block of buildings are the Director's office, and three rooms in which the herbaria are deposited. The Director's office communicates with a work-room, destined more particularly for the use of advanced students and others desirous of undertaking original research. One of the rotundas in the principal range contains a collection of Paims and other tropical plants, and is provided with a gallery running round the building. A new rotunda has been built at one end, to correspond with the old one, and this

a continuous range. At each angle are elegant pavilions, and in the centre of the range an oblong structure to serve as an aquarium for the cultivation of fresh and salt-water plants. The details have been fully considered by the Director, Professor Morren, and well carried out by the architect, M. Noppius. In the centre of the garden is a large rockery, with compartments for plants of different requirements as to soil, moisture, &c. The new buildings were formally opened in November last.

also a regularly equipped School of Horticulture for instruction both in the principles and in the practice of horticulture, and connected with the University. The Belgian Mioistry have acted on the axiom, that the duty of the State to the people consists of three parts—"the first is education; the second is education; the third is education, the Government has felt it their duty to expend public money liberally in support of the Universities, which were formerly a charge upon the municipalities, with a view to raise them to the level

of the neighbouring German Universities—an arrangement which could not be carried out with the meagre funds provided by the municipal treasuries. Liège last year had no fewer than 1400 students (as against 240 in 1840), and this number is about the average in acach of the four Belgian Universities—a much larger number than in the corresponding establishments of Holland or Switzerland; and among the twenty-one Universities of Germany only six have more than

Foreign Correspondence.

Notes from a Sicilian Garden.—The unique and richly planted garden of the Conte Tasca, near Palermo, situated on the Corso leading to the mountain town of Monreale, is one that is laid out in the so-called English or natural style. As might be imagined from its geographical positioo, the bulk of

the floral display is the scantiest. In the month of May we saw a group of Senecio, purple, bordered with a rose-coloured Bellis, the whole being margined by an orange-flowered Echeveria. Another bed consisted of Libonia floribunda, half-hidden under a growth of dwarf Papyrus. Still another of Primula sinensis dotted about amongst the greenery of a carpet of Isolepis gracilis, having an edging of Poa pratensis variegata. A bed of Cineraria mixed with Russellia

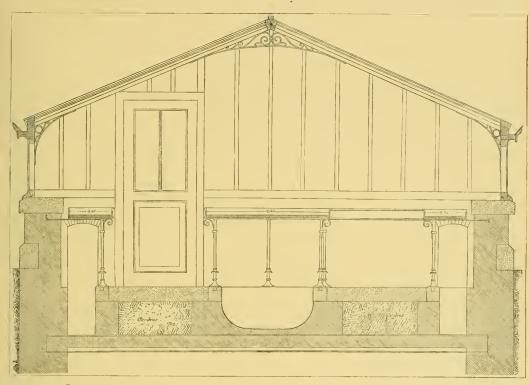


FIG 70.-LIÈGE BOTANIC GARDEN: SECTION ACROSS THE RANGE, SHOWING WATER-TANK, STAGING, CINDER BEDS, ETC.

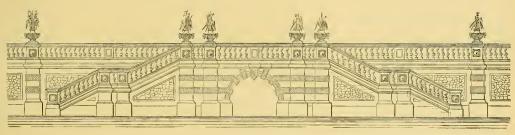


FIG. 71.- CENTRE OF THE TERRACE WALL, SHOWING THE STEPS LEADING TO THE GARDEN.

1200 students. One special characteristic of the Belgian Universities, as we have remarked, is the association of technical institutes such as that now on the point of completion at South Kensington, where the practical details of science in its bearing on industry and manufactures may be learnt, while in other departments of the University instruction in the principles on which the practice is or should be based is given. We cannot doubt that the future will bear witness to the sagacity and value of these proceedings.

the subjects made use of for its embellishment are trees, and other plant-forms, that we recognise as well known inmates of our plant-houses, and which we in our northern climate dare only to place out-of doors in the warmest months, although there they are planted out permauently. Among the Palms are Corpha australis, Latania borbonica, Araucaria Bidwilli and A. Cunninghami, that grow into grand specimens. The climate is such that there are no fears that they will suffer from inclemency of the weather, and it is not easy to say in which month

juncea; also another of flowering Alpinias and Hedychiums surrounded with a band of Maranta zebrina and pretty Adiantum associated together. Farticularly charming was a group in the shade of Palms of Sobralias, interspersed with Begonias with handsome foliage.

B

Yucca draconis and Yucca Treculeana were associated in singular looking groups with Cycads, magnificent Dioon, and fruiting Encephalartos. Passifloras in variety, Cobceas, Solanum jasminoides, Tecoma and Bignonias, coil and creep over the

verandahs, and climb the stems of the trees uncontrolled.

We have extracted these few notes on the specialities of this charming Sicilian garden, from the Garten Zeitung of the present month, in the impression that they might furnish our subtropical gardeners with a few new ideas and novelties in graceful combinations of flowering and foliage vegetation, and so add interest to that portion of the garden embellishment. We cannot have Cycads, Aloes, and the like, planted out permanently, but it is possible to employ these plants in more pleasing ways than in growing them in ugly tubs, and stationing them in single or double file on a terrace walk, to which they are but little ornament,

The Benbageous Bonden.

NARCISSUS PSEUDO NARCISSUS MINOR. -- In spite of the opinion of recent botanists, that all the Trumpet Daffodils are natural or garden varieties of one species, the names which botanists early in this century endeavoured to attach to fixed varieties are still retained in gardens. The varieties themselves are many of them of very old date, and have been preserved the same for at least 250 years; for when once they got into the hands of the Dutch cultivators, who seldom attempt to hybridise or to grow varieties of Daffodil from seed, they remained the same through many generations. It is certain, however, that Salisbury, Haworth, and Herbert, who are still considered authorities on this subject, are at variance both as to the characters which are most important in determining differences and as to the names to be adopted for the varieties which they describe. Of these three, I believe, Herbert has been thought to be the best botanist, so it may be worth while briefly to notice what he says about this. On p. 295 of Amaryllidacece he says:—"Mr. Salisbury had a remarkable intuitive perception of differences, though he was unable to give any account of the existing marks of distinction. I am indebted to him for nothing in this order but naked names of genera." Mr. Haworth says that "his own characters are founded on the solid laws of botanical proportions; but it is utterly impossible that the scientific public should ever adopt his generic characters. The erroneous features on which he has built are the relative proportion of the tube, limb, and cup, the form and margin of the cup, the colour of the flower, the length of the filaments and style; and though his names, which Mr. Salisbury first published without any definitions, will be properly retained, they must be attached to generic characters very different from those given by Mr. Haworth." Herbeit then gives us his own views on p. 294:- "An equal or unequal adherence of the sepaline and petaline filaments, a decided difference in the form and attachment of the anthers, a decided upward flexion compared with a decided rectitude or connivance of the stamina, may be generally relied upon as signs of a generic diversity.

It is evident from these extracts that in dealing with garden varieties the characters adopted by Haworth are far more important, as well as more easy to recognise, than those proposed by Herbert; consequently, in spite of the utterly ungrammatical Latin in which Haworth's monograph is written, made worse by frequent misprints, it is far more easy to work with Haworth, and to recogoise the flower he describes, than with Herbert. Moreover, however sound Herbert's principles of arrangement may be, he was not satisfied with the way in which he had himself applied them, but in the year during which his Amaryllidaceae was in the press he changed his opinion about many of the Trumpet Daffodils, and in a postscript on p. 415 proposed quite a different arrangement of them from that adopted in the body of his work.

In some notes on Trumpet Daffodils recently printed in the Gardeners' Chronicle I mentioned a few of the older varieties which were larger than the typical N. Pseudo-Narcissus. I now mention a few which are smaller. The smallest of them, N. minimus, is interesting as being the only one of the golden-yellow selfs, except the Tenby Daffodil, of which I have obtained truly wild specimens. It was, I believe, the only true Daffodil met with by Mr. G. Maw and Mr. Harpur Crewe in early spring during a tour through Spain made about five years ago, Mr.

Harpur Crewe gave me specimens, which agree with those I have had from English gardens. It seems rather delicate of constitution, and hardly increases with me at all. N. minor is remarkable for its dwarf stature and the large prominent lobes of the trumpet. In form and colour it resembles minimus, and is distinct from it in nothing but size. Both these Daffodils have narrow perianth segments, not imbricated, being quite free from one another when opened at an angle of 45° to the trunk. Nanus is the common dwarf Daffodil of English gardens, being far more general in cultivation than the other two, probably because it is hardier, and in most soils far more rapid of increase. It has broad imbricated perianth segments, lighter in shade than the trumpet, but not so light as in the common wild Daffodil, between which and N. minor it seems to be an intermediate form. There are one or two others, one sold by Messrs. Krelage as pumilus, which seems distinct, but which I have not yet fully studied. These have all the outer petals darker than in the common wild form; the South of France, near the Pyrenees, several varieties occur which come very near typical N. Pseudo-Narcissus in form, size, and habit, but have all the parts of the flower lighter in colour, and in some instances have the mouth of the trumpet nearly or entirely even and plain. I have many of these now flowering in my garden, and hardly any two of them are exactly alike. Some approach near in colour to moschatus, and I believe that on farther investigation a series may be obtained from the habitat I have mentioned connecting the so-called white flowered Daffodils with the common type in colour. In fact, there is a field in Oxfordshire where white and yellow grow mixed up together; and from these, and a large number of varieties of white flowered kinds collected from different gardens, I hope in time to convince Mr. Barr that these albifloræ amongst Ajax Daffodils owe their origin to accidental variety of colouring. A box of Daffodil flowers just received from the Pyrenees confirms this opinion. C. Wolley Dod, Llandudno,

DOUBLE DAFFODILS. - I see the Editor placed a query to the paragraph in my last note (p. 309) where I said it was possible that a double Daffodil, is a species having the power of perpetuating its quality by seeds. Well, who dare say it is impossible? Upon the same page are some very interesting notes on double Stocks, which may help to throw light also upon the question of double Daffodils if we substitute the one name for the other. The writer says :- "In the case of double Stocks both stamens and pistil are changed into petals; seed cannot, therefore, be had from full flowers in these sorts, and the only resource is to save seed from those single flowers in which a tendency to fulness has com-menced by having a petal or two more than usual." Now here, I think, we have a clue to the formation of doubles; for if this slight tendency in Stocks gives seed which produces actual doubles, as is the fact on an enormous scale commercially, why not so in Daffodils I noticed last year a large number of bicolor Daffodils, chiefly Horsfieldii, which had been grown on highly manured and otherwise rich and suitable soil, and which contained eight or more petals, or perianth segments, iostead of the typical six. These flowers were thus in the first stage of doubling, and probably seed from such flowers might produce doubles. have also observed that the double Rocket becomes single, and when this happens the florists hereabouts carefully save the seed from such a plant, believing it will again yield a proportion of doubles. No doubt it will be the case that if the whole of the stamens and pistils in a double flower are converted into petals, no seed can be produced; but a flower may be double and yet not all its seed-producing organs have been thus altered; and in the latter case we should have a chance of propagation by seeds. I apprehend this is the experience with many flowers, such as double Cinerarias and Primulas. for example. By analogy we may perhaps get at the truth with regard to Daffodils also, Wm. Brockbank, Brockhurst, Didsbury.

LEUCOJUM TRICHOPHYLLUM, OR ACIS TRICHO-PHYLLUS.— In last week's Gardeners' Chronicle "Floore" asks if this plant "is yet in cultivation." I am afraid this is doubtful, since Mr. Brockbank, who has been studying the genus, and inquiring for the different species, does not appear to have met with it. I observe that it is given in Donn's Catalogue of 1823, two years after Mr. Griffin flowered it at South Lambeth. It does not necessarily follow that it was at that date actually in the Cambridge garden, but it was there a few years ago, and between the years 1868 and 1872 there was a nice patch of it at the foot of a rockwork; I understand, however, that it is no longer there. The flower was smaller than represented, 544 Fol. Reg.; white, with hair-like twisted leaves, spring-blooming. It appeared to be quite hardy, fully as much so as L. autumnale. If lost to cultivation I apprehend it will have to be sought for, not in Portugal or Barbary, but in the eastern provinces of Russia, whence, by way of Moscow, Mr. Griffin procured his bulbs, T. H. Archer-Hind, South Devon, March 17.

RANUNCULUS ACONITIFOLIUS.—Mr. Brockbank asks (p. 310) whether the single form of Ranunculus aconitifolius is good? We got it a lew years ago, I think from the College Botanic Gardens, Dublin. It increases slowly, and is less pretty than the double form (the Fair Maids of France), or than the larger single-flowered R. amplexicaulis, which does but badly here, though in some soils it appears to grow luxuriantly with no special care. We are now trying it in a bog bed. C. M. Oven.

SCILLAS. - Scilla sibirica grows here luxuriantly in a rich light soil, the bulbs increasing quickly, and it often sows itself freely. If planted in groups or in small beds, especially if the latter be bordered with Narcissus nanus, the effect is one of the prettiest bits of colouring in a spring garden. The singular beauty of Chionodoxa Luciliæ increases year by year as the bulbs become established. A good group of Scilla bifolia taurica left undisturbed for five or six years shows how superior this form is, both in size of flower and depth of colour, to the type, or to the pink and pretty white varieties. The succession of various kinds of Scillas will now continue almost without intermission till it winds up with the small S, autumpalis, S, ameena (not one of the prettiest) and S. italica quickly succeed the early spring kinds. When grown in well established groups S. italica is very effective. S. nutans and S. campanulata, with their varieties, S. veroa and some of the large flowering kinds, are all worth a place in some part of the flower or wild C. M. Orven. garden.

--- That biflora was a slip of the pen for bifolia must have been evident to all. My remarks as to the comparatively slow rate of increase of sibirica, however, seem rather to be supported than otherwise by "Daf," who, in being successful in raising bulbs from seed, is perchance more fortunate than most others. Technically it is not correct to call the most others. Technically it is not correct to call the Chionodoxa a Squill, but it is less inexact than calling it "Glory of the Snow" [the English equivalent of the Greek name given by Boissier]. Now if I wanted to find a flower that merited such a term, it would surely be the lovely white-flowered Primula nivalis, that I have in small pots, blooming so charmingly that I should regard a mass of it as even more glorious than the soow. I find this year that plants remaining in the small pots for the second season without shifting are blooming far more freely and more beautifully than they have done in previous years. A few plants in a cool house, just now blooming as mine are, will challenge our admiration even with Orchids. And again, how very pretty is the yellow-flowered Anemone ranunculoides in pots, too, and in a cool house. Really it is difficult to say how many of these spring gems one may not have in a small house, and how exceeding may be the enjoyment obtained from such a collection. The vellow Anemone thrives well in the same pots for two or three years; mine indeed are better this year than ever. Specially fitted for a cool house are the numerous forms of Primula Sieboldi. These in big pots and pans are now coming freely into bloom, and will give a beautiful show of flowers for several weeks. But the denizens of any wellfilled house of hardy plants are, or at least should be, legion. Quercus.

DIRCA PALUSTRIS (THE LEATHER-WOOD).—
Though once, perhaps, common, as Loudon observes, it is now rather a rare shrub. It is more curious than beautiful, but its habit is quite distinct. The flowers are pale yellow, and appear before the leaves. They are tubular, and the leaves are oblong, of yellowish-green, forming a dense foliage. There is a fine specimen in the Cambridge Botanic Garden, 26 feet in circumference.

Prehid Notes and Hleanings.

ORCHIDS FROM CAMDEN WOOD .- Mr. Vanner kindly sent us on Monday from Camden Wood, Chislehurst, the finest spike of Phalænopsis Stuartiana that has come under our notice. It was five-branched, and bore thirty-two flowers of a very good type, the white being pure, and the spotting on the greenishlemon-coloured ground bright and well-defined. With it came a flower of a white Cattleya Trianze without a tinge of pink on the lip, and two blooms of a glorious variety bought at Stevens' early last year, and believed to be one of Chesterton's importations from the Popayan district. It is the finest of this hatch that we have seen, being as large in all its parts as Mr. Woollright's flower described by Professor Reichenbach in the next paragraph, but with a more richly coloured lip, the lovely shade of purple being distributed over a larger surface. Two magnificent wax-like blooms of Cymbidium ehurneum, and a fine spike of a very fine form of the Hawthorn-scented Odontoglossum gloriosum, completed a quartet of singularly beautiful objects.

CATTLEYA TRIANÆI POPAYAN.-The first flowers I had from Mr. De B. Crawshay, Rosefield, Sevenoaks, Kent, from Mr. John Woollright, The Hollies, Mossley Hill, Liverpool, and Mr. B. S. Williams. All were equally remarkable for a certain shade of the lilac, that I venture to call lilac with a certain homoeopathic brush of ash colour, or, for painters, lilac with too much strong white. One of the flowers sent by Mr. Woollright was exceedingly grand and sur-passed all others. I feel very disappointed to say we had in the Hamburgh Botanic Gardens three Popayans in flower, which were quite the ordinary Trianæs, with good pure lilac. It might be dangerous for many personal reasons to give an especial name to this variety. I have most enthusiastic letters about it, which leads me to suppose that there are still disposable specimens for sale, H. G. Rehb, f. [Mr. Woollright sent us a very fine bloom from the same plant, which had been expanded five weeks without any shade. ED.]

ODONTOGLOSSUM ELECANS (POLLETT'S VAR.).—
—The lovely hybrid of O. Hallii, which was illustrated in the Gardenees' Chronicle in June, 1853, is again in flower with Mr. Pollett at Fernside, Bickley, at is one of the most elegant of the genus, as well as one of the ratest, and seen as at Fernside, with three spikes, bearing altogether forty-five flowers, it leaves but one thing to regret about it, viz., that it must for years to come be beyond the reach of many who would like to possess it. The flowers are creamy-white, heavily blotched with crimson-brown, and having the yellow crest of O. Hallii at the base of the labellum, In outline and in the curl of the long-pointed sepals and petals they much resemble a large form of O. cirrosum. It is strongly scented of Hawthorn.

PHALENOPSIS STUARTIANA, Rehb, f. — Major A. F. Léndy, Sunbury-on-Thames, has kindly forwarded me a very great botanic wonder. It is a five-flowered raceme of Phalenopsis Stuartiana, with very good colours. The merit of those flowers, however, is to have universally unguiculate triangular obtusangled petals, with a toothed ancipitous keel, decidedly similar to the callus of lip. The whole flower is covered with spots and dots. This is to be regarded as a case of intended trilabellia, as three lips are no doubt were intended. When the petals wholly change in lips, then the anther disappears, and a terminal stigma ends the style. May we hope Major A. F. Lendy will kindly observe the avenir of his great curiosity. Will it keep constant? How long? H. G. Rehb, f.

SACCOLABIUM GIGANTEUM, IVall.—My expectation that all the eastern individuals of this plant would be the improved variety, lilustre, only to be discerned by far larger blotches of the flowers, may be a mistake, provided there have not taken place confusions about the origin of the specimeos, as is said to have been the case in Cattleya Dowiana and aurea. Mr. De B. Crawshay, of Sevenoaks, has just sent me four flowers with small spots, called illustre, but not surpassing the old Birmese plant. Another variety from the same correspondent had only very minute spots. Mons, Godefroy Lebeuf sent me a, no

doubt, Cochin Chinese spike with crimson lips. I thought them very fine, till I had the crèveaur of seeing spikes of common giganteum, assuming similar crimson lips on my table after having had them purple before. I hear that at some places all the old Saccolabium giganteum have disappeared, and nothing but illustres have taken their places. To avoid being regarded the cause of these guid pro quos, I would warn collectors not to give higher prices for varieties, if they are not seen in flower. If this rule were well followed, all parties would benefit. If I were in the trade, I should dislike having given a unique grand variety for a low price, and if I were a collector I would not like to pay for rubbish at high prices. II. G. Rehb. f.

The Flower Handen.

THE SPRING GARDEN has now recovered from the effects of the heavy storms of wind and rain which prevailed through January and February, and as spring frosts have not yet been sufficiently severe to do any mischief, the general appearance of the spring garden is charming. The most important work now consists in keeping every part clean and in perfect order. Everything should bear the stamp of neatness and good keeping. The surface soil should be carefully loosened between the plants, so as not only to destroy weeds, but also to prevent the surface of the beds from becoming hard and impervious to air and moisture. Where required, the plants should be pegged down, or tied, so as to cover as well as possible the earth underneath them, as well as to protect them from heavy storms of wind or rain. The flower-stems of Hyacinths, Tulips, and other bulbs require particular attention in this respect, as they are so easily broken off. There is, perhaps, at this time no plant so bright and beautiful as the dwarf scarlet Wind-flower (Anemone stellata fulgens): it is so charming at mid-day as to arrest the attention of the most casual observer. No spring garden is complete without it. Another very beautiful plant, blooming most abundantly at this time, is Chio-nodoxa Luciliæ, the pale blue flowers of which, although not so deep in colour as those of the Scilla, which it closely resembles, are still very charming, and as it is perfectly hardy, and when established blooms most profusely, it is a great acquisition. Iris reticulata is also a gem at the present time, especially where it is favoured with a warm sunny border. As hardy and most useful plants for small beds Dean's deep coloured crimson Primroses are most effective. No one can form the least idea of their beauty till they see them in masses. Seeds should be sown now in boxes and placed in a cold frame; the plants should be pricked out in a sandy, somewhat shady border when large enough to bandle, where they will make good strong plants for blooming next spring.

Roses.—The time has now arrived when many of the early kinds must of necessity be pruned: great caution should, however, still be exercised, in not pruoing too closely, but rather shorten the branches by degrees, so as to keep the still unbroken buds dormant as long as possible. Protection to the Teas and Noisettes should now be provided, as one night's frost at this time, in their present tender and unusually succulent condition, would without protection not only destroy the buds, but the plants also would most probably be permanently injured. No kind is more susceptible to injury than Maréchal Niel, which should always receive protection of some kind. For this purpose there is no more useful materials than either Frigi-Domo or Britain's Elastic Netting. If neither of these can be obtained, common garden mats or even evergreen branches may be used for the purpose, taking care to remove them when danger from frost is past.

SUMMER BEDDING PLANTS.—The required stock of these having now been obtained, they should be potted off as quickly as possible; and when established, by giving them the advantage of a little heat for a few days, they should be placed in cold pits or frames to harden. Seeds of hardy and half-hardy plants should now be sown, and placed either in gentle heat or cold frames. When rufficiently large

to handle they should be pricked out in cold frames, where they should receive plenty of air and light, so as to keep them hardy for transplanting when the weather permits, T. S. C.

The Handy Anuit Garden.

AT length the Fig claims our attention, the gradual rise in the temperature baviog set the sap flowing. Where the trees are covered up for the winter no time should be lost in getting the covering removed.
Perhaps no fruit tree is more impatient of the knile, and it should never be too rigidly trained to the wall, A good strong tie here and there, and spurs from 6 inches to a foot long, will be found the most prolific mode of treatment. Where extra strong growth is manifested, a good root pruning immediately after the crop is gathered will induce greater fruitfulness. Fig delights in a good space to ramble in, therefore a lofty wall with a broad coping and a south aspect suits it exactly; sometimes there is the wall of a stable or other building adjoining the garden, which can be used for this purpose. The Castle Kennedy is our earliest Fig here, but it wants a large breadth of wall; we also grow Marseilles, Brown Turkey, and Brunswick; Osborn's Prolific is also a good kind; but the best Fig in cultivation is Negro Largo, which, however, does best under glass, when it becomes a perfect sweetmeat: In warm localities, such as Worthing in this county, the Fig does well as a bush and standard, but a dry situation and subsoil are indispensable; indeed these two conditions are much more necessary than a great depth of soil.

NUTS.—At pruning time we recommended that the branches of these should be left thicker than usual to insure an abundance of male catkins, and, a "good set" being now secured, many of these extra branches can be removed. Grafting may still be successfully carried on, choosing morning and afternoon in preference to noonday, and let the clay or grafting wax be promptly put on as soon as the scion is fastened to the stock. In some cases this very dry weather will cause the clay to crack and let the air in to the union: damp moss tied on will prevent this.

The continued mild weather has brought bush fruits unusually forward, and one cannot help being somewhat concerned about the coming crop. Oftentimes on very short notice we find that the caterpillar has made himself more free than welcome with our Gooseberry bushes. To be forewarned is to be forearmed, therefore order through your nearest chemist such a quantity as will be required of Hellebore powder. A dusting of this soon rids us of such troublesome neighbours. It must not be used upon bushes where the fruit is being gathered. 7. Rust, Exidge Castle, Sussex.

THE WEATHER OF 1883.—Few things are more readily forgotten than the state of the weather of the preceding year. As gardeners we are obliged to look forward, but few of us care to look backward. Neverthelesses, inasmuch as present effects are the result of previous causes, often remote, we can but be thankful to Mr. Mawley for giving us year after year in so convenient a form as he does in his pampblet entitled The Weather of 1883—the record of the year's weather. For each month the records of the barometer and thermometer are given with corresponding indications for the humidity, wind, rain, and susshine, and the excess or deficiency of temperature from the average. The tables are followed by a few general remarks on the more remarkable phenomena of climate, the prevalence of disease, &c. July was evidently an unusually cold month, but Mr. Mawley's statement that the 16th was 1° colder than last New Year's Day apparently refers to the mean temperature of the day, for on reference to the tables we find the minimum on July 16 to have been 43°-1, while on January 1 the minimum was 51°.6. Now that sunshine recorders are in use, is it too much to hope that we may speedily have some device wherley the duration of frost may be ascertained? In the early days of photography we remember that self-recording as well as self-registering thermometers were in use, but the apparatus was too costly and too complicated for use by private individuals. Since that time so great improvements have taken place in the manufacture of sensitive paper that by the aid of a clockwork apparatus the desired record might surely be obtained at less cost of labour and money.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESUAY, Mar 25

Royal Infriedutral Society: Fruit and Floral Committees, at 11 A.M.; Scientific Committees, at 12 A.M.; Spring Show at Scientific Committees, at 12 A.M.; Spring Show at Scientific Committees, at 12 A.M.; Spring Show at 12 A.M.; Spring Show at Committees, at 12 A.M.; Spring Show at Committees, at 12 A.M.; Spring Show at 12

AT length we are enabled to congratulate Conifer lovers, subscribers, authors, and publisher, upon the completion of the Pinetum Britannicum. The work is one of great magnitude and beauty, and one that has involved labour and pecuniary outlay, it is to be feared, beyond hope of recompense. In the preface Mr. RAVENSCROFT, the enterprising and chivalrous publisher and part author, tells the story of the book-how it grew out of a small catalogue raisonné prepared for Messrs. PETER LAWSON & Co. As a considerable amount of materials had accumulated, the larger work, with its large-sized coloured plates, was undertaken. Messrs. LAWSON lent substantial aid by taking a hundred copies; the Emperor NAPO-LEON distributed thirty copies among the Schools of Agriculture and Forestry in France, and royal patronage was not wanting in our own country. Such aids, however, were not sufficient to secure the uninterrupted progress of the work. The firm of PETER LAWSON & Co. met with misfortune, the French Empire underwent still greater disaster, and as a consequence the publication of the work was necessarily for a time suspended. In order, however, to keep faith with the remaining subscribers, Mr. RAYENSCROFT lately resumed the publication, and has now, as we have seen, brought it to a close; thus fulfilling all his obligations to his subscribers, if not fulfilling the whole of the ambitious programme with which he set out. ROBERT BROWN, LINDLEY, and specially ANDREW MURRAY-all of whom have passed away-contributed the botanical descriptions, the latter ones having been drawn up by another hand; numerous Conifer lovers and cultivators have also lent their aid. What we have now, then, is three handsome folio volumes with coloured plates, illustrative woodcuts, photographs, and full descriptions, botanical and arboricultural, of a selection of the best and most remarkable hardy Conifers. In a work which has been so long in hand, and which has been elaborated by so many different writers, there must necessarily be some want of proportion, and some discrepancy between the older and later parts, but none, we believe, that at all seriously impair the value of the book as one of reference. It affords, however, one more illustration of the fact, that the value of these colossal and expensive books, which can necessarily only be in the hands of the few, is not proportionate to the cost and labour bestowed on their production. It is hence satisfactory to learn that Mr. RAVENSCROFT contemplates the production of a smaller treatise supplementary to the present one, and intended to contain descriptive accounts of those hardy species not included in the larger book. As we shall probably have frequent occasion to refer to this "monumental" work, as the French would call it, we need now only add that the parts now issued in completion include descriptions and plates of Cupressus macrocarpa, Pinus ayacahuite, and Cedrus Libani, together with title-pages for the three volumes, prefaces, indexes, &c.

— ROYAL HORTICULTURAL SOCIETY. — We understand that the next spring show, to be held on the 25th inst., promises to be a specially good one. Hyacinths will be strongly represented, and they are

exceptionally good this season. Special prizes are also offered for Amaryllis, and it is expected that there will also be a fine display of Primroses and Cinerarias. On Tuesday, April 1, there will be a special exhibition of Daffodils, and from the favourable season a most interesting exhibition is expected. A paper will be read by Mr. F. W. BURBIGER at a meeting to be held at 1 o'clock, Prof. MICHABL FOSTER, F.R.S., in the chair, when the principal English and Continental cultivators of this charming flower will be present.

- International Health Exhibition is shown by the fact that application has been made, by British exhibitors is alone, for space five times as great as that actually at the disposal of the Executive Council. The first goods were admitted on the 15th.
- —— SINGLE ANEMONES.—Messrs. JAMES CARTER & Co. have sed us a fine bunch of flowers of single varieties of Anemone hortensis, which they designate Empress Poppy Anemones. The colours range from white to regal purple, and the blooms are fine in size and perfect in form.
- MR. WILLIAM HODGSON,—We understand that Mr. WILLIAM HODGSON, schoolmaster, of Watermitlock, near Fenrith, Cumberland, has been elected an Associate of the Linnean Society. Mr. HODGSON is author of "A Flora of Ullswater," and other botanical papers, in the Transactions of the Cumberland Association, and otherwise is well known for his extensive local knowledge of the plants of the Border Counties.
- PRIZES FOR PEAS.—Messrs. Webb & Sons, Wordsley, Stourbridge, offer valuable prizes for the best dish of their new Pea, the "Wordsley Wonder," to be competed for at the Royal Horticultural Society's show, South Kensington, on July 22 next.
- SHROPSHIRE HORTICULTURAL IMPROVEMENT SOCIETY.-The members of this Society held their first meeting on the 12th inst., under the presidency of Mr. WM. PHILLIPS, who delivered a very interesting inaugural address to a fair attendance of members. In the course of his remarks Mr. PHILLIPS referred to the great assistance such societies were to the gardening profession, and to the valuable services rendered to horticulture by eminent amateurs. He also made some brief remarks on some of the various diseases to which plants are subject, such as the Potato and Hollyhock disease. address was followed by a short but animated discussion on the Potato disease, its probable cause, and the best means of prevention. The meeting closed with a vote of thanks to the President for interesting address, and the next meeting was arranged for Wednesday, April 2, at half-past 7, when Mr. W. H. HARRISON, B.A., will read an original paper (to be followed by a discussion) on the "Cultivation of the Strawberry.
- POTATOS .- The coming season bids fair to be one of the most productive known for many years. Of course we cannot assert such will be the case, but merely state that all things are tending to that end. Seldom have we had a spring that so strongly invited to early planting, seldom a spring in which so much planting has been done so early. truth, the Potato trade in home-raised produce seems to have taken a new lease of life and vigour, for everybody is planting Potatos, and planting more and more from year to year. It may be that with the increase of population the Potato is becoming a more important article of food; it may be that with less hard drinking and more temperance amongst the masses there is growing up a greater demand for garden products, and specially for Potatos. Certain it is, that if the home supply is enormous it does not seem to be excessive. Again, the greater the quantity of Potatos grown the greater relatively the stocks of seed-tubers on hand, and these, to be made profitable, must be planted, and so growers are increasing rather than diminishing their breadths. Farmers find Potatos to be not only a good change from corn or pulse, but also a good cleaning crop; indeed, once get a big breadth of Magnums or Champions established, and weeds have no further chance. Finally, the lifting leaves the soil in a loose clean condition. Thus large seed stocks, an early and singularly favourable spring, and the large demands of the

population, are all tending to briog us this year, all other things being well, a monster crop of Potatos.

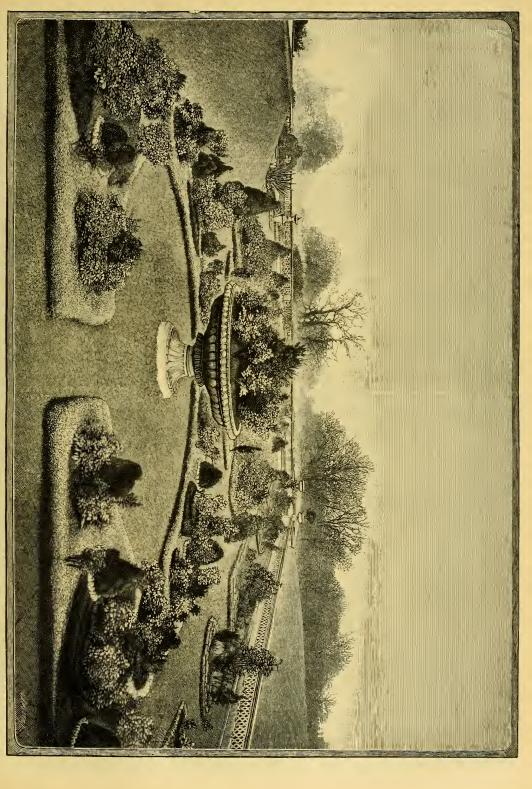
— AMARYLLIS.—For the benefit of future historians or monographers of the genus Amaryllis we publish the following list of hybrid varieties, exhibited by Messrs. James Veitch & Sons, and certificated by the Floral Committee of the Royal Horticultural Society, on the dates given:—

We should add, that with the exception of Mrs. Baker and Storr's Beauty the above were all raised by Messrs. VEITCH.

· CYPERUS PROPAGATION, -The two varieties, C. alternifolius and C, a. variegatus, so useful in the hothouse in winter and greenhouse during the summer months, and among the prettiest of room plants, can be increased either by seed, that will be found to ripen freely on plants in a warm house, or by cuttings. The seed may be sown in early spring on sandy soil in pots standing io saucers, so that they are kept constantly moist. The young plants that soon appear must be potted off as soon as they reach I inch in height, and grown on in warmth till large enough. The variegated variety is better propagated by the second method, as it is merely a sport from the first, and is very liable to revert to it; leaves taken off with about 4 inches of stalk, and floated in an inverted bell-glass or flower-pot full of water in the propagating house, throw out young plants in quantity, which then emit roots into the water. When these roots are I inch long the plantlets must be severed from the parent leaf and carefully potted in finely sifted light mould, and afterwards treated as places from seed. The old leaves throw out young plants when fastened down to a panful of sand, but hardly as freely as in water. Papyrus antiquorum, the well-known waterplant, is another graceful subject, and will grow when shifted repeatedly into rich soil in spring and summer to the height of 7 or 8 feet. This may be increased in the same way as the Cyperus, which it much resembles, or by division of the root-a method that can be adopted with all, although for the production of plants for small arrangements in plaot-houses or dwellings the other named methods are to be preferred. The mealy-bug affects the Papyrus, and, being very difficult to eradicate when once allowed to establish itself, it should be assiduously sought for and destroyed. All these plants will flourish even when standing in water of moderate depth, and are much benefited by being grown in loamy soil with a good proportion of sand and humus, the pots being stood in saucers holding water, although neither sancers nor water in which to stand are essentials to growth,

- THE NEW IVV-LEAVED PELARGONIUMS,-We do not find that these useful and pretty plants are so much grown as their many good points qualify them to be. They periodically appear amongst nurserymen's exhibits at the larger horticultural shows, but it is seldom we find handsome plants in private gardens. This neglect into which they have fallen is perhaps owing to the increased impatience of gardeners, which impels them now to cast out any plant which will not respond to a forcing treatment. grown on small trellises, in hanging baskets or pans, as columns or the like, or even used to run up the rafters or walls of small conservatories, the plants are in their right position. When planted in narrow borders or in tubs, &c., the plants require a dry treatment during the autumn and winter, as it is found that moisture is particularly injurious at this point in





such positions. They can be recommended for small beds and for clothing wire basketwork in out-of-door designs. Some of the best are those with double flowers, like Abel Carrière, a large-trussed rosy-carmine; La Rosiere, also a rose colour; Congo, rosy-lilac; Come II. de Choiseul, salmon, a fine double flower; Jeanne d'Arc, the prettiest of white kinds; Vice-President Joly, a pleasing pink flower; and M. Pasteur, a crimson-magenta.

— THE SEEDLING POTATO EXHIBITION, in connection with the Northamptonshire Horticultural Society, will be held in the Corn Exchange, Northampton, on September 24 and 25.

· CRASSULA JASMINEA .- This variety of Crassula (Kalosanthes) is a pretty miniature example of a favourite class of flowering succulents of easy growth, and should form a good useful summer blooming plant for the dwelling-house. The Crassulas and Rocheas are among the most brilliant of greenhouse plants, and should be grown in larger numbers. The above named kind possesses white Bouvardia-like flowers, arranged as a broad flat corymb, having an odour of honey. Cuttings strike in a dryish atmosphere in summer, and may be left in the cutting pots unless struck in June ; in that case they may be potted in sandy loam, a little peat and leaf-mould, and grown on in a frame till September. They require wintering in a cool-house, with but little water given them till March, in which month the plants may be brought into a house with a night temperature of 50°, and receive a soaking of water, so as to induce an early growth, shifting the plants, if they are oot of flowering size; but if they are intended for flowering the same season, surfacing with soil similar to that in which it is growing will be sufficient. Later on the plants may be grown in a cold pit or frame, as near to the glass as possible. When the flower plants have finished blooming the faded trusses and half the length of the shoots on which they grew must be pruned off, the plants remaining in a sunoy place out-of-doors till they show signs of breaking, when these and the young stock may receive their summer repotting; the old stock may remain out-of-doors still longer, if the season is warm, otherwise the whole were better under glass, as the plants, especially newly potted ones, are likely to be injured by much rain. Young plants up to the beginning of July should occasionally have their shoots stopped to induce a more bushy habit than is quite natural to the species, and should be watered with much care, especially till the pots are filled with roots.

— PRUNUS MYROBALANA (THE CHERRY PLUM).— This is the second earliest of the Amygdaleæ in the Cambridge Botanic Garden; and a fine tree it is, with its myriads of small white blossoms. It precedes the Almood, however, by a few days only, and the association of pink and white is now most beautiful. The fruits, rarely produced in England, are used in India to dye black.

— LACHENALIA LUTEOLA.—The most effective way of growing this plant is in baskets, as it gains much in appearance by the free pose of the leaves, which they acquire by spreading easily in all directions; the flowers, too, seem brighter, as no doubt they are, by the full light they have near the glass. For greenhouse baskets there are few plants finer, and one of the best in the Cambridge Botanic Garden had lately from sixty to seventy spikes, the basket being about 1 foot across.

— HYOSCYAMUS ORIENTALIS, — Amongst the most showy of all the hardy perennial herbaceous plants now in flower, excluding bulbous and tuberous ones, the Oriental Henbane certainly takes a foremost place. In the herbaceous department at Kew a good tuft of it is now conspicuous for its grey green stalked leaves and its large cymes of delicate lilac-purple flowers, surmounting leafy stems about a foot in height. This species, a native of the Caucasus, is thoroughly worthy of a place in the herbaceous border, the colour of its flowers and the peculiar greygreen of the hairy leaves forming a very pleasing combination.

—— STYLOPHORUM OHIOENSE. — Under this name—which, according to WATSON'S Index, is a mere synonym of S. diphyllum, the common Celandine Poppy—there is a plant at Kew which, for garden purposes at any rate, appears to be distinct

enough to have a separate name. It has large handsome golden-yellow flowers, and neat, glaucous, Celandine-like leaves. The Kew plant was received under the name quoted at the commencement of this note from Messrs, FRCEEL.

— VIOLA CLABELLA.—Imagine a plant like a medium-sized British Wood Violet (V. sylvatica), but with glossy leaves and bright yellow flowers, and a pretty accurate idea will be formed of what this lovely little Californian species is like. Plants now in flower at Kew in a cold frame suggest the suitability of V. glabella for the decoration of the cool conservatory during early spring. In any case, the species is a very pretty one, and it is worth a place even in the most select collection of herbaceous plants.

— OMPHALODES YERNA VAR. ALBA. — This charming little perennial, or, rather, the type with its blue Forget-me-not-like flowers, is a favoured denizen of many a garden border and shrubbery. It is a plant which does well in shade, and in many places is quite able to hold its own by the woodland walk and in the wild garden. A white-flowered form, otherwise not differing from the type, is now blooming at Kew; when this becomes more widely known it will probably he as largely grown as O. verna itself.

—— PRIMULA DENTICULATA.—In company with another Himalayan Primrose, the yellow-flowered P. feribunda, which has been continuously in bloom for about a year, and a good pot of the pretty Japanese species, P. poculiformis, which for the last two years has never been without quite a crop of its delicate flowers, there is a very handsome form of P. denticulata now blooming in the cool compartment of the new range at Kew. The globular compact heads of rather small purplish flowers form an agreeable and striking contrast to the larger-flowered umbels of paler-coloured blossoms of P. poculiformis, and the bright golden-yellow ones of P. floribunda.

— THE TAUNTON AND DISTRICT GARDENERS' ASSOCIATION will hold a Chrysanthemum and fruit show in Taunton on November 20 next.

- BAUHINIA PURPUREA .- In the Palm-house at Kew a fine specimen of this handsome Indian species is now in flower, and a figure of it will appear by-and-bye in the Botanical Magazine. Although a number of Bauhinias are in cultivation in botanic gardens and elsewhere in this country, the species, at any rate the majority of them, by no means flower freely. What glorious objects some of them are when treated properly will at once be seen on referring to the figure of the rosy-lilac-flowered climber, B, corymbosa, which was figured in these columns (from the richly stored gardens of Sir GEORGE MACLEAY, at Pendell Court), and also in the Botanical Magazine, tab. 6621. The South African B. natalensis, a dwarf shruhby species with white flowers, blooms annually at Kew, but these two are exceptions in a large and certainly showygenus. B. purpurea has much larger flowers than either of the two species just mentioned, and if means could be found to induce it to flower freely and regularly it would doubtless become a favourite in large structures. In colour the flowers are a deep rosy-red, in size and form having a superficial resemblance to those of the common Hibiscus rosa sinensis. A very nearly allied species-if it is not quite identical with B. purpurea-is represented in picture No. 235 in the "North" Gallery at Kew.

- GAGEA LUTEA .- This species, a rare and somewhat local one, indigenous to Great Britain but absent from Ireland, is certainly worth growing in any collection of hardy bulbous plants. In a wild state it often flowers but spariogly, and even then the flowers are not nearly so fine as when the plant is removed to a garden and the struggle for existence considerably lessened by the absence of the numerous wildings which share the soil of the copses or pastures where it occurs naturally. The English name, the Yellow Star of Bethlehem. is a pretty and suggestive one, for the yellow or greenish-yellow flowers are much like, both in form and arrangement, those of the common Star of Bethlehem-the whiteflowered Ornithogalum umbellatum. There are about a score species in the genus Gagea, and our indigenous plant is probably one of those which can boast the most extended geographical distribution, being found along through Europe, North Asia, and in the Himalayas. It is now flowering in the Kew collection.

—— PRIMULA ROSEA. — The bright rosy-red flowers of this beautiful Himalayan Primrose are now being freely produced in the open air on the rockery and elsewhere at Kew. Scarcely any other hardy herbaceous plant—perhaps none at so early a period—cao compare with this in richness and delicacy of colour. Under favourable conditions it seeds freely, and it is better to keep up a succession of seedling plants than to depend entirely upon the old ones, as these latter are apt to go off after a couple of seasons or so.

—— CARDAMINE ROTUNDIFOLIA, or the Mountain Watercress of Pennsylvania and other parts of the Northern Uotied States, is well worth a place in the herbaceous border for its dwarf habit and the pure white flowers which are produced in early spring. It has a weak or decumbent branched stem and stalked leaves—with just the taste of the true Watercress—rounded and angled, somewhat heart-shaped, not unlike those of young plants of our common hedge Garlic, Sisymbrium Alliaria. The species is easily grown, but thrives best in a cool damp place. Now in flower in the Kew herbaceous department.

—— Orobus vernus.—A number of varieties of this early-flowering and good old-fashioned perential are now in flower in the herbaceous department at Kew. The type itself, with its purple and red flowers, is one of the best of early spring-flowering plants; var. albus has white flowers, and cyaneus metallic-blue ones. A form with double flowers is also cultivated at Kew. The Hungarian O. flaccidus is a rather distinct variety, with very narrow leaves and red flowers.

— KEERSAL, OR CATECHUIC ACID.—Under the above name a peculiar substance is described by Dr. DYMOCK, which, he says, he has not seen any notice of in books on Indian Materia Medica. The substance is obtained from cavities in the wood of Acacia catechu, and occurs in small irregular pieces similar to pale catechu mixed with chips of reddish wood. It fetches a high price in consequence of its heing only occasionally met with, and it is collected by men who split firewood. Keersal is completely soluble in boiling water and rectified spirit. It is used in native medicine in chest affections, and to promote expectoration.

-- NEW ECONOMIC PLANTS IN JAMAICA.Mr. D. MORRIS, the Director of Public Gardens and Plantations in Jamaica, has drawn up a report on the collections of seeds and plants made by him during his absence from Jamaica last year. Mr. MORRIS points out that in making these collections his aim was chiefly in favour of economic and industrial plants, so that they might in course of time, when properly established, contribute to the wealth and resources of the country. Amongst the plants so collected by Mr. MORRIS, and now introduced for the most part for the first time to Jamaica, may be mentioned Cinchona Ledgeriana, C. calisaya, and C. Calisaya var. Josephiana; Scammony (Convolvulus Scammonia), well known for the resin which exudes from its roots, and which is a valuable medicine; Aloe socotrina, one of the sources of Aloes; Mangosteen (Garcinia Mangostana), which is, however, already established in the island; Agave Ixtli, the source of Sisal Hemp; Quillaia bark (Quillaia saponaria), about which a good deal of interest has recently been excited, in consequence of the saponaceous principle being used in the arts and manufactures. Piper methysticum, the Kava Pepper plant, which besides its use by the Fiji islanders for making their favourite beverage, kava, has of late attracted some attention amongst the medical profession in America and Australia. carpus elongatus, or Cape Yew, described as a "fast growing tree, suitable for the higher lands, and yielding excellent timber known as the Cape or Yellow Wood." Melhania erythroxylon, or Red Wood of St. Helena, a handsome tree of 20 feet high, the flowers ol which are large and pure white when they first appear, but change after a day to pink and then to a brownish red, the tree bearing flowers of all three colours at the same time. The wood is extremely hard and of a rich brown colour. "As one of the fast disappearing indigenous plants of St. Helena, Mr. MORRIS says, "this is a very interesting tree, and its naturalisation in Jamaica would be an event of considerable botanic and economic interest." Aberia caffra or Kei Apple, a plant of the Cape of Good Hope has a fruit about the size of a small Apple, of a yellow colour, used for making preserves; the plant is moreover valuable for making feaces, in consequence of its being covered with hard, stiff spines. The above are only a few of the plants enumerated by Mr. Morkis, and amongst those of more generally acknowledged economic value we may mention the Olive (Olea europea), and Cork Oak (Quercus subert); of this latter a few Acorns were obtained, which are stated to be likely to grow. The tree on the higher hill slopes should become common in Jamaica.

— THE COVENT GARDEN LIFEBOAT.—On Taesday night the annual concert in aid of the Covent Garden Lifeboat Fund was given at St. James's Hall, and we are glad to record, first, that there was a good attendance, and, secondly, that the entertainment was of a thoroughly enjoyable character. The Lifeboat sustained by the Fund is stationed at Caister, and has already been the means of saving 195 lives. Since the Fund, of which Mr. James Webber is the Honorary Secretary, has been established, it has paid over to the National Lifeboat Institution nearly \$\frac{7}{2000}\$, independently of the proceeds of Tuesday night's entertainment. As usual, at this concert, the front of the orrchestral platform was decorated with flowers, and, in accordance with a pleasant custom, the committee presented each of the lady soloists with a beautiful bouquet.

- AMPELOPSIS HEDERACEA AND VEITCHII.-How many gardeners increase their stock of this common and useful creeper? Very few, if we may form an opinion from the enormous quantities disposed of by nurserymen. We do not put this plant, nor its ally, Ampelopsis Veitchii, to half as many uses as we might, and that because we do not propagate it in quantity; for beyond covering a piece of wall, or an arbour-although in our climate the arbour is almost out of place, as we want a waterproof covering overhead, and close sides to keep the winds away-we do not find them much employed. The larger growing species make good summer bands or broad margins to walks, and look well all the season, and are wonderfully pretty in autumn. As screens hanging down from a height, in front of carriage portals, or to screen a window or doorway, without being allowed to become attached to the object, they look very well; for such use they need spurring in closely, and almost all annual growth to be cut away at the wioter dressing. A. Veitchii trained round a dwarf pillar of wood, or wire, makes a pretty solitary plant in a hed; but it looks hetter when repeated regularly in a pattern or design of flower-beds. The propagation of A. hederacea is by cuttings, taken off in October. These should be of thoroughly ripe wood of the same year's growth, or of the former year, and should be cut to 15 inches in length. It does not matter if they are cut at a joint or not, as they root from any portion that is below These should be inserted in good but the ground. unmanured ground that has been double-dug, and should enjoy partial shade in a warm position. cuttings will form roots the next year, and will be ready to pot or to plant at wider distances in the nursery in October or later; but they are best in pots, as when left in the ground their roots wander long distances, and can never be got out entire. similar cuttings can be got from A. Veitchii, they can be treated in the foregoing method; but when not, the growing tips can be struck easily in warmth during May and June, and potted off when rooted, or it may be obtained in the open border by layers.

—— CAMPHOR IN INDIA.—In an article on camphor in the Vegetable Materia Medica of Western India, Dr. DYMOCK records a peculiar fact in connection with the resublimation of the article in India. The object of this resublimation, he says, is to get as much interstitial water as possible into the camphor cake. After describing the process, he says, "Camphor sublimed in this way is not stored, but distributed at once to the shopkeepers before it has time to lose weight by drying. It is sold at the same price as the crude article, the refiners' profit being derived from the introduction of the water."

— THE DUTCH HYACINTHS.—A correspondent at Haarlem informs us that the unusually fine weather has brought the Hyacinths into bloom much earlier than usual. They are usually at their best about April 10 or 12, but an inspection from the main roads on the 19th inst. showed them to be almost at

perfection, while the air was laden with itheir perfume, and the various shades of colour were magnificent to behold. The Crocuses are nearly over, and the early single Tulips are coming on to succeed the Hyacinths. Intending visitors should cross over before the end of March to prevent disappointment.

- Ensilage : Spurry (Spergula arvensis). -On Monday night the Prince of WALES presided over a meeting of the Institute of Agriculture at the South Kensington Museum, at which Mr. WOODS, of Merton, delivered a valuable lecture, on the question of "Ensilage: its Influence on British Agriculture. In the course of his remarks, Mr. Woods said that "On light, sandy soils, Spurry (Spergula arvensis) may be profitably cultivated, and an experimental crop grown at Merton, under Lord WALSINGHAM'S direction, yielded a most excellent food for sheep and On 20 acres of blowing sand, so poor in quality that it had seldom produced either corn or roots, and was for the last two or three years abandoned to a state of Nature, Spurry gave 51 tons per acre; the ensilage came out in excellent order, and sheep and cattle fed upon it, mixed with straw-chaff, preferred it to grass ensilage. The trial was so satisfactory that arrangements have been made to seed upwards of 120 acres for the present year." Messrs. JAMES CARTER & Co. ioform us that they have supplied to Mr. WOODS, for Lord WALSINGHAM, seeds of Spergula arvensis to sow 50 acres (at the rate of 14 lb. per acre), and that they will be pleased to answer any enquiries as to this seed.

— THE IMPORTS OF WOOD INTO BREMEN.—
Amongst the principal woods imported into Bremen Cedar, Mahogany, and Walnut hold a prominent place. The former is the produce of Cedrela odorata, and is imported almost exclusively for manufacturing cigar boxes. The best quality and the largest quantity comes from Cuba, and during the year 1882 as many as 90% cubic metres were imported, and 8522 cubic metres sold—a larger quantity than has been sold for the last fourteen years. Of Mahogany the imports amounted in the same year to 1318 blocks from Cuba. Broad Cuban wood was in great demand, and was readily sought for by cabinet makers. Walnut was also in great demand during the year, and blocks of large size were largely bought, while the narrow widths were comparatively neglected.

- GARDENIA FLORIDA. - Admirers of this warm-house shrub-and who does not admire its bright foliage and deliciously scented ivory-white blossoms?may be interested in learning the early history of the plant, and in finding to what an extent it was appreciated about a century and a quarter ago. The following memoranda were written by PETER COLLINson, and published by Mr. DILLWYN in his Hortus Collinsonianus:—"A most fragrant beautiful ever-green shrub, given me this year (1761) by my friend, GORDON; first found and brought to England by Captain Hutchinson, anno 1755; taken up in the country of Soldaina, near the Cape of Good Hope. As the Captain was surveying the country, not far from the shore, he was surprised with a rich odoriferous smell ; turned about and saw this fine shrub in flower : next day brought his men and took it up, and put it in a tub; brought it home and gave it to his curious friend, Mr. WARNER, of Woodford, Essex." July, 1758, I was at Mr. WARNER'S, and saw the Cape Jasmine in great perfection. Mr. GORDON, gardener at Mile End, from cutting and then laving, has a great many; at first sold for five guineas a plant, and now, anno 1761, for two guineas and two and a half," "This year, in May, 1764, a Jasmine raised from seed by Mrs. LEE, at Tottridge, is now in flower, and proves to be the Cape Jasmine with a single flower."

—— BIOTA ORIENTALIS PYGMÆA. — Under this name there are in the Isleworth Nursery of Messrs, C. Ler & Son plants not more than 8 inches in height and as much through, perfect hemispherical masses of green, bronze-tinted twigs. We were somewhat surprised to learn that these plants were about a score years old; the original ones, imported from the Continental oursery in which the form was first noticed, do not exceed the dimensions above stated, In a miniature shrubbery border or on rockwork, where larger things would be out of place, these tiny forms are certain to command the admiration of lovers of the curious.

- CLEMATIS ÆTHUSIFOLIA VAR. LATISECTA -The genus Clematis may, under favourable con-ditions and in favourable seasons, supply flowers nearly every month in the year. The South European C. cirrosa, and the still more showy C. balearica, are now brightening up many a wall in some southern gardens. It is more than a month ago since we saw the first speckled Hellebore-like sepals of C. balearica. C. æthusifolia and its varieties, on the other hand, are late autumn-flowering plants, and most graceful ones they are. The white blossoms, from half to three-quarters of an inch in length, and between bellshaped and cylindric in form, are produced in extraordinary profusion, and are pendulous from stiff erect stalks. Few more graceful and beautiful objects statist. Few more graceful and beautiful objects exist in October in any garden than the long wreaths of leafly stems studded thickly with flowers afforded by this species. It is perfectly hardy in this country. In a wild state it ranges from Pekin to the Amur River. The form whose name appears at the head of this note was figured in the Botanical Magazine, tab.

CARTERS' "PRACTICAL GARDENER." — Messrs. JAMES CARTER & Co. have just issued the eleventh edition of their Practical Gardener, which, having reached a sale of over 80,000, requires no word of commendation from us. The same firm has also issued a very useful essay on the formation and after-management of lawns, lawn-tennis and cricket grounds, which they issue free to all applicants.

- THE WEATHER .- General remarks on the temperature, rainfall, and duration of bright sunshine, for agricultural and sanitary purposes, during the ending March 17, issued by the Meteorological Office, London: — The weather has been unsettled and rather rainy in Ireland and on the extreme western coasts of Great Britain, but dry and exceedingly fine in most parts of Eogland and Scotland. The temperature was about equal to the mean during the first two days of the period, but subsequently rose rapidly and became unusually high for the season in almost all parts of the kingdom, the excess for the whole week being 8° in the "Midland Counties," 7° in "England, N.E.," and 5° or 6° in nearly all other districts. The maxima which were recorded on the 16th, were as high as 70° in " England, E.," and the 'Midland Counties," 68' in 'Scotland, E.," "England, N.E.," and "England, S.," and "Fugland, S.," and "Scotland, N.Y." in 'England, N.W.," and "Scotland, W. f" in "Scotland, N.Y." however, the highest reading was only 55°. The minima were registered on the 11th, and varied between 28° and 30° generally, while in the "Channel Islands" 37° was the lowest temperature. The rainfall has been more than the mean in Ireland, but less in all parts of Great Britain, while in the Channel Islands it has equalled its normal value. Bright sunshine shows a further increase in duration in most places, the percentages ranging from 58 in the Channel Islands to 38 in "England, E.," 37 in "England, S.," and 14 in "Scotland, W." Depressions observed .- During the whole of this period the barometer has been comparatively high and steady in all the east and south-east parts of our area, while depressions have been moving in a northerly direction outside our western coasts. The only depression noticed over our islands has been a small subsidiary disturbance which travelled north-northeastwards over our south-eastern counties and the North Sea as the week commenced. Southerly winds have prevailed on all our coasts, and, though light or moderate in the south-east and east, have blown strongly in the west and north-west, and at times risen to a moderate or fresh gale.

GARDENING APPOINTMENTS. — Mr. F. GOUGH, late Gardener to H. WILSON, Esq., Burntwood, Cheadle, Cheshire, as Gardener to R. II. BANKES, Esq., Kingston Lacy, Wimborne, Dorset.—Mr., JAMES EWING, for the last few years Kitchen Garden Foreman at the Gardens, Taymouth Castles, as Gardener to Andrew Coates, Esq., Pitcullen House, near Perth.—Mr. W. Crunn, formerly at Beaurepaire Park, Basingstoke, as Gardener to J. P. CURRIE, Esq., Sandown House, Esher, Surrey.—Mr. McDonald, lately in Ross-shire, as Gardener to R. Johnstone, Esq., Boulogne-sur-Mer, France.—Mr. JAMES TAYLOR, lately Gardener at Storrington Rectory, Sussex, as Gardener to J. PATRICK, Esq., Hunstanton.

THE WEST INDIAN LIME.

THE flowering and fruiting by the Earl of Ducie, F.R.S., of the Lime of the West Indies (Citrus medica var. acida), affords an opportunity of making better known a fruit which has been much misunderstood. I should premise that the word Lime is promiscuously applied to fruits very different to this, especially in British India, where the Sweet Limes of various forms are universally spoken of under that name, and that all these, together with the West Indian Lime, are varieties of the Citrus medica of Linnæus, which includes the Lemon, Citron, sweet and acid Limes of the East Indies, and the small globose-fruited plant here figured (Bot. Mag., t. 6745). C. medica is so closely allied to the C. aurantium, Linn., which includes the sweet Orange, the bitter or Seville Orange, the Bergamotte, &c., as to have been classed with it, as forms of one species, by several excellent authors, together with other fruits which do not concern us here.

The genus Citrus is essentially an Eastern one, and the forefathers of Oranges, Lemons, Citrons, and Limes, are certainly Tropical Asiatic, and may be found (though whether always in their pristine contition as opposed to escapes from cultivation is not easy to determine) in the hot valleys of the Himalaya, of the mountainous districts of Eastern Bengal and of the Decean.

From Tropical Asia they have, in their numerous cultivated forms, been transported into Africa, Australia, and the New World, where the Orange extends into the temperate zone, and the Lemons also, but with less power of enduring cold, whilst the small acid Lime seems confined to tropical or subtropical zones; hence, I do not find any plant exactly answering to the latter in the magunificent work of Risso and Poiteau, illustrating the South European Oranges and Lemons, whilst in the floras of the East and West Indies it is always included.

The first good account of it is by Rumph (Hortus Amboinensis, vol. ii., p. 107, t. 29), published in 1750. He describes it under the Latin name of Limonellus, alias Limontenius, or thin-skinned Lemon, answering to the Malayan name of Limon Nipis (in Dutch, Liemis Boom), as a spinous bush with small leaves much brighter than those of the other Lemons, small flowers with the odour of those of the Lime of Martinique, five petals, spherical, smooth, fruit the size of an Apricot, skin citroncoloured, extremely thin, pulp greenish white, gratefully acid, having a delightful odour and taste. He adds that it is found in all the Oriental islands, but never in the woods, always near bouses, implying that it is not indigenous. The only author who has definitely taken up Rumph's plant is Hasskarl, who, in his first Catalogus Horti Bogoriensis, published in 1844, has C. limonellus with two vars .- a pointed fruited and a rounded fruited; and in the edition of the same work (1866) he publishes C. limonellus var. globosa from Amboyna. B. Hamilton had previously alluded to it in his Commentary on Rumph's Hortus Amboinensis (Wern. Trans., vol. vi.); and the name C. limonellus, Ham., accompanies specimens of a plant collected by him in India, and distributed by Wallich (Cat., n. 6386), which is probably the same species. C. limonellus is also described by Miquel, who says that it is cultivated everywhere in the Dutch East Indies. Curiously enough, whilst Rumph describes the petals as five, he figures invariably four, and this and its other characters indicate his plant being the same as the Rungpore Lime of Bengal, the sixth variety of Roxburgh's C. acida, which includes the sweet and sour Limes (not the Lemon), characterised as a small hush, with a small pinkish flower, usually four petals, and a perfectly spherical fruit, having a thin skin of a lively yellow colour and pale acid juice.

Dr. King has had the kindness to send me copies of Roxburgh's drawings of the Limes cultivated by him in the Calcutta Botanical Garden, and they confirm this identification, both as to flower and fruit. This plant is very well figured by Wight as C limetta, Risso (Lones, t. 958), who says it is certainly wild in the Nilgherry Hills, forming a low, erect, thorny shrub, with a profusion of fragrant white four-merous flowers. He adds, however, that the juice is "watery acid," sweetish, "or occasionally slightly bitter"—a variation not likely to occur in a native plant.

When preparing the Forest Flora of Central and North-Western India, Dr. Brandis asked me to help

settle the synonymy of the genus Citrus, so that it should be in harmony with the Flora of British India, and after a long study we concluded that the various forms grouped themselves under three generally recognised species, of which two were indigenous to India, and one had been introduced. The native are C medica (the Citron, Lemon, and Limes), and C. aurantium (the Oranges, and the Bergamotte); the third, C. decumana, Wild., is assumed to have been derived from Polynesia, and is the Shaddock (Pumalo, Pomplemoes, sometimes called Forbidden Fruit). think this arrangement holds good, except possibly in the case of the Bergamotte, which has the highly-scented skin of the Oranges, but its pale-coloured skin and sub-acid juice are those of the Limes. Turning to the West Indies, which is the great second home of the Lime, and the principal area of its cultivation, I find it described by the exact McFadyen as C. lima, McF., a thorny shrub with ovate leaves, pentamerous white flowers, small nearly globose yellow fruit, with thin skin and an abundance of pure acid juice; it is naturalised in Jamaica, forming strong fences: all characters precisely accordant with Lord Ducie's plant. Grisebach unites with it C. spincsissima, Meyer, and refers both to a variety of C. aurantium, L., in which he is certainly mistaken. Brandis alludes to the West Indian Lime, following Grisebach as to its position and synonymy, but adds that the fruit is very much like the small acid Lime of India, and suggests the removing of it from under C. aurantium. The C. spinosissima of Meyer (printed by a lapsus "acidissima" in Brandis) is no doubt a subvariety differing in its very small leaves, flowers, and Other authors refer the West Indian Lime to C. limetta, Risso, which is its nearest European representative, but which differs in its sweet juice. The last reference which I have to make is to a woodcut in the Gardeners' Chronicle (n. s., vol. v., p. 690, fig. 123) of what appears to be the fruit of this plant, under the name of "the Bijou Lemon," with unfortunately no history attached. With the exception of this woodcut, I know of no other published figure of the Lime than that here given. It is a favourite fruit in the West Indies and Southern United States, the acid being far more grateful than that of the Lemon; and it is hence universally used for flavouring soups, &c., and in the preparation of many alcoholic and acidulated drinks. In my younger days it was imported in vast quantities into city of Glasgow, providing an indispensable material for the brewing of the famous Glasgow punch. That it is now so seldom seen comparatively is due to the declension of that social and family intercourse that once was so intimate between the great city and the Spanish main. It is still the principal source of citric acid, and is cultivated in the West Indies for its manufacture, especially in Montserrat and Dominica.

Earl Ducie, to whom I am indebted for the specimen figured, informs me that he purchased the plant, and is not aware of its origin; it fruited in January, 1883, and the flowering branch was sent in the following April. Both were very fragrant. Plants at Kew from the Montserrat estates of Messrs. Sturgess, presented by the firm, have smaller, more membranous, and darker green leaves; others from the same source, grown in Mr. Hanbury's garden on the Riviera, have ovate-lanceolate long-pointed leaves. Sir J. D. Hooker in the "Botanitaal Magazine."

THE BOLEYN NURSERY, UPTON.

THIS nursery, in which everything connected with the business of an essentially trade establishment is rushed with an energy that is combined with much acute apprehension of essentials, is at all times of the year worthy of a visit. Not established more than six years, in an increasing neighbourhood, it has made rapid progress, and at the present moment the numerous glass structures occupy the major portion of the original site. These are simple in style, roomy, and moderately low, precisely the kind in which to grow dwarf stocky stuff, when standing close, and being arranged, as one may say, in "columns of companies. they are easy of access and convenient for working. First to be noticed of popular plants, grown here large numbers are Palms. Whole houses are devoted to these plants, beginning with numbers of boxes, io which are the small two leaved plants, going on through little larger plants in thumbs and 60's, to stocky specimens in 48's boasting of having a few characteristic leaves each. Of Kentias

there must be close upon 6000 in pots alone, the sorts being K. Belmoreana, K. Canterburyana, and K. Forsteriana. Corypha australis is also much grown, and pretty dwarf well furnished plants were observed in various stages of development. Seaforthia elegans, Caryota urens, and the beautiful Euterpe edulis are met with in great numbers, all small, admirably grown, without an unhealthy plant among he Palms receiving the greatest attention are them. T Cocos Weddelliana, Geonoma gracilis, Latania borbonica, and the handsome Areca lutescens, of these last two there being at the lowest computation 20,000 in the houses. These are ever in request, the unsuitable treatment they get at the hands of those who must perforce grow them in rooms being answerable for much of this great demand. Palms in hoxes of about 18 inches by 12 are to be seen in most of the warm houses, under stages, on hanging shelves, or on the shelves at the lower angle of the roof, but everywhere having a perfectly healthy look, saying much for the correctness of their treatment here. Perhaps next in quantity to the Palms are the Crotons and Dracenas, the latter consisting mainly of D. Baptisti, D. amabilis, D. Guilfoylei, and the true form of D. rubra, but all as quite young stuff in small pots, and the propagation is being pushed on at a great rate. The Crotons are not so numerous as regards the sorts, the more choice and elegant forms being selected rather than a heterogeneous collection of the more bizarre-growing ones, pleasing marking, compactness of growth, and general handiness for decorative purposes, being the leading ideas apparent: such are C. augustifolius, C. pictus, C. Johannis, C. majesticus, C. Queen Victoria, C. Weismanni, C. interruptus, and C. Voungi.

A houseful of rooted store pots in the best of condition, with no failures in any pot, was a sight to rejoice the heart of many an amateur, who with his unfortunate makeshift appliances seldom meets with entire success. These were mainly of a "soft" character, such as Salvias, in fourteen sorts; Fuchsias in 140 : Coleus, all the best and most distinct, inclusive of two new ones - Pompadour and Congress, beautifully spotted kinds; Dahlias, single and double; Marguerites, blue and gold; Chrysanthemums of all kinds; Petunias, including those splendid acquisitions of Continental origin that were shown at Paris and Lille in the autumn of 1881. Lobelia pumila Ingrami, a pretty, dwarf floriferous white kind, is much grown, as are all the best sorts of Verbenas, Heliotropes, especially General Garfield and White Lady; Bouvardias in great numbers, and Acalypha musaica, this last seemingly a plant that finds many admirers.

Next to the Palms the Ferns are the most important class of plants grown by Mr. Crowe. These are to be found in immense numbers, from mere germinating spores, clothing pots and pans with a mosslike mantle of green, to the mature plant in the market When it is said the Ferns follow 60's or 48's. the Palms, that must be understood as meaning in importance, certainly not in numbers. The chief kinds grown are Blechnum corcovadense, of which last a splendid lot in large 60's was seen; Doryopteris palmata, Phlebodium aureum, Cheilanthes elegans, and many forms of Maidenhair, the handsomest of these being a variety called Adiantum Victoriæ, the foliage reminding one of A. Farleyense, but being less heavy and stiffer, and, therefore, better adapted for bouquet and vase work; A. Legrandii, a pretty confused looking, tufted kind, in general appearance not unlike the pretty A. cuneatum deflexum shown at the Royal Horticultural Society's meeting on March 11, excepting that it has tufted pinne that render it very distinct looking. Pteris cretica is well done, and especially fine was a large batch of Polystichum angulare in 48's, and a lot of Lygodium scandens, which last appears to be taking the popular

Azalea mollis is grown in great numbers, as are also Eucharis candida, and Begonias of the Rex section, the finely-marked, very sturdy, and dwarf-spreading B. President Bolle being very noticeable. Carnations, both border and tree, form a feature of the stock here, their cultivation having been one of the earliest taken up by Mr. Crowe. And so we find their propagation and culture being carried on at the present time with his characteristic energy. Amongst the newest of the latter are Prince Imperial, a robust growing red sort of excellent form, and very useful for cutting purposes; Sarah Bernhardt, also a well formed flower of a buff colour, flaked with red maroon; and General Roberts, a very full large

flower of a deep buff ground, edged and heavily flaked with red. Mr. Crowe has collected a large collection of all the best varieties of zonal Pelargoniums, and over 300 sorts of fancy and show kinds, the whole of which are pictures of health, and the foliage entirely free from spot. Some capital plants were to be seen of the remarkable Pelargonium Madame Sillerai—a variety bearing much resemblance to the well known Dandy, but which has never borne a bloom. It makes an excellent edging plant where a distinct greyish tint is wanted. The fine varieties of Pelargoniums sent out by Lemoine, both single and double-flowered, and those also of Mr. Pearson are here represented. Tuberoses are grown in masses, and are well done.

HYACINTH SHOW AT EXETER.

THE seventh annual exhibition of Hyacinths, held under the auspices of the firm of Lucombe, Pince & Co., took place on Friday, the 14th inst. The plants were arranged as usual in one of their large show-houses, and the whole of the houses of the establishment and grounds were thrown open to the public as on former occasions. The weather was delightfully fine, and the public largely availed themselves of the kindness of the firm in opening their premises. The Hyacinths, &c., which were more numerous than usual, were arranged on one side of the show-house in three rows, supplemented by over 200 Hyacinths grown by the firm. These were backed up with Ericas, Epacrises, Arums in large quantities, Palms, Tree Ferns, and Camellias.

The opposite side was filled with a mixed display of Cinerarias, Hydrangeas, Spireas, &c., backed up with plants similar to the other side, thus production of the competitors were quite up to the form of preceding exhibitions. The 1st prize was awarded to Mr. Snell, gr. to J. B. Lawless, Esq., The Cottage, Topsham Road, his collection being many points ahead of the others; 2d honours were accorded to Mr. Perkins, gr., Crediton; and equal 3d prizes were awarded to Mr. J. Sloman, gr. to Captain W. Fane Tucker, Braddon Tor, Torquay, and Mr. Viney, gr. to Mrs. Norris, Beacon Downes, Pinhoe. A collection staged by Mr. Counter, gr. to Mark Farrant, Esq., Exeter, contained a very fine tot of spikes, dwarf and well grown, and well worthy of notice. Another collection, put up by Stafford N. Green, Esq., was very creditable. Collections were put up by several not for competition, and with the addition of those staged by the firm the display was really grand.

The Orchid-houses contained a fine lot of Dendrobium nobile, some dozens of large plants covered with bloom; also in flower were specimens of Cypripedium barbatum, Dendrobium crassinode and D. densiflorum album, Lycaste Skinneri, Cattleya Mossiæ, &c. One half of the large Heath-house was occupied by flowering plants of their Cineraria Wonder of the West, a strain which the firm has grown and sent out for several years, and which is remarkable for the size of the bloom, some measuring $3\frac{1}{3}$ inches across. A fine batch of their Primula Ruby Queen, a fine ruby colour, and large in the trusses, is becoming very popular. The house devoted to Anthurium Scherzerianum and its varieties contains many seedlings just coming into bloom, some of which, by the size and thickness of their spathes, are destined for distinction; some of the spathes were 63 inches long and 4 inches wide.

A good plant of the fine new Nepenthes Mastersiana, assuming a fine colour, was suspended in this house. The houses devoted to pot Vines, Roses, &c., showed signs of good cultivation; so also did the large house devoted to the show and regal Pelargoniums. The fine Lucombe Oak at the entrance to the nursery was still thick with foliage, which fact refutes the erroneous impression sometimes seen in priot that it is deciduous in winter; it does for a week or two in the advanced spring shed a great deal of its foliage, but only for a very short period does it fail to don its nevertieen amenators.

don its evergreen appearance.

Mr. Elliott, to whom the business has been transferred, must be congratulated on the success of this his first Hyacinth exhibition; the fact that a spring exhibition, when this charming and attractive flower is in bloom, not being held in Exeter otherwise, it has become very popular.

Home Correspondence.

Chionodoxa Luciliæ,—Those who have experieoced disappointment with this bulbous plant would be well repaid if they could see the beds of it at present in flower in the York Nurseries. Certainly it would be difficult to imagine a sight more lovely than to see thousands of these large blue and while Scillalike blossoms all expanded together. The bulbs which form this charming display have been planted for three years, and have not been disturbed. We may safely consider it one of the most beautiful of all spring flowers. It prefers a deep sandy but rich loam in which to grow. R. Potter.

Clerodendron trichotomum.—Your figure of Clerodendron trichotomum does not do justice to that splendid shrub. I have seen it in Northern Nipon, very high up the mountains, amongst the Beeches, with panicles of 18 inches and more. To grow it to such a size it ought to be planted in rich vegetable mould. From its native habitat it will certainly be hardy even in Belgium. Kew Gardens received it several years ago from Dr. Regel. Jean van Volxem, Brussels.

Growth of Pinus Pinaster.—The accompanying sketch (fig. 73) was forwarded to us by Prof. Henriquez, of Coimbra, and shows a forked condition

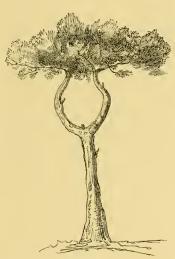


FIG. 73 .- ABNORMAL GROWTH OF PINUS PINASTER.

arising from the destruction, from some cause or another, of the leader.

Old-fashioned Flowers.—I send a list of garden flowers which appear to have been common about 150 years ago. It would be interesting to know what existing flowers (if any) were known once by these old-fashioned names:—Flower Geutle, of many colours; Memorables, Bacchus Bole, Royal Shuttlemaker, Dianea, Pluvion of Rome, Silver-capped Spanish Moley, Double Velvet Rose, Marble Rose, Virgin Silk, Moley of Huogary, Virgin Rose, Dorothea, Melancholy Gentleman, Garden Patience, or Monk's Rhubarb. The list could be greatly lengthened. £. V. B.

Peculiar Tree Growths.—I have several times met with singular tree growths, similar to the one mentioned by Mr. Webster. I have seen one kind of tree growing out of the stem of another, and I thought it possible that some birds might have dropped the seed of the one into a hole in the trunk of the other and that it had germinated there, for I had known of an old Apple tree with a fine Fern growing in its side and I also knew of a Holly tree and an Ivy growing on one stem. Both trees must, from the stem of the Ivy, be very ancient, and they present a

most curious appearance. There appears at the first glance to be but one crown as well as one trunk, but a closer look shows the two kinds of foliage and the two sorts of betries. Helen E. Watney.

British Ferns.—I am quite at a loss to imagine, after reading Mr. Druery's and Mr. A. D. Webster's interesting remarks on this subject, where all the native Ferns collected in some of our rural districts, and packed off to town in large hampers, can possibly go to, since the cultivation of our native plants seems, by your correspondents' accounts, to be much neglected. I thought that there must be a very great demand for English Feros in the market, as every lane, bank, dell, and wood for miles around the part of the country I reside in have been rifled of their of the country I reside in have been rifled of their chief attractions—Feros, Mosses, and Primroses—by "collectors." Mr. Webster may well laud the Carnaryonshire Feros. I remember obtaining some fine specimens at Dolbarden a few years ago, but I almost regret that he should have drawn attention to them, for it would not astonish me to find that a couple or more "collectors" put in an appearance this spring on the Carnaryonshire mountains, and make a raid upon the Ferns, not with a view of cultivating them, but of selling them, as they do the Hampshire Ferns, in Covent Garden. The distance is considerable, and I sincerely hope that it may deter them. Heller E. Watrey.

able, and I sincerey with the letters of Messas. Helen E, Waney,
— I am pleased to see from the letters of Messas. Druery and Webster that these plants are by some still considered worthy of being mentioned in "the public prints." Whatever may be the reason, it is certain that they are less popular now than twelve or fifteen years ago. Unlike Mr. Webster, however, I do not ascribe this indifference to the high (?) prices at which they are sold (if at all) by murserymen; on the contrary, the comparatively high prices are the consequence, and not the cause, of the limited demand. Let the public show a taste for this class of plants—or, indeed, any other—and a supply will quickly be forthcoming. Your readers will understand that it will not pay a nurseryman to propagate a plant by the thousand when has only the chance of selling perhaps a dozen or a score of plants, no matter how low be may offer them. One may visit hundreds and hundreds of nurseries, great and small, without coming across one decent collection of British Ferns; if any are met with at all it will probably be a few wretched stunted plants of the commoner kinds, planted out-of-doors in some out-of-theway corner near the rubbish-heap, and looking anything but encouraging to the would-be Fern grower. The ordinary nurseryman gives no attention to them, for the simple but sufficient reason that it does not pay him to do so. The most beautiful varieties are frequently sucered at by the superficial as "monstrous" and "unnatural" | As ii, forsooth, any production of Nature's could be unnatural! Not about the improved varieties of fruits? To be "natural" ought we to be content with the wild Crab instead of the inproved varieties of fruits? To be "natural" ought we to be content with the wild Crab instead of the user varieties of fruits? To be "natural" ought we to be content with the wild Crab instead of the busions Victoria or Magnum Bonum? Again, those who have not studied the subject have no idea how beautifully he law of the evolution of species is illu

Fruit Prospects in Devonshire.—Our fruit prospects as regards Apricots, Peaches, Nectarines, and Pears, are very promising. The first-named have been opening their blooms for the last ten days; the weather has been very rainy, and the temperature low, with but little frost, and that not sufficient to injure the blossoms. As we are approaching the period which proved so disastrous to the crop last year, it behoves us to guard against being caught enapping, by having in readiness, besides the copings to the walls, protection for the front also, to put up should occasion require. It is not only the keeping of the bloom quite dry, but the guarding of it from cold, cutting winds, which the tender qualities of the bloom cannot resist, that is necessary to secure them from danger. In the absence of glass for front protection Frigi-Domo, baize, or the stout shading manufactured of the purpose; these may be bought of any length or width. I have in use a thick shading manufactured and sent these materials for the purpose; these may be bought of any length or width.

out by Messrs. B. Eddy & Co., Porthlevin, Cornwall, which I have found more durable than Frigi-Domo or baize. Peaches that were taken off from the walls before Christmas are much later than those not so treated, the latter opening its bloom, but the former quite a fortnight or three weeks later, which is a great consideration. D. C. Powell, Powderham Cautle.

Myosotis dissitiflora alba. — I have been amused to read Mr. Diver's self-complacent claim to have been the raiser of this pretty Myosotis. Seeing that it appears to have broken out as a sport in more than one place almost simultaneously, it is difficult to understand how any one can claim to be the raiser. Here it sported in one small shoot on an old plant four years since, and from that tiny piece I have obtained a large stock; yet it would be absurd were I to claim to be the raiser, seeing that it has not been "raised" at all. Almost at the same time the large-flowered kind named Perfection broke here, and similar forms have sported elsewhere, A. D., Bedfont.

Fruit Prospects in Suffolk, — Mild as the winter has been, trees do not appear to be any forwarder than usual, for though we have little frost and scarcely any cold, there has been a remarkable absence of sun, which, after all, is the propelling force that sets vegetation in motion. If this luminary breaks through the clouds now, we shall see a great change in a short time, as buds are fast swelling, and Apricot blooms are now expanding, which, with us, is about the same period as last and other years, as they are generally open by the middle of March, and unless cut off, set-to swelling by the end of the month. We can afford to spare many this season, as the trees are very full of flower, which look as strong and promising as I ever remember. Peaches and Nectarines are also equally good, but Pears, that had much fruit on hem last autumn, are thin of blossom. The heavy cropping does not appear to have had any effect on Apples, which everywhere, so fat as I have seen, are crowded with hud, and the chances are therefore much in favour of another very fine season. Plums and Cherries are in the same satisfactory state, and all we want is a warms settled spring, which gardeners are all hoping we may have, although the weather prophets are predicting all sorts of evils, founding their fore-tellings on the absence of cold up to the present, and which they say is yet to come; but if so, may it keep away till the close of the year, when we shall be more indifferent to the sting in its tail. We had much such a winter last year as we have passed through this, and, excepting for Plums, fruit was more abundant during the summer than it had been for a very long period, and may be plentiful again in the one one before us. If so, we shall cease to lament our not being visited by hard frosts, which, by many, are looked on as necessary to keep things back, although short days and absence of light do this, as may be seen by the state fruit and other trees are now in. J. Sheparate.

Plant Labels.—It has been said that however willing people are to acknowledge that flowers can be better grown by others than by themselves, every one is convinced that his own labels are superior to all others. The two enclosed labels lay no claim to novelty, but they are cheap, easily made, and of a convenient shape, which also suits for cutting them out without waste of material. Four pounds of zinc makes nearly too of the larger size; 3 lb. nearly roo of the smaller ones. They can be cut with a common pocket-koile, or a chisel, 100 in from an hour to an hour and a high. But one thing is probably felt by all who use zinc labels, namely, the inability to write a label on the spot, when a plant is seen which requires one. If no indelible pencil is to be had for writing on zinc, could not a larger sized stylograph be made (which could be carried about in the pocket), to hold a good supply of zincink, and of some material that would not be injured by it? Seeing a suggestion some time ago that a common lead pencil was suitable (as though the writing looked faint at first it became more distinct in a few days), we tried it, but it was a complete failure. Many a plant is left unnamed if a label is not at hand to be written on at the moment; yet few things add more to the interest of a good collection, than having he plants clearly and correctly named. Zinc labels are sufficiently inconspicuous to be largely used without interfering with the beauty of a garden or rockery, as white painted wooden labels must do. In this damp climate we find wooden labels must do. In this damp climate we find wooden labels must do. In this damp climate we find wooden labels must do. In this damp climate we find wooden labels must do for years. White painted wooden labels must do for years when it looks faint. Usually they remain sufficiently distinct to trust to for years. The ink we now use is made from a rectipe kindly given to me by Mit. Neitl rost. The proper is made from a rectipe kindly given to me by Mit. Neitl or of water. Car

when this is not the case. After trying various sizes in zinc labels of this shape I prefer the smaller one of the two enclosed (or one a little shorter) for use on rockwork, and the larger one for other parts of the garden, where labels are more likely to be disturbed; a longer label is apt to get bent, a very short one to get buried. C. M. Owen.

Setting Peach Blossoms .- I am of opinion Setting Peach Blossoms,—I am of opinion that a great deal too much importance is attached to the artificial setting of Peaches, which in the majority of cases is quite unnecessary, as it is next to impossible for the numerous grains of pollen contained in each anther to fall or float off in the air without one, at least, lodging on the stigma of each flower, and although I am not sure that it is so probably the single grain is quite sufficient to fertilise the ovule and cause the ovary to set. The thing I am always most particular about is the condition of the atmosphere, which, when the trees are in flower, ought to be light. which, when the trees are in flower, ought to be light, which, when the trees are in flower, ought to be light, dry, and bouyant, which condition may be ensured and maintaiced by having just a little heat in the pipes, with a "crack" of air on the ventilators by night, which air it is necessary to increase early in the morning and during the day, according to the state of the weather. If this is done, and a temperature ranging between 45° and 60° be maintained, the pollen cannot fail to ripeo and be fertile, and it is only when the internal air is close and humid that its only when the result of the control of pollen cannot sail to riped and be testing, and it is fore and humid that its functions are not carried out, as then it remains a close inert mass without fertility. This may easily be seen by placing the anthers under a magnifying glass, when the pollen grains will be found sticking together, in which state they soon decay, as also do those outdoors on wall trees, where, if the weather is wet and cold during the time the blossoms are open, the pollen quickly perishes, and there is no set. If it is needful to set free and disperse the pollen when the air is quite still and calm a gentle shake or tap of the trellis with the hand will do all that is wanted, and effect as much good as hours or days spent with a camel-hair brush in impregnating the blooms, which in the ordinary way is carried out by the wind, and sometimes by insects, although these latter get the credit of being more useful than they really are, though many tegard them as of such importance that they set a hive of bees in their of such importance that they set a hive of bees in their of such importance that they set a hive of bees in their Peach-house, and like to have many others at work in the gardens. For my part I do not care to see them so busy, as they draw out and remove the ocetar that nourishes the embryo fruit, for which purpose it is no doubt placed there, and the bees are only robbers, obeying the laws of Nature and their own instincts to live. Not content with the honey, they steal the pollen wholesale, and fly away with it oc their legs to make and build up the comb they so dexterously form in their hives. deterrously form in their hives. Any one having any doubt of this may soon satisfy themselves by watching these busy workers on a Peach or Apricot tree, ing these busy workers on a Peach or Apricot tree, where they will soon see them hastily gathering and packing the yellow grains in the deftest of ways, and when loaded flying off to their homes. Some growers of Peaches and Nectatines indoors aver that instead of keeping the air light and dry they syringe, and attribute their success in getting the fruit to set to the action of the water, which is very doubtful, and it is more than likely that the "set" had taken place previously or occurred after. but not from any help reviewing the concurred after. but not from any help previously, or occurred after, but not from any help the water rendered, although it might appear to expedite matters by the rapid swelling of the frinit, which often takes a quick turn after being wetted, when it seems to rush on at once; and this is often very apparent with trees in the open, when subjected to an April shower. J. Sheppard.

Achimenes in Baskets. — The time will soon approach when gardeners will be turning nover their Achimenes in store pots to see how they have passed the winter, and to start a few for early flowering. A Cucumber-leame or other hotbed in work will be a capital place in which to give them a start. The strongest tubers being sorted from the weaker ones, they should be placed an inch apart on the surface of a mixture of half-rotted leaf-mould and peat, containing one-fifth sand. Pans or shallow boxes are the most suitable receptacles, as the Achimeos are but shallow ronters. If the mould was moist the tubers will require no water before the plants appear above will require no water before the plants appear above it, and even then watering must be done with care so long as they stay in a hotbed. If sorts are scarce now is a good time to take the young tips, when they have grown to 3 inches long, and make them into cuttings. They will root readily in the same mixture, taking care to put a thin layer of silver-sand on the soil in the pans in which they are to be struck. One of the prettiest methods of growing these plants is in baskets or shallow pans, or Orchid pots with interstices in the side. Thus suspended and allowed to hang down quite freely, these plants, which are not meant to be marshalled into a stiff upright growing mass, as they are too often seen growing, do well. The plant is and remains a trailer, rooting at every joint when lying on the soil in a warm temperature, like a Philodendron. In moss-lined wire baskets filled with a

soil containing in addition to the before-named mixture a little retentive loam, sifted fine, and somewhat less sand and decayed cow-dung, the young plants, each with its adhering ball of earth, can be planted in the surface of the soil, and also inserted through the moss of the sides. For a basket having the capacity of a peck measure from tweoty-four to thirty single plants may be used, or proportionately fewer when planted in bunches, which after all, perhaps, disturbs the young plants the least. Living Selaginellas of the weaker species can be used to fall over the edge of the baskets, which may be hung in any forcing-house at work, where the shade is not dense. Achimenes do not like heavy syringing, but a moist atmosphere suits them admirably. The different varieties of Achimenes are beswhen grown in a moist warm stove up to flowering time, when a warm dry one suits them better. In fact, they then seem to delight in conditions that are peculiarly favourable to the propagation of red-spider, and will flower then most abundantly; but at the same time the cool conservatory is well adapted for them when in flower during June, July, and August. The old Achimene picta, with a scarlet tubular blossom, and woolly leaves, looking rather more like a Gessera, is well worth growing for winter flowering. Great advances have been made in the direction of variety among the Achimene, still some of the earliest known kinds remain among the handsomest, such as A. patens a lovely blue; A. patens alba, A. longiflora, a violet, very large and beautiful; and A. longiflora alba should be in the possession of every grower of these plants, M.

Transplanting Evergreens.—As the winter has turned out so mild, it would have been quite safe to have transplanted evergreens in the autumn, although, taking the generality of years, that is a risky season, especially if the plants are moved late, as then they have no time to form roots before sharp frosts and bitter blasts are upon them, the combined influences of which search them through and through. Transplanted in spring they escape all risks of that kind, and instead spring they escape all risks of that kind, and instead of standing dry and withered, with little or no sap left in stems or leaves, they look fresh, plump, and full, and start off to grow at once as they receive little check beyond the inevitable disturbance of the roots, which they quickly get over, for directly the buds begin to burst on the branches, fibres form and send up the requisite water. The most trying month for evergreeous is March, which I like to see the last of before lifting any large plants, as the easterly winds we sometimes get are very trying; but when April sets in, with its sunshine and showers, the work may be carried on in real earnest. The only drawback in waiting till this season is, that it leaves but a short period for conducting operations; but by teking in hand the ing till this season is, that it leaves but a short period for conducting operations; but by taking in hand the earliest growing evergreens first, and putting all available strength on the job, a good deal may be got through in the space of two or three weeks. The way to economise labour is to have two gangs of men, the one disping the holes and nation; and the through in the space of two or three weeks. The way to economise labour is to have two gangs of men, the one digging the holes and planting, and the other taking up the shrubs, which division of labour has another advantage, as the plants are moved from place to place quickly, and are not kept long out of the ground. This is much in their favour, as when there is no delay there can be no rost when there is no delay there can be no rost drying or loss of sap by evaporation through the leaves and bank, which goes on at a rapid rate when plants are lifted and exposed, as may be seen by the way they flag and the distressed look they have when so neglected, the effects of which are felt long after, as once the tissues shrivel, it takes some time for them to assume their proper condition again. In digging up evergreens for the purpose of transplanting, it is always advisable to open nut a good wide trench around each plant at a fair distance off, into which opening the soil can be forked out from among the points of the roots and kept shovelled out so as to keep the space clear till the ball has been sufficiently reduced to be small and light enough for illing with the tackle or appliance at command for the purpose. For moderate-sized plants a couple of stout levers are very handy, as they may be thrust under and the shrub lifted bodily out and conveyed at once to the sire where it is to be planted. The best implement I have had to do with for such work is a curved marrow truck with strong sides and handles on low wheels, and by tipping the end of this truck noter the ball of truck with strong sides and handles on low wheels, and by tipping the end of this truck noder the ball of any small tree or evergreen and pulling down the and by tipping the end of this truck noder the ball of any small tree or evergreen and pulling down the handles the plant may easily be hoisted and dragged away by two or three men. In planting great care should be taken of the roots, so as not to bend or bruise them in the straightening nut, and when they are laid regularly and covered with the finest and best of the soil, it is a good plan to dash over them a deantity of water, the force of which will carry the earth in under and fill up any cavities that may exist in any part of the ball. This filling up of such spaces is very important, as any hollows contain and let in air, and cause such a rapid drainage that it is almost air, and cause such a rapid drainage that it is almost is very important, as any nonows contain and let in air, and cause such a rapid drainage that it is almost impossible to keep the ground moist. To ensure its being in this condition it is necessary to mulch, which should be done by scattering a good layer of half

rotten dung or hiter so as to extend 2 feet or more around the stem of each plant. This will prevent evaporation and maintain the soil in a uniform state that will be highly favourable to the roots, which can then find all they require. Should the plants flag, as they are likely to do when the atmosphere is dry, the foliage ought to be wetted during the evening, which may quickly be done by the use of a garden engine or syringe to squirt and distribute the water. What prevents freshly transplanted trees and shrubs growing more than anything else is wind-waving, a motion that is very trying to the roots, which strain and move in the ground, and this constant friction prevents fibrils forming, or, if formed, they are chafed off again. To be safe and secure, all newly moved plants should be kept steady by proper supports, the best for tall subjects being long stout stakes or poles set triangularly in the ground and brought sloping for their points to meet about three parts up the stem of the tree or shrub, and there made fast by binding and ties, which will hold the plant rigid. J. S.

COLONIAL NOTES.

TORONTO, CANADA: March I .- When I awoke this morning the tips of my ears and nose and my eyelids momentarily occupied my attention, and, like an electric shock, their chillness conveyed along the train of thought the inevitable verdict-"Rather sharp last night." On consulting the thermometer the verdict was corroborated with a registration of 10° below zero. This was not altogether unexpected, as the previous night it was 5° below. On entering my coolest house—a vinery and plant-house—containing Calceolarias, Cinerarias, Primulas, Lettuce, and a general collection of successional plants and delicacies for table and conservatory, overshadowed by the Vines, which are just about coming into bloom, the thermometer stood at 55°. This is the end house in a range of lean-to's, about 120 feet long by 15 feet wide. The conservatory is at the other end, next to the family residence, and is what would be called in England "a large conservatory," have included its length in the 120 feet I may here say that it is about 25 feet wide. This construction supplies me with my winter's work, in which I find enough to keep me busy, including my battles with "Jack Frost," which was not quite so risky this season as in the past, as we got in one of Hitching's corrugated fire-box boilers in the autumn-an excellent acquisition, which obviates much of my former time and trouble. When I read in the Gardeners' Chronicle the correspondents' notes with regard to the mild weather you have in England, Primrose gathering, the blackbirds song in the catkin-covered boughs of the Willow, and their mistaken identity of the season, why, I seemed transported at once to some sunny slope on the Berkshire hills, or enjoying a ramble through the flowery hedge of a Kentish orchard; but my attention is drawn towards a tapping at the glass overhead. It's a solitary English sparrow that seeks a drink from the melted ice as it runs down the glass under the direct rays of the noonday sun. Allow me to admire it for a moment, as it is some weeks, nay, months, since I saw a bird of any other species; a hardy little thing, but very destruc-tive, and is now condemned to be "Boycotted," or to be totally exterminated by Canadian agriculturists.

It is now mid-day, and I will see how the thermometer stands. The sun strikes rather hot against that back vinery wall. I can't give air just yet though, as the ventilators are frozen down; but I find, on going out, that I had forgotten to dry my hands thoroughly, and they are now frozen to the latch of the outer door, and I declare the thermometer has gone up to 3° above zero. That's pretty good for us. We'll soon have some stray redbreast or beautiful woodpecker come to see us, and although it's too far west for the cuckoo to come, the whip-poor-will, or little bumming-bird, will usher in the foliage and fruit blossoms.

The first time I saw a humming-bird I was sitting on a pair of double steps thinning away in the vinery, Presently I heard the constant buzz caused by the little creature's wings, and I thought the sound was produced by the wheel of the old sawmill close by, which by some sudden cause was set going—but no; I looked round again, but nothing new or uncommon greeted my view. Thoughts again took flight, and brought to my memory the hollow-sounding wind rushing through the passages and tunnels of an old English residence during the absence of the family; but no, 'twas nearer this time, simpering round the bloom of a Black Hamburgh, and while on the wing passed round the bunch, and searched each nectary with its long delicate bill. H. R. Lee, Oaklands, Toronto, Canada.

Çhe Kosery.

SPRING WORK.—All the prognosticators and prophets have been sadly wrong, who predicted for us a severe winter; it was, perhaps, natural to expect that we should have a different one this season, but the unexpected has again happened, and unchecked mildness has been its character, and as yet there are no signs of the recurrence of that severe blast of cold weather we experienced The consequence, as far as regards the last March. Rose, is that in many gardens the plants have started into growth, and even buds have been formed on the end shoots, suggesting a waste of effort which many regard as seriously affecting the prospects of the bloom, and perplexing growers as to what is to be done in the matter of pruning. There cannot be much doubt that there is a considerable waste of sap in such early growth; but I think growers will hardly mourn over it when they remember what a bard winter is for their favourite flower, when they have to cut back as bard as possible because the blackness of the pith tells them too plainly how the frost bas caught hold of the plants; moreover, the experience of last year teaches us how great is the recuperative power of the Rose, even of those kinds which are generally considered delicate. Thus I saw at Mr. George Baker's, at Holmfels, Reigate, a row of Marie Baumann, on the seedling Brier, which for vigour and excellence of bloom could not have been excelled. Now these plants had shared with all others the effects of the forward winter, and as it is the habit of the Reigate Rose growers to prune early. they had been pruned before the severe weather above alluded to in March; the consequence was that they had to be pruned again, and yet, after all this, they were models of beauty; and Marie Baumann is generally considered a delicate Rose, and if it could withstand, such an experience it is quite clear that the general run of hybrid perpetuals can do so. And I do not think that any gloomy anticipations need be indulged in because of the forward state of the terminal buds, for if the plants be examined it will be found that all the buds at the base of the shoots are dormant, and these are the only buds which will be left when the pruning is done. When is this to be done is the question that now will be most pressing on growers. It is a general practice, I fancy, to prune about March 20. Of course I write for amateurs, for nurserymen, with their large numbers, are obliged to do it when they can, and I do not think it would be well to commence before that; after it we are hardly likely to have severe frosts, and those which affect the young shoots we are hardly free from till May is over,

As to the character of the pruning opinions differ, whether the plants should be cut hard back or not. My own practice, and that of many other growers, is to cut hard, that is, to three or four eyes, and by this means to encourage the plants to throw up from the underground buds; these shoots have then almost the character of maiden plants, and the blooms from them are generally very fine; but others, again, prefer not cutting so hard, leaving the shoots about 9 or 10 inches long. If this is done no eye that has started should be left, and the plant should be cut below the last started one. There are a few very rampant growers where hard pruning would be unadvisable, such as Madame Clémence Joigneaux, Etienne Levet, Edouard Morren, &c., for it would have the effect of throwing them all into wood. Delicate growers, on the other hand, cannot well be pruned too hard.

Teas will have to be dealt with a little later.

Few gaps can have been made in the rosery during the past season, and those who made up their beds in natumn will have nothing to do in this respect, for not only has the winter been mild, but dry, less rain has fallen than usual, and the roots have not become soddened; but I have been of opinion, and am still, that unless you can get your Roses from the nurserymen carly—i.e., the latter end of October or beginning of November—that it is better to lay them in and plant in the spring. I was told that the plants would have emitted a large number of rootlets, that these would be injured, and that damage to the plant would ensue; all I can say is that I did not find it so, and that both plants and flowers were all that I could desire for a first season's planting. I believe that the iden which Mr. Fish started in the Rosarian's Year-

Book, of moving the plants in the autumn, is gaining ground, that it stimulates root-action, and thus tends to the well-heing of the plants. Should there be gaps in the beds and no reserve stock laid in, the only way to remedy it is to procure plants in pots, which the nurserymen have always in hand.

There are two ways of treating the Rose beds at this time of the year—one is to take off all the long straw in the mulching with which they have been littered during the winter, and, indeed, in some cases, to give fresh mulching; those who go in for exhibiting will most likely do this, and not care for the appearance of the beds. I prefer, myself, not being an exhibitor, to take off the long straw in the litter, and then gently fork over the beds; this prevents blackbirds from scattering the manure about, and I think that it is equally good for the plants, and the beds have certainly a more tidy appearance. Of course mulching can be kept tidy, but it involves more trouble than most amateurs would care to give.

It is useless at this time of the year to write anything as to the choice of varieties, but should Roses be required to fill up spaces there are a few which it would be well to obtain - such, for example, as Merveille de Lyon, which, whether it be a sport or seedling from Baroness Rothschild, is likely to be a valuable acquisition. Bennett's Earl of Pembroke also promises well, as do Henri Schultes and Lady M. Fitzwilliam, of the same raiser-the first somewhat like Maurice Bernardin, the second a purplishrose, and the third a light pink. Mary Pochin is a good Rose, but I fear that its habit will not long allow it to be retained on the lists. Amongst Teas there are two or three perennial varieties, but of these we must wait to see more. The Hon. Edith Gifford is a white slightly tinted with rose, said to be like Devonianum, and a free grower. Prince of Wales (Bennett's white) I saw well exhibited several times last season is, and as far as one can see, a good new Rose, yellow and rose. Souvenir de Thérèse Levet has been described by one nurseryman as a crimson Niphetos! Il it at all corresponds to this description, it must be a grand acquisition; for although Niphetos is a very undependable flower, and is apt to throw its petals about, yet they are so large and of such good substance that a red flower of that character would be very valuable. Wild Rose.

ROSE COMTESSE DE CAMANDO.—A II.P. Rose of the Général Jacqueminot type, sent out by M. Lévêque, of l'aris. It is stated to be a free flowerer, whose blooms are largely used by the bouquet-makers of Paris. The flowers are large, regularly imbricated, bright red, shaded with carmine. It is figured in the March number of the Journal des Roses.

∯loqists' ∯lowers.

THE HYACINTH season is at hand, and as I admire the large massive spikes of beautifully formed and exquisitely perfumed flowers, in all their bright and varied colours, I feel that we owe a deep debt of gratitude to those who have brought this flower to such a high point of perfection. It seems to me rude and unthankful in the highest degree to speak or write of the florist as one who has abused or spoiled, rather than aided Nature in improving her own handiwork. A globular Rose, or a globular Chrysanthemum, has been produced by long and patient watching and waiting; thousands of people are delighted with them; but here is what I read in a contemporary. Writing about Chrysanthemums of the Empress of India and Mrs. George Rundle type, the writer says, "They are altogether repellent, rather than attractive, to tasteful and artistic people;" and further he informs us that "The florist of to-day has lost his power of forming public taste; his mission as a floral schoolmaster is gone-a result mainly brought about by the market growers, who have educated the public to admire flowers really beautiful by producing them in large quantities at a cheap rate." The writer in question does not seem to appreciate the work of what he calls the "florist proper," whatever that may mean. But I wonder what our gardens would be without the flowers that have been improved by the florist! The greater part of the work of the market gardener would be gone, too. The market

gardeners find it answers their purpose to grow Chrysanthemums of the Mrs. Rundle and Princess of Teck type by the thousand; and they grow them because it pays to cut the flowers and sell them. Every florist's window in Covent Garden market is full of the globular flowers in November. The tasteful and artistic people are evidently in a minority at the West End at Chrysanthemum time. But we find all through the season that the "market grower" is rate," if you like—the plants provided to his hand by the despised florist. Now it is the Hyacinth and Tulip, soon it will be Fuchsias and Pelargoniums, Roses, Carnations, Pinks, &c. I do not think a man can be sufficiently interested in his own work if he has time to leave off and abuse the work of others that he does not quite understand. The florist has a fixed purpose in his mind's eye. He works for something difficult to obtain-a flower better formed and more beautiful in all its parts than any of his predecessors or compeers have attained. The object may not be achieved, but the pleasures of anticipation are very great.

" Hope springs eternal in the human breast, Man never is but always to be blest."

The work of raising and improving florists' flowers has been going on for ages, and ages yet unborn shall continue the work their fathers have handed down to Some writers of the present day, and workers as well as writers, seem to have got it firmly fixed in their heads that if a man is a "florist proper" he is good for nothing else but pottering over his few fanciful flowers. Perhaps they do absorb more than a fair share of his time; and I should say better is it so than that he should spend his spare time in interfering with and disarranging the work of his neighbour in another part of the vineyard. Let every man be fully persuaded in his own mind what his work is, and let him do it with all his might. I believe that the florist of to-day does his work better and more quickly than it was done some years ago. Take the Amaryllis as an illustration. Some ten years ago Hippeastrum Leopoldi was introduced to our gardens-placed in our hands as a leaf from the book of Nature. Not long did it remain in its pristine beauty. The hybridist was speedily at work crossing and intercrossing, with results more remarkable and more speedily accomplished than the whole age of flori-culture has yet seen. The vigour of the plants, the form and colour of the flowers, have been improved, to a degree that is simply marvellous, by Art and Nature walking lovingly hand in hand. Go to Chelsea, inspect the large show-house, now full of Amaryllids in flower, in Messrs. Veitch's nursery; carry the mind back for ten years, and compare the Amaryllis then with what it is now, and say, if you can, "that the florist of to-day has lost his power of forming public taste." F. Douglas, Great Gearies,

THE AURICULA. - The mild weather is causing the alpines out-of-doors to develope their flowers, and if the weather continues favourable there will be an early and strong bloom. It seems to me that to grow choice alpine Auriculas or any other choice border flowers out-of-doors they require more attention than they do under glass. Slugs are constantly prey-ing upon them, and they cannot be satisfactorily dealt with in any other way than by catching and killing them-not a very pleasant occupation on cold winter nights, or before daybreak. choice compost is usually placed round the roots, which attracts large worms; these also do harm, so that it is only by stirring the soil amongst the plants, and carefully watching them during winter, that they will do well. Seedlings are now coming up thickly from seeds sown on a hothed about six weeks ago; the tiny plants require attention during the early stages of their growth. As soon as the first leaf is seen projecting from between the seed-leaves they may be pricked out in fine soil, using small 60-sized pots for a dozen or more plants. Some fine sand should be sprinkled over the surface, and it must be made smooth and level, the young plants to be watered with a very fine rose. The trusses on plants in the general collection are now developing very freely, and no good results will be obtained unless the plants are kept on growing without any check to their growth. It is easy enough to care for the plants that are in a heated house: those in frames should be carefully covered with mats, as damp is injurious to the opening flowers, but not so much so as frosts.

THE CARNATION AND PICOTEE .- A grower of these flowers met me a few weeks ago with the question-"Do you still recommend potting so early in the year as you did?" I was able to answer that we had potted our plants earlier this year. I found the plants had made plenty of roots, and, as they were sheltered from heavy rains by glass lights, they could not be injured in any way. They did not receive any water for about ten days after being repotted; by that time the plants had begun to root freely into the fresh compost, and a good supply of water was necessary. Many growers place the plants out-of-doors as soon as they are repotted, in that case they ought not to be interfered with until the end of March. Even then I have seen the plants covered with snow in less than twenty-four hours after they were repotted. This would scarcely fail to be injurious. Tree or perpetual flowering Carna-tions have gone out of bloom, but they were very useful during the late autumn and winter months. Cuttings put in about two months ago should now be potted off separately into small pots, and be grown on carefully in the greenhouse. We potted on the large plants about a week ago; they will furnish a quantity of blooms next season if the plants are well cared for. Such old plants that have bloomed during the winter may be planted out against a low wall or fence. They like rich soil to aid in fully developing the flowers.

THE GLADIOLUS,-In a few weeks it will be time to sow the seeds of the hybrid forms of G. gandavensis. The best way is to sow them in pots, and start them in a gentle hot-bed. The seeds will be up in two weeks; an ordinary two-light frame will be sufficient to raise between 2000 and 3000 plants. Seven-inch pots answer well to sow the seeds in. The general collection should now be planted out, if the ground is in good condition; but I would rather wait for a week or two, if the ground was not sufficiently dry. It is not well to plant them too deep, and whatever may be the nature of the soil it answers well to place some clean sand under and over the bulbs. The hardy species and varieties should be taken up and planted again, if it is intended to do so. My own experience suggests that it is best to leave them alone, at least for twenty years. In that case they will not require attention often during an ordinary lifetime. I plant the roots of these hardy kinds in soil composed of two parts good turfy loam, one leaf-mould, and one of sea sand.

PHLOXES.—March is the best month in which to put in cuttings of these. They will form roots in a cold frame, or on a shelf near the glass in a greenhouse, but more speedily in a hothed. Put each cutting separately in a thumb-pot or small sixty. When they have formed roots and are inured to the open air, they may either be planted out or grown in pots. If planted out in beds they should be a foot apart, next year they would be close enough at 2 feet from each other. Six-inch pots are the best size to flower them in; and there are few more useful plants to place in the greenhouse or conservatory in August. The plants must be grown out-of-doors until they arrive at the flowering stage.

PENISTEMONS.—The rooted cuttings of these preserved through the winter should now be planted out either in the herbaceous borders or in beds. The old plants have passed through the winter in the open ground almost iotact this year, so that the cuttings would not be wanted unless more ground is to be planted. The Pentstemons require much the same treatment as bedding Calceolarias; the cuttings to be put in at the same time in October. J. Douglas.

FORESTRY.

PLANTING WASTE LAND.—A considerable amount of public attention is again being directed to the vital subject of planting the waste lands of our country, indeed the attention the question has already received clearly shows the deep interest that is felt in the matter.

That there are vast unproductive tracts of land in the British Isles is well known, and it is certainly surprising that up to the present time so few of these bleak wastes and hungry moorlands have been transformed into good arable land by the genial protection afforded to them by a well arranged system of plactations. There are some, however, who go so far as to say that Great Britain is over-wooded at present, and that to this cause is to be ascribed the excessive rainfall, and consequent bad seasons from which we have suffered in late years; but a glance at the "Statistical Atlas" of André and Peschel clearly reveals the fact that Great Britain contains a far less percentage of woodland in proportion to its area than any country in Europe. Thus:—

In Sweden woo	dland oc-	Per cent.	In France wo	odland o	
cupies		39	cupies		17
., Russia ,		31	,, Italy	31 31	16,9
,, Austria and		•	,, Belgium	27 47	¥5 8.9
		20	" Spain	39 99	
	29		,, Portugal	12 22	7
"Germany "		25.5	,, Holland	,	7
" Switzerland,	, ,,	19	, Denmark		5
" Greece "		18 (?)	, Gt. Britaio	19 31	2.4

Although these figures must only be considered as approximately correct still it is particularly noteworthy the small percentage of woodland that Great Britain contains. We may safely say, and that without fear of contradiction, that the area of woods and forests in the British Isles might be doubled by the planting of waste or otherwise worthless tracts of ground, with the result of not only benefiting the country at large, but vastly increasing the value of land.

That the getting up of shelter would improve the condition of the agriculturist, and tend to make his home on the dreary treeless plain or bleak exposed upland a more desirable one, we cannot doubt; indeed, in viewing the matter from a disinterested standpoint, tree planting is a necessity, and is urgently required, not only for the amelioration of the climate, but for the sake of the shelter and genial warmth it affords to man and heast.

One of the most discouraging features in planting mountain districts, and one that has seldom been pointed out, is the expense of enclosing the ground. This, in most cases at least, is very considerable, indeed in some cases the principal item in the formation of such plantations, for it is well known to those who have had any experience with mountain sheep that none but a fence of the most substantial quality, whether this be of stone or wire, need be erected to prevent their incursions to enclosed ground. This to many may appear somewhat strange, but to those acquainted with the habits of these sheep it is readily understood, for they are not only more destructive, but being of smaller size are consequently more agile than lowland sheep, and can clear or jump a fence that the latter would never think of attempting. The temptations offered to sheep in newly-formed mountain plantations are also considerable, for not only is the grass in such places tender and sweet, but the little shelter afforded by both fence and trees is at times a welcome retreat from the cold monotain blast to which they are generally exposed. Another deterrent cause, that is frequently pointed out, is the many unsuccessful attempts that have already been made to form such plantations, and which has engendered the idea that the soil or situation is not adapted for the growth of trees, and that further attempts in the same way would no doubt end in a like manner. This may be true in some cases, but a careful examination as to the cause of failure would in nine cases out of ten reveal the fact either that the plants were unsuited to the soil, or that, through carelessness, the roots had become dry or frosted previous to planting-in short, that experienced skill and judgment had not been employed in conducting the work. In choosing plantation sites it is well to bear in mind that the nature of surrounding circumstances, such as soil, aspect, exposure, and several other matters, are of primary importance, and should in all cases be taken into consideration.

That the value of home-grown timber will increase as foreign supplies diminish is beyond a doubt, so that the planting of waste lands may not only be relied upon as a safe investment, but also for the supply of timber—a matter of national importance. A. D. Webster, Penrhyn Castle, North Wales.

ERICA CARNEA. — This, for some weeks, has flowered splendidly out-of-doors, and it is a valuable kind because of its early flowering habit and real beauty, as well also for its good nature in flourishing almost in any soil. At Cambridge, where nearly all Ericaceæ require specially prepared beds, this does well in the ordinary soil.

Reports of Hocieties.

Scottish Horticultural Association. — The annual meeting of this Association was held in Edinards in Deservation of the Association was held in Edinards in Deservation of the Association was held in Edinards with the Association was held in Edinards with the Market and the State of the Association was the Association with the Association was the Association was the Association with the Association was the Association of Mr. D. P. Laird, resigned; Vice-was Leiburg was the Association of Mr. D. P. Laird, resigned; Vice-was the Association of Mr. William Priest, and Mr. A. D. Mackenzie. The retiring President, and Treasurer, Mr. William Priest, and Mr. A. D. Mackenzie. The new Fersident, on its flourishing condition, and trusted it would have a long career of usefulness and prosperity.

Variorum.

THE MANUFACTURE OF VIOLINS IN GERMANY. —In the No. 3 Museum at Kew a very interesting series is exhibited illustrating the manufacture of violins in Germany. It seems from the descriptive label which accompanies them that the woods used in this manufacture are the following :- Norway Spruce (Picea [Abies] excelsa) for the resounding cover, technically called the belly, the vertical fastening of the body, and the sound-post; Maple (Acer Pseudo-Platanus) for the back, the corners, and the neck; Lime (Tilia europæa) for the horizontal fastening of the body, Beech (Fagus sylvatica) for the bridge, White Beam tree (Pyrus Aria), dyed black, for the body of the finger-board; and Ebony (Diospyros Ebenum) for the tailpiece or string-holder, the surface of the finger-board, and the pegs. The following interesting description accompanies this series :- On the road from Munich to Insbruck, the last Bavarian population, is the small townlet of Mettenwald on the Isar. Situated at a high elevation at the entrance of the Alps, its agriculture is poor, and the inhabitants derive their livelihood principally from the forests where the Spruce Fir and the Beech predominate. The former yields in its wood the principal (resounding) material for musical instruments, and the whole of the male population of Mittenwald is occupied in this manufacture — the younger and infirm people through the whole year, the able-bodied at all times when they are prevented from working in the mountains. Every stranger passing this spot will be struck by the sight of hundreds of violins—tenors, violon-cellos, double basses, guitars, and zithers — hanging about the doors, in sunshine and wind, in order to dry the varnish. This branch of manufacture is some centuries old, dating from the time when the famous fiddle-maker, Jacobus Stainer, brought the art from Italy and established himself at Absam, near Insbruck. His pupil, Klotz, and his sons after him, were the first who carried on the manufacture of these instruments in Mittenwald, and it has gradually increased so much that at the present time an astonishing number of such instruments are sent nut from this locality to the whole world, viz., 15,000 violins, 400 violoncellos and tenors, 80 double basses, &c., annually. The manufacture of the single parts, their composition for an entire instrument, its adjustment and regulation, are taught in a practical school established in the reign of King Maximilian II., and skilful and experienced men are occupied in going from house to house to overlook the work, and help by their advice. Several tradesmen who carry on the sale of the instruments furnish the workmen with the wood, which must be carefully selected, dried for many years, prepared and cut with particular tools; the other materials are also supplied by them.

The genuine pattern of the most renowned Italian The genuine pattern of the most renowned Italian masters being procured, and every traditional particularity followed with scrupulous care, it is not rare to see produced here instruments of first quality, and manufactured with particular care, claiming to be of the highest merit, and equal to the old AMATI, GUARNERI, STRADIVARI, and MAGGINI. But the inferior qualities are asked for in the greatest number, and are supplied at astonishingly cheap prices.

ORCHIDS BETWEEN THE POMEROON AND THE ORINGO,—Orchids, as might be expected from the damp character of the district, are unusually abundant; but these are not very different from those of other parts of Guiana. Probably because the district has been less visited and less despoiled than many others; executed Orchids houses, which were appreciations. several Orchids, however, which were apparently once abundant throughout the colony but are now rare abundant throughout the colony but are now rare elsewhere, are here abundant. As an example of this kind may be mentioned Oncidium Lanceanum, which, common as it is in quasi-cultivation in the gardens of the coast, is now rarely to be seen in a wild state, except in this district, in which it is fairly abundant. One very beautiful little yellow Orchid (Oncidium iridifolium), occurring sparingly and in very small clumps on the Pomeroon, grows wonderfully abundantly, and in very much larger clumps, on the Barima. The plant is fan-shaped, like a tiny Iris plant, generally not more than an inch high, and as much across, from which riese, well above the leaves, a delicate stem, on which unfold, one at a time, many yellow flowers. Generally, each plant consists of one, or at most two, fan-like tufts of leaves, but on the Barima plants are to be found composed of a dozen or more tufts, but so small that one can hold the larima plants are to be found composed of a dozen or more tuts, but so small that one can hold the whole clump, root, and leaves in the hollow of both hands; and yet there may be on it, besides buds, from thirty to forty open flowers, each an inch long and three quarters of an inch across, of brillian yellow, and like, but of more brilliant tint than single florets of Oncidium altissimum. Another peculiar and somewhat puzzling Orchio cocurs in this district, resembling in the general habit of plant and leaf (though these latter are broader and of a darker shade). But just point a candida, but with a uendent wreath of (though these latter are broader and of a darker shade) Burlingtonia candida, but with a pendent wreath of greenish-white flowers, like a long, down-hanging spike of Mignonette, rather the wild English Migno-nette than the sweet kinds of gardens. A beautiful pure yellow (lemon-coloured) variety of Gongora is also noteworthy; a violet-flowered Sobralia grows, though sparingly, on some of the tree trunks; and in the shady creeks the lovely Stanhopea grandifora hangs down many of its great white delicate flowers. From "Timekri,"

The Meather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON.

D DAY.	EARO	4ETER.	TEMPERATURE OF THE AIR.						rome- tions om isher's les 6th ition.	WIND.	1
MONTH AND DAY.	Mean Reading Reduced to 32° Fahr. Departure from Average of 18 years.		Highest.	Highest. Lowest.		Mean for Day.	Departure of Mean from Average of so years.	Dew Point.	Degree of Humidity. Sat. = 100.	Average Direction.	RAINFALL
Mar.	In.	In.				0		0			Io.
13	29.93	+0.03	55.0	41.0	14.0	48.8	+ 7.8	43 4	81 }	S. : S. W.	0.0
14	29.95	+0.07	60 S	45.0	15.5	51,8	+10.6	45.2	78	s.	0.0
ıs	29.92	+0.05	68.0	45.5	22 5	56.5	+ 15.1	48.6	74 {	S.: S.S.E.	0.0
16	20 26	-000	68.4	44 1	24.3	55.5	+14.0	46.6	72 {	S.E.: S.S.E.	0.0
17	29.89						+ 13 2		76	S. S. E.	0 0
18	29.80						+ 12.2		87	S.	0.0
19	29.86						+ 6.3		88 {	S.: S.W.	0.0
lean.	20,80	+0.02	62.0	12.0		8 c2 8	+ 11.3		79	S.	0.0

- March 13 Fine bright day, cloudy at times, Fine night.

 14.—Fine bright day and night.

 15.—Very fine bright warm day and night.

 16.—Very fine bright warm day and night; warm.

 17.—Fing in early morning; fine bright day and night.

 18.—Very fine bright day, overcast at night.

 19.—Fine day, full macitly. Fine clear night.

London: Atmospheric Pressure.—During the week ending March 15, the reading of the barometer at the level of the sea decreased from 29.61 inches at the beginning of the week to 29.25 inches by 9 A.M. on the 10th, increased to 29.42 inches midnight on the same day, decreased to 29.26 inches by 9 A.M., on the 11th, increased to 30.16 inches by 9 A.M., and decreased to 30.11 inches by 3 P.M. on the 15th, increased to 30.13 inches by 9 A.M. on the 15th,

decreased to 30.07 inches by 3 P.M. on the same day,

and was 30. to inches by the end of the week.

The mean reading of the barometer for the week at the level of the sea was 29.77 inches, being 0.16 inch lower than last week, and 0.31 inch below the average of the week.

of the week. Temperature. — The highest temperature in the shade in the week was 68°, on the 15th; the highest reached on the 11th was 49°.5. The mean of the seven high day temperatures was 55°.3. The lowest temperature was 55°.5. The mean of the seven low night temperatures was 40°.6. The greatest range of temperature in one day was 22°.5, on the 15th; the smallest was 11°, on the 9th. The mean of the seven daily ranges was 14°.7. The mean temperatures were—on the 9th, 43°.7. The mean temperatures were—on the 9th, 43°.7. The mean temperatures were—on the 9th, 43°.7. The mean temperatures were—on the 9th, 43°.7.

on the 10th, 43°.4; on the 11th, 4°; on the 12th, 4°.3; on the 15th, 4°.8; on the 15th, 5°.8; and on the 15th, 5°.5; and these were all above their averages by 3°.2, 2°.8, 0°.3, 6°.5, 7°.8, 10°.6, and 1°; 1 respectively.

The mean temperature was 47°.5, being 6°.5 higher than last week, and 6°.6 above the average of

higher than last week, and 6.0 above the average of the week.

The highest reading of a thermometer with blackened bulb in vacuo placed in the full rays of the sun was 122°,5, on the 15th. The mean of the seven readings was 100°.1.

The lowest reading of a thermometer with its bulb placed on short grass was 27°.9, on the 12th. The mean of the seven readings was 32°.6.

Kain.—Rain fell on two days to the amount of 0.81 inch, of which 0.59 inch fell on the 11th.

ENGLAND: Temperature. - During the week ending ENGLAND: Temperature, — During the week ending March 15 the highest temperatures were 68°; at at Cambridge, 68° at Blackheath, 63°, 5 at Bristol and Leicester; the highest at Sunderland was 54°, and at Plymouth and Braddord 56°. The general mean was 60°, 5.

The lowest temperatures in the week were 30°, at Truro, 30°, 1 at Wolverhampton, 30°, 2 at Cambridge; the lowest at Brighton was 37°, at Blackheath 30°, 5, and at Plymouth 36°, 2. The general mean was 33°, 5, and at Plymouth 36°, 2. The greatest ranges were 38°, 3 at Cambridge, 31°, 5 at Blackheath, 30°, 8 at Blothor; the smallest ranges were 10°, 8 at Plymouth, 21° at Sunderland, and 21°, 8 at Blighton and Bradford. The general mean was 27°, 3.

27°.3.

The mean of the seven bigh day temperatures was highest at Blackheath, 55°.3, at Cambridge 55°.1, at Truto 54°.7; and was lowest at Sunderland, 47°.8, at Bradford 48°, and at Wolverhampton 48°.2. The general mean was 51°.4.

The mean of the seven low night temperatures was highest at Brighton, 41°.4, at Plymouth 40°.9, at Truto 40°.1; and was lowest at Wolverhampton, 34°.9, at Bloton 36°.1, and at Nottingham 37°. The general mean was 38°.5°.

The mean daily range of temperature was greater.

The mean daily range of temperature was greatest at Cambridge, 17°.6, at Blackheath 14°.7, at Truro 14°.6; and was least at Bradford 9°.7, at Brighton 9°.9, and at Plymouth 10°.5. The general mean was 12°.9.

9°.9, and at Plymouth 10°.5. The general mean was 12°.9.

The mean temperature was highest at Blackheath, 47°.5, at Truro 40°.5, and at Brighton and Cambridge 45°.4; and was lowest at Wolverhampton, 40°.6, at Sunderland 41°.6, and at Bolton 42°. The general mean was 44°.1.

Rain.—The largest fall was 0.81 inch, at Blackheath, 0.74 inch at Truro, 0.73 inch at Bristol; the smallest fall was 0.28 inch at Cambridge, 0.39 inch at Wolverhampton, and 0.40 inch at Nottingham. The general mean fall was 0.54 inch.

SCOTLAND: Temperature .- During the week end-SCOTLAND: Temperature.—During the week ending March 15, the highest temperature was 56°.8, at
Leith; at Dundee, Greenock, and Paisley the highest
was 52°. The general mean was 53°.7.
The lowest temperature in the week was 26°, at
Perth; at Aberdeen the lowest temperature was
32°.1. The general mean was 20°, 3.
The mean temperature was highest at Leith, 44°, 3;
and lowest at Perth, 40°.1. The general mean was
42°.1.

Rain .- The largest fall was 1.35 inch, at Greenock, and the smallest fall was 0.27 inch, at Leith. The general mean fall was 0.78 inch.

JAMES GLAISHER, F.R.S.

Answers to Correspondents.

"BOTANICAL MAGAZINE:" E. M. P. It is published monthly by Lovell Reeve & Co., Henrietta Street, Covent Garden. Price 31, 6d.

CINERARIAS: A. B. Only an ordinary sample, some distance behind the best. — 7. P. Kendall. Your strain of self-coloured flowers is above the average in quality, but still not equal to Mr. James' in substance and refinement of form.

LICHEN: S. B., Falmouth. Sticta pulmonacea.

NAMES OF FRUITS: T. Taylor. Josephine de Malines

NAMES OF PLANTS: John R. Stewart. Narcissus capax (Queen Anne's Double Daffodil).—D. H. Celsia arcturus.—C. IV. Libonia floribunda.—S. & Son., Bignonia speciosa, native of South Brazil.—Jone. r., Acacia sentis; 2, A. armata; 3, Phaius grandiolius; 4, Cheilanthes, no fruit; 5, Adiantum hispidulum; 6, Chamacranthemum, cultivated under the wrong name of C. Beyrichii; we shall hope to deal with it in these pages when it comes into flower.—A Constant Reader. Leucadendron argenteum, a dwarf greenhouse shrub.

ORCHIDS: T. B., Ghent. Cattleya Percivaliana, and most probably C. Trianæ var. from Popayan.—
V. S. N. L. N. Bifenaria Harrisoni, Maxillaria colax, and Lycaste sp. 1 may tell you that I am in the habit of sending stamps for a reply when I address those whom I do not know—a very recommendable system.

Consider Subscribers sending Post-Office Orders are requested to send them to the Publisher of this journal, 4t, Wellington Street, Covent Garden, and to make them payable to William Richards, at the Post Office, Drury Lane, London, W.C.

INTELLIGENT READERS, PLEASE NOTE: — Letters re-lating to ADVERTISEMENTS, or to the supply of the Paper, should be addressed to the Publisher, and NOT to the Editor,

CATALOGUES RECEIVED.

CHARLES TURNER, Slough-General Spring Catalogue CHARLES TURNER, Slongh—General Spring Changeur of Plants.

H. CANNELL & SONS, Swanley, Kent — Complete Descriptive List of Chrysanthemums.

JAMES DICKSON & SONS, 108, Eastgate Street, Chester —Farm Seeds.

R. B. LAIRD & SONS, 17, South Frederick Street, Edinburgh—Agricultural Seeds.

CHARLES VUYLSTEKE, Loochristi, near Ghent—Wholesale Trade List of Stove, Greenhouse, and Hardy Plants.

sale Irade List of Stove, Greenhouse, and Hardy Plants, THIBAUT & KETELEER, Sceaux (Seioe), France — General Plant Catalogue, THOMAS IMRIE & SONS, Ayr—Agricultural Seeds. DICKSON & ROBINSON, 12, Old Millgate, Manchester— Select Farm Seeds.

Markets.

COVENT GARDEN, March 20.

[The subjoined reports are furnished to us regularly every Thursday, by the kindness of several of the principal salesmeo, who revise the list weekly, and are responsible for the quotations. It must be remembered that these quotations are averages for the week preeding the date of our report. The prices fluctuate, not only from day to day, but often several times in one day, and therefore the prices quoted as averages for the past week must not be taken as iodicating the price at any particular date, still less can they be taken as guides to the price in the coming week. Eo.]

BUSINESS very quiet, with no alteration in prices. James Webber, Wholesale Apple Market.

Abutiloa, 12 bunches 2 0 - 4 0 Anemones, 12 bun 2 0 - 4 0 Mignoenties, 12 bun 3 0 - 9 Palagaciums, 12 sps 3 0 - 10 Carnations, 12 bins 1 0 - 3 0 Cyclamen, 12 blooms 0 3 0 0 Cyclamen, 12 blooms 0 0 0 0 0 Cyclamen, 12 blooms 0 0 0 0 0 Cyclame	COL PLOWERS.—AVERA	GE WHOLESALE PRICES.
	Abutilon, 12 bunches 2 o 4 o Anemones, 13 bun., 2 o 4 o Anemones, 12 bun., 2 o 4 o Arum Lilles, 12 bin., 3 o 6 in Arum Lilles, 12 bin., 3 o 6 in Arum Lilles, 12 bin., 3 o 6 in Arum Lilles, 10 o 10 bin., 10 bin., 10 o 10 bin., 10 bin	Marguerites, 12 bun. 3 o- 6 Mignonette, 12 bun. 3 o- 6 Mignonette, 12 bun. 3 o- 9 Narcissas (Paperwhite), 12 buches 3 o- 9 Permente, 12 bun. 6 o- 12

PLANTS IN POTS.—AVES	AGE WHOLESALE PRICES.
s. d. s. d.	Ferns, in variety, per
Aralia Sieboldi, doz.12 0-24 0	Ferns, in variety, per
Arbor-vitæ (golden),	dozen 4 0-18 0
per dozen 6 o-18 p	Ficus elastica, each 1 6- 7 0
- (common), dozen 6 0-12 0	Foliage Plants, vari-
Arum Lilies, dozen 8 0-12 0	ous, each 2 0-10 0
Azaleas each 2 6- 5 0	Genista, per dozen o o-18 o
Begonias, per doz 6 0-12 0	Hyacinths, per doz. 6 o- 9 p
Bouvardias, doz12 0-18 0	Lily of the Val , pot x o- x 6
Cinerarias, per doz. 8 0-12 p	Magnesiae Deine
Cyclamen, per doz12 0-30 0	Marguerite Daisy,
- Extra size, each 5 0-10 0	per dozen12 0-18 0
Cupania site, each 5 0-10 0	Myrtles, per doz 6 0-12 n
Cyperus, per dozen 6 0-12 0	Narcissus, per dozen 9 c-12 o
Dracæna term. doz30 n-60 o	Palms in var., each 2 6-21 0
- viridis, per doz12 0-24 D	Pelargoniums (show)
Erica, various, doz. 9 0-24 0	per dozen 12 D-24 O
Euonymus, various,	- scarlet, per doz . 4 D 12 O
per dozen 9 0-18 0	Primula, single, per
Evergreens, in var.,	dozen 40-60
per dozea 6 0-24 0	Tulips, per dozen 6 o- o o

FRUIT. -- AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Apples, ½-sieve 10- 50	Pine-apples, Eng., lb. r 6- 2 o — St. Michael's, each 2 o- 8 o
Cobs, per 100 lb 125 0-150 0	- St. Michael's, each 2 o- 8 o
Grapes, per lb 8 0- 10 0	Strawberries, per lb. 8 0-12 0
emons, per case 10 0- 14 0	

VEGETABLES .- AVERAGE RETAIL PRICES.

POTATOS --Kent Magnums, 80s. to rcos. per ton; do., Regents, 80s. to rcos.; Champions, 50s. to 65s. -- New: Jersey, 1s. lb.; French, 6d. lb.

LONDON: March 19.—Messrs. John Shaw & Sons, of 37, Mark Lane, report that there is a stendy business now passing in field seeds, the improved weather having naturally increased the sowing demand. Red Clover seed sells at the moderate rates current; white continues unchanged. There is more doing in Alsike, but Trefoils are neglected. Perennial and Italian Rye-grasses realise late quotations. Sanfoin is still in small supply. Tares meet a ready sale at the recent advance. Hemp seed is scarce and dear. There is no variation io Canary. Linseed firm.

CORN.

CORN.

At Mark Lane on Monday the Wheat trade was exceedingly duil, and transactions were only of retail extent, at prices for the most part in favour of buyers. Flour was very quiet, and the sales not of sufficient extent to affect quotations. Barley, though not in large request, was tarily steady in value. Beans and Peas were in good denand. Lentils, at 311. to 321. were 11. of 3d. lower. Maize was dull and barely supported.—On Wednesday there was barley sufficient business to test quotations of either Wheat or flour, and they were written cominally as on Monday, but with a weaker tendency. Barley, with light arrivals, was steady in value, and Alazie has there was not much passing in any position. Malzie has there was not much passing in any position, and Oats quantile. Beans and Peas steady in value, and Oats quantile. Hosens and Peas steady in value, and Oats quantile. Wheat, 371. vd.; Barley, 313. 3d.; Oats, 193. dd. For the corresponding period last year:—Wheat, 331. vd.; Oats, 221. 5d.

At the Metropolitan Market on Monday prices ruled lower by 2d, per stone for cattle generally, although the assortment was fairly suitable. Danish cattle sold at 4s. 6d, to 5s., and Swedish 3s. tod. to st. 4s., 4s. Sheep were equally dull of sale, and mostly 2d, per stone lower, except for very choice small; 6s. 6d, was the top price, except for very choice small; 6s. 6d, was the top price, except for very choice small; 6s. 6d, was the top price, for good Swedish. The pig trade was very slack.—Thusday's trade was much about the same as on Monday, business being very quiet. Beasts were perhaps a shade better; sheep dull, and calves and pigs sold slowly.

HAY.

HAY.

Tuesday's Whitechapel market report states that supplies were not large, but trade was very dull and rather lower for straw. Quotations:—Prime old Clover, 65t. to 1955; jest readow hay 80s. to 86s; inferior, 60s. to 75s; jest meadow hay 80s. to 86s; inferior, 40s. to 65s; and straw 28s. to 37s. per land. The demandance of the straw 28s. to 37s. per land. The demandance of the straw 28s. to 19s. to

POTATOS.

The Borough and Spitalfields Markets reports state that good supplies were on offer, but trade dull, as follows:—Magnum Bonums, 8or. to 1000.; Regents, 6or. to 801; Champions, 5or. to 602; and Victorias, 7or. to 852, per ton.—The imports into London last week consisted of 27 bags from Boulogne, 152 Hamburg, and 11 boxes from Malta.

COALS.

The following are the prices current at market during the week:—Ravensworth West Hartley, 145, 26, 1841 Walls End—Hetton, 145, 64; Hetton (1908, 135; 15an)-ton, 145; Wear, 136; Tunstall, 135; Tees, 145, 6d.; Tyne (unscreened), 115; Hulam, 136, 6d.; East Hartlepool, 136, 9d.; South Hartlepool, 136, 3d.

Government Stock.—Consols closed on Monday at 101 to 101 for delivery, and 101 to 102 for delivery, and 101 to 102 for the account. The final quotations of Tuesday, Wednesday, and Thursday, were 101 to 102 for delivery, and 102 to 102 for the account.

AMIES' HORTICULTURAL MANURE.

"BEST of all FERTILISERS,"

GOOD ALIKE FOR

FLOWERS,

FRUITS,

TREES,

GRASS, or

VEGETABLES.

Amateurs and the Trade are informed that the New Season's Make of this famous Manure is ready for delivery. It supplies incontestably, in its present form, the

BEST & CHEAPEST **MANURE**

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PRICES:-

BOXES-1 1b., 6d.; 21b., 1s.

		BAGS.		
7 lb.	14 lb.	28 lb	56 lb	1 cwt.
2/3	4/-	7/-	11/6	19/-

Larger Quantities cheaper.

Free Delivery of 1 Cwt. to any Station in England or Wales.

N.B.—Purchasers should see that all bags bear the Company's Brand, as a security against

Specially Liberal Terms to the Trade.

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NATIVE GUANO.

Extracts from the Eighth Annual Collection of Testimonials from persons who have used this Manure for Farm and Garden Crops:-

VEGETABLES, VINES, FRUIT,

KITCHEN GARDEN CROPS.

ALIGICIA UARIDEN URDES,
A. G. BARRON, Reyal Horricultural Sciency, Chimick,
December 18, 1883 — "Used for Cabbages, Celevy, Tomatols,
and other green Vegetables, also on Lawn Grass, Resulture
—Very favourable, manifest improvement wherever used, the
chage assuming a much deeper colour, and growth extended.
Without doubt a very valuable manure, and one easy of
amplication."

HV. CLARK, Head Gardener to His Grace the Duke of Mariborough, Elenhuim Palace Gardens, Woodstock, December 41, 1883.—'Used for Plant Growing, Fruitgrowing; also for Vegetables. Results:--Very satisfactory. For cheapness and general use your manure is invaluable."

THOS. CARLTON, Gardener to Sir C. H. Mills, Bart., Wilden ness Fack Gardens, Servenoaks, February 4, 1884—"Used for Vioes. Uelly ordinary stable-manue had been used to be supported to the servenoak of the serve

ALEXANDER BISSET, Gordoner to Sir J. Whittaker Rilse, Bart, Byftet, December 19, 383,—"Used for Grape Vines, Orchard House Culture, and Katchen Garden Cyng Grass Laod, &c., at the rate of 10 cwt. per acre, applied early in the spring. Results:—In all cases I have used it, it has proved highly satisfactory, both in fruit and foliage; the results abe enwooderfully good, which my employer can testify. I have used your Native Guano all ways, and it has proved the best I used, from its cooling nature, in all my experience of twenty years in England and Scotland."

EDWARD PEARS, Gardener to Mrs. Jerome, Holland House, Sutton Coldfield, December 14, 1883.—"Used for Potatos, Goioso, Celery, Cucumbers, Melons, Grape Vines, and Pot Plants. For Potatos and Omons I used, on the average, 5 cwt. per acre: oot hawing used your Native Guano before, i was afraid to give too much. Results:—Potatos and Omons, avery good crop joideed; Celery, very fine, gave it a little ach time of earthing up; Cucumbers and Melons, I find your Guano usits those first-rate; it does not burn the roots, no one coed usits those first-rate; it does not burn the roots, no one coed usits those first-rate; it does not burn the roots, no one coed suits those first-rate; it does used but for the roots, no one coed some very good fruit. I also used it for pot plants, and I coosider it a very valuable manure for any kind of pot plants."

SWEDES, MANGELS, &c.

JAS. DAVENPORT, Meaford Hall Farm, near Stone, December 13, 1893—" Used for Swede Turnips at the rate of 6 cwt, per arcs. Results: -About 19 tons of good sound roots to the arce. My roots were sounder than some in another field, with farmyard manure applied previous antuma, about 12 tons to the acre. Should say it is a useful manure, and cheap."

RICHARD FOWLER, Broughton, Aylesbury, December, 1883.—"Used for Swedes, at the rate at 5 cwt. per acre. esults:—Very good."

JOHN BETTLEY, Downhell Farm, Barton, Oxford, December 18, 1883.—" Used for Turnips and Swedes, at the rate of 3 cwt per ares. Results: -Excellent, giving every satisfacteroommend from the the tune of a capital metture, and discovered the commend it, more especially when mixed with a little superphosphate."

CHARLES BEESON, Glovy Farm, Fenn, Amersham, Bucks, December 16, 1883.—"Used for Swedes and Maogle Wurzel, at the rate of 4 cwt., per acre for Swedes, with burnt ash, and 6 cwt. for Maogels, with ditto. Results:—Swedes very fine crop and large roots; Mangels very good plant and large roots. I have used Native Guano for years, and have been every successful in taking prizes with roots grown where I applied it. I have taken five first Pitzes this year, 1883, being first in all the classes I showed in."

JAMES KITLEY, Farm Steward to the Rt. Hoo, the Barl of Derby, Wilter Fark, Hasleners, Surrey, December 14, 1883 — "Used for Traes, as the rate of 4 to 6 ovt. perca. Results: —Very good; could see to an ioch where the land was not sown. No other manure was used. The Native Guano was harrowed in with the seed, and I am well satisfied with the results."

GEORGE STONE, Cashio Eridge Farm, Watford, January 1, 1884—"Used for Swedes Results:—I was well sathsfied with the Native Guano. I used 5 to 6 cwt. to the acre; my Swedes were very good indeed. Send me 3 toos more; I shall give it another trial."

GEO. STRATTON, Princes Risborough, December 13, 1883.—"Used for Mangels, at the rate of 3 cmt. per acre. Results:—A very good crop. I have always had a good crop of Mangels after using the Aylesbury Native Guano."

H. WYATT, Walton Grange, Aylesbury, December 14, 1883.

—"At the Royal and Central Bucks Agricultural Show, held at Great Marlow in September Iast, I was awarded the First Prizz, value £, io, for the best general crop of roots of not less than to acres. And at the same show I was also awarded the First Prize, value £5, for the best crop of roots of not less than 5 Prize, value £5, for the best crop of roots of not less than 5 on the Broughbon Pastures and Walton Grange Farms, and were manured with Native Guano purchased of your Company."

JOHN COX, Coombs Farm, Hughenden, December 18, 1883.

—"Used for Maagel Wurel and Swedes, at the rate of 5 cw.,
per acre. Result: "One-fourth extra produce. I consider the
bulbs were much fiber, and cleager growth, and generally
sound."

JOSEPH HUTCHINGS, Forest Farm, Hansloje, December 20, 1833—" Used for a crop of Swedes, at the rate of cow, per acre. Tee to twelve loads of yard-macure, soward to the Market The Market Guano, where sown, has given me great satisfaction. I hope to be a customer text season,"

GRAIN, GRASS, POTATOS, &c.

AUSTIN BUTLIN, The Woodlands, Shipton, Lee, December 18, 1883.—"Used for Maogels, drilled under the seed on the flat. The land was manured from the farmyard in the autumn. Oats with Clover-seeds top-dressed at the rate of 4 cut, per acre. Results: -Oats and Mangels good. I never had a more promising crop of young Clover. I think it a good manute at the price."

ROBT. KEENE, Emmington, Tetsworth, December 15, 1883.—"Used for Mangels and Oats, at the rate of 7 cwt. per acre. Results:—Both crops remarkably good."

Rev. C. SOAMES, Mildenhall, December 14, 1883. —
"Used for Oats Mangel Wurzel, Potatos. Results:—Oats
very good, Mangel ditto."

D. T. sad W. H. BYFOED, Costalion, Surry, January, 5, 1884.—"Used for Oals at the size at Seven persons. Results:—Very good on poor land; 1918 not threshed, yet to give an account of quantity frown to the acre. We consider the Native Guano a very good top-dressing for spring Corn as far as we have tried it."

L: T. HAYNES, Upper Heylord, January 15, 1884—
"Used for Oats, Wheat, and Potatos, at the rate of 4 cwt. per acre. Results:—Oats yielding about 7/4 cp. pre acre; Wheat, about 3 cp.: Potatos, about 5 tons per acre. I was perfectly satisfied with the macure on the Oat cropt.

GEO. COOPER, Kingswood Lane Farm, near Aylesbury, January 2, 1881.—" Used for Wheat at the rate of 5 cwt. per acce. Results:—Had a very good crop of Wheat."

C. B. SELL, Leighton Buzzard, December 18, 1883.—
"Used for Barley at the rate of about 4 cwt, ter acce. ResultsGood Your Native Guano I believe good for top-dressing, and
general use. The difficulty is mixed gradeness to come into
general use. The difficulty is mixed gradeness to come into
trial. You must give each gradeour a bag and ask them to try
it and give you their opinion."

Captain GEORGE G. SANDEMAN, Roche Court, Salti-bury, Wilts, December 18, 1883.—"Used for grass at the rate of 10 cmt. per acre: Managels, Swedes, Potatos, at the rate of 9 cmt. per acre. Results:—Grass was much better in quantity and quality, Managels at the rate of 45 toos per acre, Potatos at the rate of 12 toos per acre, Swedes good. It was also used for Peas, Vines, Strawberries, with good results. Some Potatos were planted with farmyard manute, but those planted with Native Guano were equally 12 grood."

J. SIMMS, Weilington Terrace, Aylesbury, December 17, 1883.—"Used for grave at the rate of 5 cout.per acc. Results 18. Cot 3 cout.pt. acc. fice used to the period of the parish they never saw a better crop of grass in the field. I shall require some more in February."

JOSEPH FRANKLIN, Scottgrove, Thame, December 27, 1833 — "Used on old pasture at the rate of 6 ewt per acre. Results: -A good crop of hay. I cousider the A B C Maoure, if applied on grass land early in the spring, a good manure and showing good results."

JOHN COLLEDGE, Patchett's Hill Farm, December 21, 1883 — "Used for grass and Potatos, and garden produce generally, at the state of 6 cw., per acre for grass, and 8 cw. for Potatos. Results:—Grass, fair crop; Potatos and Onions, good. The early part of the season was not favourable for artificial manures, dry east winds prevailing."

At the Birmingham Show TWO SILVER CUPS and NINETEEN PRIZES were taken by EXHIBITORS who use NATIVE GUANO.

Price, £3 10s. per Ton, in Bags, at the Railway Station, Aylesbury.

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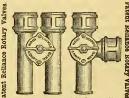
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GISHURST COMPOUND, used by leading Gardeners since 1850 gainst Red Spider, Mildew, Thrips, Green Fly, and other Bight. 1 to 2 ounces to the gallon of soft water; 4 to 16 ounces as winter dressing for Vines and Orchard-house Trees; and in lather from the cake against American Bight. Has outlived many preparations totended to supersed it. Boxes, 11.5, 27, and 10.6. 6.7.

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GARDEN NETTING (each piece 30 yards long).

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Fine Netting, \$500, pr. nay, 60, 5410. 72 in. 7500. 100, in. 100, id.

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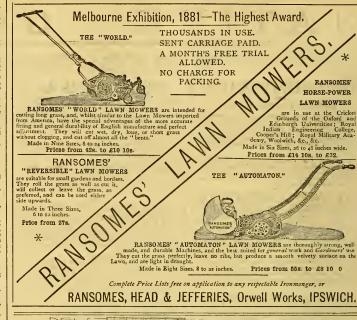
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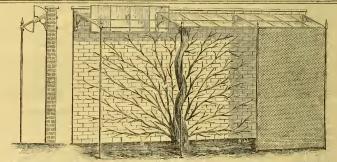
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VATSON'S LAWN SAND (the original
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Allows the trees to be exposed to showers.

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These Frames are 1 tinches deep in front ... 22 inches deep at back, and 22 inches in the centre. Front or back lights turn over. 5 set-opes are provided for ventilating. All painted due roost of best oil colour, the lights glazed with bost ar-oz. English glass.

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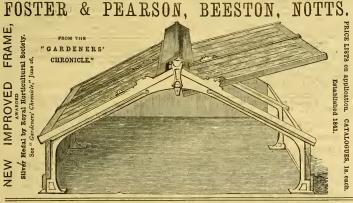


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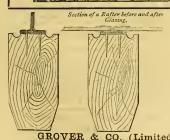
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This capital lute Implement is now coming into general use. It consists of one light but strong Steel Showel for marking out rows to plant, or for loosening up the ground after the plants are up. Also a small Steel Plough to be used for hilling up therows when desered, and a Cutter for exterminating weeds, and Kake for pulverising the ground. These pieces are made separate, and arached or detached in a moment by means of a sample fusterness, and the standard of th PATENT HAND GARDEN PLOUGH and CULTIVATOR

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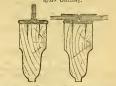
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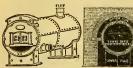


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March 14, 1884.

WANTED, as HEAD WORKING GARDENER, a married man without family. Must
horoughly understand Store and Greenbuse Plants, Meloos,
Cucumberstand Store and Greenbuse Plants, Meloos,
Cucumberstand Store and Flowersen Kitchandelening,
and bewell up in House and Table Decorating. Higher
and betwell up in House and Table Decorating, Higher
applications entertuned,—THOS, FILDES, Esq., Fair Lawe,
Lytham, Laocashire.

WANTED, in a private family, a HEAD GARDENER and WIFE, no children. Cottage and fuel. Church of England, and under 50 years of age.—R. D., Messrs. Terry, Stoceman & Co., 6, Hatton Garden, E.C.

WANTED, a GARDENER,—Must under-stand Conservatory and Fernery. He would have to elean boots, knives, and windows. Wage, 20x –State, by letter, age, qualifications, and length of character to M., 8, Claptoc Common, Upper Clapton, E.

WANTED, a SINGLE-HANDED GAR-DENER—married, without family; thoroughly up to Vines, Plus, Orchard-house, Conservatory, &c. — General FELLOWES, Harwood, Bournemouth.

WANTED, a SINGLE-HANDED GAR-DENER, for Hothouses, &c., oo Salary and Com-mission. Age under 30—Apply, before 10 A.M., or after 5 P.M., to A. C., 435. Fullham Road, West Brompton, S.W.

WANTED, a SECOND GARDENER.— Knowledge of Vines, Peaches, Stove and Greenhouse Plants necessary. Wages 17s., no extras.—The GARDENER, Brooklands, Broomfield, Chelmsford.

WANTED, a young man as UNDER GARDENER, 18 or 19 years of age, to live in the house.—Rev. THOS. O'GRADY, Hognaston Vicarage, Ashbourn, Derby.

WANTED, a pushing industrious man, as FOREMAN in a large place. Must be a good hand at Fruit and Plant Growing, Furnishing, &c., and have previously held a similar position. Apply, giving references, to E. BENNETT, Beeborough, Cork.

WANTED, an energetic and practical working FOREMAN.—Must have a thorough knowledge of Propagating, Growing, and Executing Orders for Roses, Fruit Trees, Shrubs, Carnations, Picotees, Fausies, & Freference will be given to one that has held a similar situation. State age and wages exoceted.—R. W. PROCTOR, Nurseryman and Seedman, Abguse Road, Chesterheld.

WANTED, AT ONCE, a young man from a good Nursery, as PROPAGATOR and GROWER of Soft and Hard-wooded Plants. State wages required.—T. JANNOCH, Lily Nursery, Dersingham, Norfolk.

WANTED, an experienced man, as GROWER of Pelargoniums, Bouvardias, and Cyclemeos for Market. Permanent situation to switable many Wages according to ability. None used apply that cannot produce character as to ability and sobriety.—TURNER BROS., Florists, Allerton, Liverpool.

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WANTED, a thorough competent MAN, to Grow Cut Flowers for Market; must also understand Vines, &c.—Will have whole control, with cottage.—Stea experience, wages, &c., to M. R., Gardeners' Chronicle Office, 41, Wellington Street, Strand, W.C.

WANTED, a trustworthy and careful MAN, accustomed to the Growth and Propagation of Hardy Fruits, Herbacous Plants, and Roses, in the open—State age, wages, references, &c., to Mr. LAXTON, Bedford.

WANTED, AT ONCE, an ASSISTANT Tomato, Cucumber, Grape Grower, &c.—State wages, &c., to Mr. E. BENNETT, The Vineyard, Potter's Ear, N.

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To Gardeners.

W ANTED, a few good JOBBING
HANDS, theroughly used to the work. Wages from
225. per week. EOURNE AND UNDERWOOD, Florists,
235. High Street, Camden Town, N.W.

WANTED, an active young MAN,
Potting and General Market Work. One used 1
London Trade.—Write, stating particulars, wages, &c
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WANTED, in a Market Grower's Nursery, make himself generally useful. Must be active, industrious and obliging. Good character indispensable.—B. T., Mr. Scorey, S. Viegar Vard, Catherine Street, Strand, W.C.

WANTED, TWO or THREE young MEN useful.—W. F. BOFF, 203, Upper Street, Islington, N.

WANTED, an OUTDOOR NURSERY HAND. Must understand Budding, Grafting, Training, &c. One preferred who could get out Orders, Pack, &c.—Particulars to EDWIN HILLIER, Winchester.

WANTED, in the Houses, a young MAN, (about 18 or 20), quick at Pottiog. Permaneot situation.—GEORGE EDWARDS, Balham Nursery, S.W.

WANTED, a young MAN, quick at Pott-ing and Tying.—W. ORPWOOD, The Nursery, Bollo Bridge Road, Acton. Middlesex.

WANTED, TWO young MEN for the Houses Wages about 18s. per week.—References to be made to EDWIN HILLIER, Winchester.

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GARDENER (UNDER).—Age 20; abstainer.
Six years' experience, Io houses and part outside if required. Good references.—W. FRANCIS, Wingfield Road, Walthamston.

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TOREMAN, in a good establishment.—Mr. GEESON, Gardener, Haldoo, can confidently recommend T. Lowton to any Gardener requiring a thorough practical and

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JOURNEYMAN, in the Houses, under a good Plant and Fruit Foreman.—Age 21; good reference. State wages. Bothy preferred.—H. S., 20, Queea Street, Ashford, Kent.

JOURNEYMAN, in the Houses, in a good establishment.—Age 20; four and a half years in present situation; can be well recommended.—C. PRYCE, The Gardens, Powis Castle, Welshpool.

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Prices of Donkey, Pony, and Horse Machines, including Patent Self Delivery Box, with Cross-stay complete, suitable for attaching to Ordinary Chaise Traces or Gig Harness :-

To cut so inches

	D0	NE	EY	and	i P	ONY	MACE			
			inch			• • • •		£14		
•	cut	28	inch	es	• • •		• • • •	16	0	0

					10 cat jo menes .				
cut 28 inches		16	0	0	To cut 36 inches .			26	0
cut 30 inches		18	0	0	To cut 42 inches .			30	0
ather Boots for Donkey		I	0	0	To cut 48 inches .		• • •	34	0
eather Boots for Pony		1	4	0	Leather Boots for I	lorse		1	9
The 26 and 28 inches can easily	be	worked	by	a Do	okey, the 30 inches by a	Pony, and	the larger	sizes	b

0 Horse; and as the Machines make little coise in working, the most spritted animal can be employed without fear of it running away, or in any way damaging the Machine.





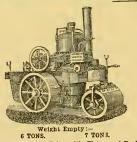


Specially designed to meet a want that has long been felt in cutting the overhanging grass on the edges of walks, borders, flower-beds, &c., and do away with the tedions operation of cutting with shears.

GREEN'S Patent ROLLERS, For Lawns, Drives, Bowling Greens, Cricket Fields and Gravel Paths, &c.

SUITABLE FOR HAND OR HORSE POWER.





6 TONS. Weight in Working Trim with Water and Fuel:-

Green's Patent Steam Road Rollers and Traction Engines combined,

Which are made in sizes of 6, 10, 121/2, 15, and 20 Tons weight, and both the Driving and Steering of them are noder the easy control of ONE Mao.

, They are snitable for Rolling Carriage Drives, Park Roads, Walks, Streets, Highways, and for General Road Making; Rolling Lawns, Cricket Flats, Parks, Re. They can also be used as Stationary Eogines for Stone Breaking, Wood Sawing, Pumping, Farm Purposes, and alther various work.

They are specially recommended to Noblemen, Gentle-men, Borough and Road Surveyors, Corporations, Local Boards, Highway Trustees, Contractors, Road Makers, and others,

Specifications, with Prices and Testimonials, furnished on application.

Weight Empty:-10 TONS 15 TONS. Weight in Working Trim with Water and Fuel: - 12½ TONS. 15 TONS. 18 TONS.

Delivered Carriage Free at all the principal Railway Stations and Shipping Ports in England, Scotland and Ireland.

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No Lawn Mower Manufacturer keeps so large a stock of Mowers as is to be found at our London Establishment, Surrey Works, Blackfriars Road, where purchasers can select out of several hundred Machines, of Hand, Pony, and Horse Power, and have their Orders supplied the same day they are received.

The above Machines are Warranted to give entire Satisfaction, otherwise they may be returned AT ONCE, free of cost to the Purchaser.

N.B.—Those who have Lawn Mowers which require repairing should send them to either our Leeds or London Establishment, where they will have prompt attention, as an Efficient Staff of Workmen is kept at both places.

Garden Seats and Chairs, and Horticultural Implements of every description, Wire Netting, &-c., &-c.

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SATURDAY, MARCH · 29, 1884.

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NOTICE to SUBSCRIBERS and OTHERS. Post-office Orders and Postal Orders should now be made payable at DRURY LANE.

THE GARDENERS' CHRONICLE
IN AMERICA.
The Subscription to America, including Postage, is \$6.35 for twelve Months.

Agent for America:—C. H. MAROT, 814, Chestnut Street, Philadelphia, U.S.A., to whom American Orders may be sent.

Philadelpha, U.S.A., to whom American Outers may be sent.

POYAL HORTICULTURAL SOCIETY,
South Kennington, S.W.
A Conference on the Species and Varieties of the Genus
NARCISSUS will be held in the Conservatory of the Royal
Horticultural Society at South Kennington on TUESDAY,
April v. 1884, at which flowers will be exhibited and Papers
read, after which discussion will be exhibited and Papers
and, set in the state of the Conference of the Conference,
and the survey of the Genus will take part in the Conference.
Communications respecting space required for the exhibits to
le addressed to Mr. A. T. M. RROY, Scarden Superintendent,
of lister than 10 pt. 18 pt. 18

ROYAL HORTICULTURAL SOCIETY, COYAL HORTICULTURAL SOCIETY,
South Kensigton, Sw.
The SCHEDULE of PRIZES and ARRANGEMENTS
for the SHOWS and MEETINGS to be held in the Conservatory during the current year is now ready, and can be had
on application to the SECRETARY, Royal Horticultural
Horticultural Society, Turcham Green.

CRYSTAL PALACE.
SPRING FLOWER SHOW,
FRIDAY and SATURDAY, April 4 and 5.
Entries Close March 28. For Schedules apply to
W. G. HEAD, Gardoe Superintendeot, Crystal Palace.

WINCHESTER HORTICULTURAL
SOCIETY.—The following arrangements have been
made for holding this Sessoris Shows:—
SUMMER SHOW, July 2 and 4.
CHRYSANTHEMUM SHOW, November 18 and 19.
SCHEDULES of PRIZES may be had on application to

R. PORTER, JOHN B. COLSON, Hon, Secs, 45, Jewry Street, Wiochester.

HORTICULTURAL EXHIBITION, to be held at the BOTANICAL GARDENS, SHEF-FIELD, JULY 24 and 25. Prize Schedules may now be obtained on application to Mr. J. EWING, Curator.

NORTHAMPTONSHIRE HORTICUL-The ANNUAL SUMMER SHOW and FLORAL FETE will be held August 2 and 4 (Back Holiday and preceding Satur-day). Schedules on ready. E. (COOKE.)... E. COOKE. A. FORBES, Hon. Secs.

NATIONAL CHRYSANTHEMUM
SOCIETY.
Royal Aquarium, Westmister, S.W.
SCHEDULE of PRIZES for 1884 now ready, and may be
had on application to WILLIAM HOLMES, Hon. Sec.,
Frampton Park Nurseries, Hackney, N.

Daffodil, Daffodilly, Daffodowndillies.

A DESCRIPTIVE CATALOGUE of more than goo sorts of DAFFODILS free on application.

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Forest and Ornamental Trees and Shrubs.

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COMPANY (Limited), Ediburgh, have an immense
Stock of the leading kinds of Seedling and Transplanted
FOREST TREES and SHRUBS, &c.—all in healthy condition and prices moderate. Special effers on application.

CUCHARIS CANDIDA.—Good Bulbs by the roo or rooo. The flowers of this free flowering species are extensively used for cutting. Price on application. Mr. WILLIAM BULL, Establishment for New and Rare Plants, 536, King's Road, Chelsea, London, S.W.

PELARGONIUMS, in 40-pots, to flower in April and May, best Show and Decorative varieties, 9r. April and Dray, U.S. Chilliper dozen, 653, per 103, GARAWAY AND CO., Durdham Down, Clifton, Bristol.

To the Trade.

To the

FIFTY THOUSAND DAHLIAS, Double and Single, dry roots. CATALOGUES on application. KELWAV AND SON, Langport, Somerset.

Gold Medal Begonias.

L AING'S CHOICE HYBRIDISED SEED,
all new and of unequalled quality. Scaled packets, free
by post—single, 12, 21 6d, and 52; double, 21, 64, 32 6d, 46,
5. TUBERS, mixed seculings, by Farcels Fost, 44, 67, 36
and JOHN LAING AND CO., Seedamen, Forest Hill, S.E.

VIOLETS.—10,000 sweet-scented deep blue Violet roots, many full of buds, guaranteed healthy and strong; Price, 50 for 12, 344, 100 for 25, 95. per 1000, all carefully packed and free; just the time for spring bedding. THOS. F. MAY, 44, North Street, Homcastie.

CREEPERS for Walls, Trellises, &c., in great variety. By planting what is suitable an unsightly object may easily be made beautiful. Descriptive L1ST and advice on application.
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S O UELCH AND BARNHAM,
Long Market, Covent Garden, London, W.C.,
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ACCOUNT SALES sent daily, and
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NOTICE TO SENDERS.—We have now a demand for EUCHARIS, STEPHANOTIS, TUBE-ROSES, LILY OF VALLEY, &c., also GRAPES, CUCUMERS, FRENCH BEANS, MUSHROOMS, &c. Guzden, W.C.

WANTED, a regular supply of CUT FLOWERS, ROSES, &c., for Covent Garden Market. All particulars to be addressed H. E., 158, Stamford Street, Waterloo Road, Londoo, S.E.

Marechal Niel Rose Blooms. WANTED, all through the season, the YY above, in large of small quantities. Good prices for good bloom.
CALLAS, EUCHARIS, White AZALEA, CAMELLIAS, ec. WANTED, specially for Easter.
W. DENMAN, Salesman and Horticultural Agent, Covent Garden, W.C.

WANTED, Maréchal Niel and Niphetos Cut ROSES, and ADIANTUM CUNEATUM, in quantity. Prices and consignments may be sent to GEO. W. TUBE, Florist, Kirgate Market, Leeds, which market value will be returned.

WANTED, Two SPECIMEN PLANTS of AGAVE AMERICANA (Green), 3½ feet, and Two of AGAVE AMERICANA VARIEGATA, 3½ feet. Write, with price and all particulars, to WM. WOOD AND SON, The Nurseries, Maresfield, Uckfield, Sussex.

WANTED, I dozen Double Flowering BEGONIAS, iocluding four Whites; 2-yr, old Bulbs, Price to
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Send sire and lowest price, cash, to
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ILIUM AURATUM.-Good, plump, sound Bulbs, £s., 9s., 18s., 18s., and 24s. per dozen; extra strong, 30s. and 42s. per dozen; extra cqualily low prices.

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ROSES-ROSES-ROSES -- Forty choice Pur Perpetuals sent to any address ou receipt of remittance for zts.; Purchasers' selection from 200 best varieties. List of names on application. Hundreds of testimonials. JAMES WALTERS, Mount Radford Nursery, Exeter, Devon.

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These world-famed Roses cannot fail to give the greatest satisfaction.

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POSES.—Standards, 2½ to 4 feet; ditto 1½ to varieties in cultivation of Hybrid Perpetuals, &c. Descriptive CATALOGUE post-free. THOMAS RIVERS AND SON, Sawbndgeworth, Herts.

Two Acres of Daffodils.

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CHARLES TURNER'S noted and extensive collections of the above are in the most robust health. If planted now a good bloom will be ensured. Purchasers leaving the selection to C. Turner will be liberally dealt with.

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FRUIT TREES and ROSES.—A large and
select stock is now offered for sale. The Illustrated and
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HAND F. SHARPE are offering their fine selected Stocks of all the best kinds of SEED POTATOS at very low prices, which may be had on application. Seed Growing Establishment, Wisbech.

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POTATOS,—Several toos of the above for Sale. Waranted true. Grown for three years oo red load from seed had
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SEEDLING POTATO—Rose Queen—Best Red Kidney in cultivation. Third Prize Seedling Potato Show, Northampton, 1882. zr. per pound.

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The Valuable Collection of Orchids formed by the

MR. J. C. STEVENS has received instruc-tions from the Executors to offer for SALE by AUC. TION, at his Great Rooms, 38, King Street, Covent Garde, W.C., on WEDNESDAY and TRUREDAY, April 2 and 3, at halfpast 12 of Olick precisely each day, without, the least half-past 12 o'Clock precisely each day, without the least reserve, the valuable COLLECTION of ORCHIDS formed by the late Robert Hanbury, Esq., The Poles, Ware. Amongst other face things will be found:— Vanda tricolor, extra

Cattleya labiata

Cattleya labiata
" gigas
" Mendelii
" Mossiæ
Acrides Fieldingi
" Lobbii
Angræcum sesquipedale
Phalænopsis amahilis
" Schilleriana
" Schilleriana

Cattleya labiata
9, 1938
9, Mendelii
9, Mossier
Arides Fieldingi
Angarecum esequipedale
Phal Sonderiana
9, Schilleriana
9, grandiflora
Peristeria elata, fine evars.
Sobralia xantholuca, flowers yellow, petals chocolate, thorat potate i, Madewallias, Dendrobiums, and Eolleas of sorts. &c.

New Holland Dwarf Blebox Plant.

New Holland Dwarf Pitcher Plants,
CEPHALOTUS FOLLICULARIS,
One of the most interesting and petty of the so-called
Carnivorous Plants,
TION, at his Great Rooms, 85, King Street, Covent
Garden, W.C. on THURSDAY NEXT, April 3, a comparament of ROOTS of the above, in splendid growing condition,
just arrived from King George's Sound. This beautiful little
plant succeeds well in an ordinary greenhouse.

Very Valuable Imported Orchids.

MR. J. C. STEVENS will include in his
SALE by AUCTION, at his Great Reoms, 38, King
Street, Covent Garden, W.C., on THURSDAY, April 3, by
order of Mr.F. Sander, valuable importations of ORCHIDS,
On view morning of Sale, and Catalogues had.

Flowering Orchida.

R. J. C. STEVENS begs to announce that his NEXT SALE of FLOWERING ORCHIDS will take place on WEDNESDAY, April 9. Gentlemen desirous of entering Flants for this Sale will please send particulars of Auction Rooms and Offices, 38, King Street, Covent Garden, London, W.C.

The Valuable Botanical and General Natural HISTORY LIBRARY of the late Robert Hanbury, Esq.

MR. J. C. STEVENS has received instruc-tions from the Executors to offer for SALE by AUC-TION, at his Great Rooms, 38, King Street, Covent Garden, W.C., during the month of AFRIL, the choice and valuable Edutancial and General NATURAL HISTORY LIBRARY of the late Robert Hanbury, Esq., of Poles, Ware. Further particulars in next advertisement.

The Down House Collection of Orchids.

R. J. C. STEVENS has been favoured with instructions from Six Win. Marriact to SELL by AUCT.

AUCT. The Down House Collection of Sell by AUCT.

Garden, W.C., in MAY, his well-known Collection of ORCHIDS. The plants have been selected with the greatest care for a period of more than 15 years, during which time the inferior varieties have been several times discarded. Among them will be found many of the finest varieties are decided. Among them will be found many of the finest varieties have been several times discarded. Among them will be found many of the finest varieties and the self-by the self

Important Sale of a First-class Collection of CARNATIONS, PICOTEES, PINKS, CLOVES of finest growth, 400 Standard ROSES, selected FRUIT TREES, hardy, AMERICAN PLANTS, CONIFEER, SHRUBS, choice imported and other FLOWER SEEDS, DAHLIAS in Dry Roots, PEONIES, &c.

MESSRS, PROTTHERGE AND MORRIS will SELL the above by AUCTION, at the City Auction Rooms, 38 and 39, Gracechurch Street, E.C., on TUESDAY, April 1, at 12 o'Clock precisely.
On view the morning of Sale. Catalogues had at the Rooms, and of the Auctioners, 8, New Broad Street, E.C.

wednesday Next.

A fine assortment of choice named CARNATIONS and PICOTEES from the celebrated collection of Mr. Charles Turner, Slough; 800 first-class named Standard ROSES from an English Nursery; DAHLIAS, GLADIOLI, LILLIUMS in variety, and miscellaneous choice Spring-blooming BULBS and PLANTS.

MESSRS. PROTHEROE AND MORRIS will SELL the above, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on WEDNESDAY NEXT, April 2, at halfpast 2 o'Clock precisely.

On view morning of Sale, and Catalogues had.

On view morning of Sale, and Catalogues had.

Friday Next,

1000 DENDROBIUM WARDIANUM,
1000 DENDROBIUM CRASSINODE.
800 DENDROBIUM ERNSONIÆ.
800 DENDROBIUM ERNSONIÆ.
800 DENDROBIUM HYRSIFLORUM.

MESSRS. PROTHEROE AND MORRIS
67 and 68, Cheapside, E.C., on FRIDAY NEXT, April 4, at
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Fulham, S.W.

In the High Court of Justice, Chancery Division.—R: The General Horticultural Company (John Wills), Limited.

M. E. S. S. L. P. AUCTION, General Horticular Company (John Wills), Limited.

M. E. S. L. P. AUCTION, General Company (John Wills), Limited.

M. L. P. AUCTION, General Company (John Wills), Limited.

Mr. Justice Chitty, on the Premises, The Nursery, Fulham Palace Road, Fulham, S.W., near the Hammersmith Railway Station, on TUESDAY, April 22, and three following days, at 72 o'Clock precisely each day, the whole of the choice sands of Falms, in 32 and 48-pots; magnificent specime Tree Ferns and Palms for exhibition, iculting some of the finest examples in the country; splendid plants of Lapageria alba and clean the country; splendid plants of Lapageria alba and clean the country; splendid plants of Lapageria alba and clean the country; splendid plants of Lapageria alba and clean the country; splendid plants of Lapageria alba and clean the country; splendid plants of Lapageria alba and clean the country; splendid plants of Lapageria alba and clean the country; splendid plants of Lapageria alba and clean the country; splendid plants of the Country of the

Valuers, 67 and 68, Cheapside, E.C. (Telephone No. 7809.)

Sale of Specimen Orchids.

THURSDAY, April 3, 1884, at 12 °Clock.

Within 79, George Street, Edinburgh, UABLE

HIGHLY IMPORTANY and VERLING BELLING THE STREET OF THE S

SMITH AND DEWAR, Auctioneers, 79, George Street, Ediaburgh.

79, George Street, Edinburgh.

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The Valuable FREEHOLD PROPERTY, known as the VICTORIA NURSERY, byke Road, Brighton—The property, which we sailed the property of the property of the VICTORIA NURSERY, byke Road, Brighton—The Property of the VICTORIA NURSERY, byke Road, Brighton Railway Station, and bas a frontage of 120 feet to the Dyke Road, with numerous Glasshouses, Forcung-Pits, Two-stall Stable and Caachbouse, and an Office and Store-room erceid thereso. The purchaser will have the opinion of taking the begiven on completion of the purchase.

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AND SON, Auctioners and Estate Agents, 168, North Street, Brighton, and 23 o'Restern Rood, Hove.

In a beautiful and healthful situation at Brenchley,

In a beautiful and healthful situation at Brenchley, Kent, about 1½ mile from Paddock Wood Station, and 6 miles from Tunbridge Wells.

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FOR SALE, the LEASE, GOODWILL, BYOKE and GLASS of a compact NURSERY, in a prominent position for a large Business. Age and bad health cause of offer.

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TO BE DISPOSED OF, the Old-established

BUSINESS, carried on by the late Joseph Tremble &
Son, Victoria, and The Castle Nursery, Penrith, Cumberiand,
The above will be sold on easy terms, and offers a rare opporture of the control of the control of the control of the control of the control

For particular apply to Mr. H. G. PATTINSON, Greenfield House, Penrith.

To Rose Growers, Nurserymen, and Others,
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NURSERY GROUNDS, known as Mitchell's Pitidown
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Dahlia, choicest single mixed		

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at Malliog Flower Show last year."

Petunla hybrida grandiflora, magnificent class, splendid mixed ... 17. 6d. and Petunla, choicest striped Plico X-rummondi grandiflora, very brilliant choices striped ... 6d. and Choices mixed ... 6d. and Choices mixed ... 6d. and Pitunla Chiwrick Red, splendid ... 6d. and Primula Chiwrick Red, splendid ... 6d. and Primula, Daniels choicest mixed 6d. and Primula, Daniels choicest mixed ... 12. 6d. and ... 6d. The Market 6d. And ... A MARKET 8d. And ..

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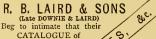
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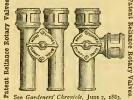
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LEAF MOULD, best, 12, per bushel.

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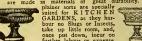
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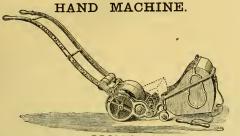
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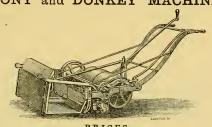
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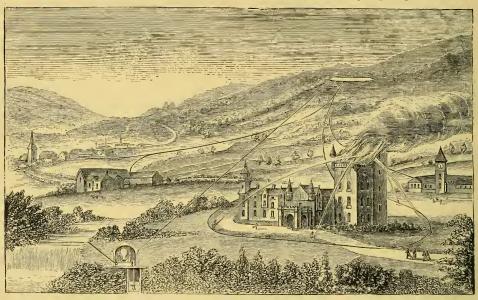
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From Captain TOWNSHEND, Winchant, February 10, 1877.—" In answer to your inquiry I am glad to say the Hydraulic Ram you sent me in November, 1875, is working exceedingly well, and gives no trouble. It will work when quite immersed, as it has been several times during this winter, forcing up water through a delivery pipe 900 yards I log at the rate of 80,000 galloos per day, although you only promised 60,000."

From J. SPENDER CLAY, Esq. Ford Manor, Lingfield, Surrey, August 9, 1880.—"In reply to your letter of inquiry I am glad to be able to say that the two Hydraulic Rams which you fined there are working satisfactorily, and that out of 1 gallons 3 quarts per minute, of maximum yield of the spring, they deliver to the top of my boase, distant a full mile from the spring, 4 gals, 10 per minute, or 1 sing gallons per 2 ghours, heng 2 ros gallons show the quantity you guaranteed.

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assing unrough, thus gring 77 per cent, of usefur elect.

From Mr. T. BARHAM FOSTER, C.E. 2,3 folin Dalion Street, Manchester, October 12, 883.—" Dear Sir,—I have tested the Ram you contracted to fix on the Hints Estate, Stafford-hire, for James Chadwick, 882, to force 1,000 og allons per day of spring water through 800 yards of delivery pipe, to an elevation of 208 feet, whilst worked by river water falling 5 feet 5 inches, and am pleased to had that when at full power the Ram sends up 13,500 gallons per day to the eight and distance nagued, and though the Ram is now adjusted to work at only three-fourths its ower, the work done represents over 5 per each of useful effect.

From HORATIO R. B. PEILE, Esq., Commissioner to Sir Michael Shaw Stewart, Bart.
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The smallness of the driving water—"If gallous per minute—"is not more woulderful than the large
proportion of water it sends up, viz., 720 galloos per day, through about 400 yards of delivery pipe,
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From FRED. J. TURNER, Esq., Agent to His Grace the Duke of Portland, Mansfield Wooddonse, August 20, 1883.—"Dear Sir,—I have much pleasure in stating that the Hydraulic Rams which you erected last; year for His Grace the Duke of Portland, at Lyadhurst, near Mansfield, and at Skeldon, Ayrshue, are working very well, and they are most satisfactory in every way."

and at Skeldon, Ayrshue, are working very well, and they are most satisfactory in every way."

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you promised to a height of 1 to feet, and distributing a supply to a farm and several cottages on
the way. I have pleasure in recording my caliure approval of the work.

From Sir A. WOODIWISS, The Pastures, Derby, January 15, 1883.—"Dear Sir,—In reply to your caquiry, I have much pleasure in informing you that the Hydraulic Ram you supplied and fixed for me in July last is working as a satisfactorily as could be wished, and has fully realised my expectations, and I have no hesitation in saying it is a decided success."

From Sir ROBERT MENZIES, Bart, of Mensier, Rannech Lodge, Rannech, August 20, 180,—"The Hydranlic Ran which you fixed for me to supply water to Rannech Lodge extreme distance the water is carried is 2ff with a fixed fully to the certain distance the water is carried is 1ff wile, and it is raised fully too feet, and though the elevation of the two houses are different, there is a regular supply of 7 quarts per minute to each house, which has never ceased since the Ran was set agoing, about three months ago. Your Ran took the place of one previously tried on the same spot, and which did not succeed, and was in fact a complete failure."

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THE

Gardeners' Chronicle.

SATURDAY, MARCH 29, 1884.

THE KEW MUSEUMS.

N OT one but many and frequently repeated visits must be paid to Kew to realise the enormous amount of material there accumulated and classified. The museums alone demand prolonged examination-and there are three of them-to say nothing of Miss North's picture gallery. Very soon life will be too short to gain a grasp of what there is at Kew! Those who wish to refer to special subjects appreciate the way in which the objects are classified for ready reference, and their knowledge enables them readily to find what they are in search of, while the conrteous aid of the assistants is always at the service of the student. But for the public desirous of obtaining a general idea of the treasures at Kew, and the reasons why they are collected and brought together some guide-book is indispensable. For the larger of the three museums, that immediately opposite the Palm-stove, a guide has been recently issued which appears likely to supply just the informa-tion required by the casual visitor, and to put those desirous of further information on the right track to obtain it.

"The object of the musenms," we are told, "is to show the practical applications of botanical science. They teach us to appreciate the general relations of the vegetable world to man. We learn from them the sources of the innumerable products furnished by the vegetable kingdom for our use and convenience, whether as articles of food, of construction and application in the arts, of medicine, &c. They suggest new channels for our industry; they show us the variety in form and structure presented by plants; and are a means of direct instruction in most important branches of useful knowledge. We see from them the particular points upon which further information is needed, especially as to the origin of many valuable timbers, fibres, and drugs, in order to perfect our knowledge of economic botany; in brief, the museums show us how little, as well as how much, we know of the extent to which herbs, shrubs, and trees contribute to our necessities, comforts, and numberless requirements."

The Museum No. 1, to which exclusively the present guide refers, contains the collections illustrative of the products, &c., of the Dicotyle-donous and Gymnospermous divisions. The arrangement is eminently practical, the con-tents being systematically arranged, numbered, and labelled, while maps and occasional appropriate illustrations greatly facilitate the task of the enquirer. A book of reference is a good thing no doubt, and often is the only means available; but the information given by a museum like this, carefully arranged and correctly and conspicuously labelled, is, of course, incomparably better. Such a museum, also, is of value not only directly from the point of view of economic botany, but it affords most valuable indications into the social life, habits, and history of the nations of the world, civilised and

uncivilised. Under the head of Cotton, for

instance, we find not only illustrations of the plants supplying the raw unaterial and samples of the manufactured product, but specimes showing the use of Cotton by nations now no longer in existence—as, for instance, in the case of cotton cloth from Peruvian mummies.

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Then, as illustrations of our own history, we have the tinder-box and tinder, which were in universal use in this country within the memory of many still living, but which are entirely superseded by the lucifer matches, the material for which latter are in their turn shown in the cases devoted to coniferous products and manufactures. Side by side with the now obsolete tinder is the cotton-cake, produced from the crushed seeds of the Cotton, and used as food for cattle—a comparatively recent application of this most useful genus of plants. Similarly the cases devoted to the rubber and caoutchout producing plants of various orders illustrate another phase in our national history, or rather in the history of civilisation.

It is thus seen how deep and how wide are the interests attaching to these museums. Where all is so admirable it is difficult to suggest improvement; but in any future rearrangement it would be worth while considering whether it would be practicable or desirable to effect a more complete separation between the specimens illustrative of structure or classification and those of purely economic interest. We would not advocate the removal of any specimens from their appropriate cabinet, but merely their allocation on separate shelves. We would suggest also that the claims of horticulture should, if practicable, be more fully recognised by the exhibition of dried specimens or pictures of the plants from which cultivated varieties have become developed. A specimen of a wild Pelargonium or Begonia side by side with one of the most "improved" modern garden varieties would be a valuable means of instruction.



BLECHNUM RUGOSUM, n. sp.

FRONDS linear-lanceolate, acuminate, about a foot long, the surface rugose, and covered with glandular hairs, pinante, the pinnæ with a very short stalk-like base below where the frond is searcely narrowed, adnate in the middle parts, and in the upper portion confluent into longish attenuate apex; pinaæ oblong, blunt, or sometimes abruptly acute, falcately curved, the lower ones shorter and stightly deflected, unequal, and cordately rounded at the base, the anterior side subauriculate; sort linear, medial, extending from the base nearly to the apex of the pinna; indusium narrow, entire, glandular, hairy; stipes 3 to 6 inches long, brown, with a few rusty ovate and lanceolate acuminate scales near the base, densely clothed above, as is the rachis, with short glandular hairs.

A very distinct-looking evergreen Fern, remark-able for the opaque palish green colour, and the harsh-feeling rugose surface of its prettily arcuate fronds. It is of moderate growth, about equalling the smaller forms analogous to B. occidentale, such as B. cognatum, to which it is, no doubt, related. has a short, erect caudex, from which the fronds rise to some 6 or 7 inches in height, the tips spreading out to a breadth of 15 to 18 inches. The stipes are 3 to 6 inches long, glandular pubescent, dull brown in the lower part, this colour extending to the rachis in the older fronds, the basal inch or two invested with acuminate reddish-brown scales. The linearlanceolate fronds are scarcely narrowed at the base, and run out into a long attenuate or caudate undivided apex, the lamina being from 7 to 9 inches long and 11 to 2 inches broad; they are distinctly pinnate, the pinnæ in the centre of the most developed fronds rarely exceeding 1 inch in length, the lower ones about half an inch apart, the upper ones gradually becoming closer; these pinnæ are oblong, blunt, or bluntish, sometimes slightly falcate, occasionally a little irregular at the edge, as il depauperate, the surface hard and rough, marked by numerous depresas if irregular lines and points had been roughly inscribed on both surfaces, which, as well as the rachis and margins, are furnished with short stiff glandular hairs. The fructification consists of two

lines of spore-cases lying closely alongside the costa, and extending from the base nearly to the apex of the whole of the pinner, running out into a similar double line in the caudate apex. The rachis is densely glandular, hairy. The rough, uneven, rugged surface and harsh texture of the frond are very peculiar.

Doodia Harryana, n. sp.

Fronds dwarfish, pinnate, dimorphous; sterile ones shorter, spreading, membranaecous, linear-oblong acute, the pinnae oblong, blunt, the lower ones distinctly stalked, with a blunt auricle on the anterior, and sometimes also on the posterior base, so as to become subhastate, serrate, the veins once or twice forked, free, with club-shaped apices terminating opposite the serraters just within the narrowly marginate edge. Fertile fronds taller (about 10 inches), erect, lanceolate, with an attenuated apex, stouter and firmer in texture than the sterile, the pinnae distant, the middle ones x inch to x inch long, narrow linear, obuse, serrate, with the base autriculate, especially on the anterior side, the auricle sometimes separated into a lobe, the upper ones adnately decurrent, the sori also running down the sides of the rachis; sori occupying the whole length of the pinnae and of the attenuated apex; indusion narrow, arcuate, becoming reflexed; caudex short, erect; stipes short, purplish at the base, and, as well as the rachides, slender and bearing a few scattered hair-scales.

This is an exceedingly elegant evergreen greenhouse Fern, ol dwarf stature, closely allied to D. caudata, but of a stouter and firmer texture, and of somewhat larger growth, the fronds reaching from 8 to 10 inches in length, and assuming a gracefully spreading character. The caudex is short and erect, throwing out on all sides the dark glossy green fronds, which have a lanceolate outline, with a long acuminated apex, short stipes, purplish at the base, and a slender green rachis. Like those of D. caudata, the fronds are dimorphous, but the plant is larger, and the fertile fronds are spreading, instead of being erect. The sterile smaller fronds have the lower pinnæ shortly stalked, bluntly oblong, with a small blunt lobe on each side of the base, the upper ones becoming larger and sessile, and the uppermost adnate. The fertile fronds have the pinnæ more distant, the lower ones stalked and hastate, the blunt linear pinnæ and the hastate base being alike soriferous; the pinnæ in the middle part of the frond have shorter and shorter stalks, and have the basal lobes smaller, gradually becoming adnate and at length decurrent, every portion to the very apex being covered with sori, having the usual Doodioid involucre. The venation in the fertile frond is distinctly Doodioid, while in the few sterile ones the coalescent veinlets are rarely pro-duced, though often indicated. Though resembling ouced, though often indicated. Though resembling D. caudata, it is a distinctly bolder plant, and likely to be more useful for decorative purposes—its aspect, as we have said, being extremely elegant. The plant appears to be of garden origin, probably the produce of a sporting spore. T. Moore.

MASDEVALLIA MOOREANA, n. sp. "

A very interestiog Masdevallia, nearest to Masdevallia elephanticeps, but smaller by one-third in all its parts. It has a flower 3 inches long, yellowish or light green outside, with greenish darker nerves, a reddish hue under the lateral sepals. The lower lip formed by the lateral sepals is deeply blifd, with long triangles and well developed tails, their inner surface being very rough, all nearly chocolate-brown. The upper sepal has a very short triangular blade and a very long tail. The petals are rhombic, with a strong ridge in the middle line. Lip oblong, nearly covered with asperities. Bract narrow, much shorter than the stalk of the ovary. Peduncle and stalk of a very yellowish-white, with numerous small reddish freekles. Leaf exceeding a span in length, oblong ligulate, bluntacute, with a narrower petiolar base.

acute, with a narrower petiolar base.

The first flower I obtained was quite alarming. Its odd sepal had a very broad tail. I asked for a second, and it had the tail narrow as it is in all the affinity. I had it from my excellent colleague, the Curator of Glasnevin Gardens, Mr. F. W. Moore, whose name it justly bears. H. G. Rehb. f.

GLASNEVIN BOTANIC GARDEN. — The number of visitors to these gardens last year (1883) was 326,329, showing an increase of 28,263 over that of the preceding year, and of no less than 76,418 over the attendance of 1881.

GLADIOLI.

CULTURE AND TREATMENT OF IIYERIDS OF G. OANDAYENSIS.—As there are some material points in which I differ with a writer, p. 285, in a recent issue of the *Credeners' Chronicle, when treating of Gladioli, and as the present is a good time to make a planting for those who have not hitherto essayed their growth, a few observations on culture and after-treatment—essentially an important point—may be *apropos*. To make my remarks consecutive, I propose placing them in the following order:—

Gladiolus Disease. - I deal with the above hybrids first, because if a grower succeeds with them he may be sure of doing so with the hardier G, brenchleyensis; while G. ramosus, G. Colvillei, &c., once planted take care of themselves-often increase and multiply so as to become a nuisance. The writer referred to says, "directly the least sign of disease appears in the beds, pull them up in toto and burn them, and thus so far put an end to it." Well, this recommendation has, to me at least, the charm of novelty, and seems to proceed on the assumption that what is called the disease-I must guard myself from admitting any disease, at least until something more definite is applied than that generic word-is contagious, and that therefore it should be stamped or burned out. I commend the point to Mr. Worthington Smith, as it may be a fungus he means, but so far as my experience goes—and I have in my mind the most expensive and highly developed hybrids—I admit no contagion and no disease. I am satisfied with my success, and do not think the loss of one or two in a score is enough to flaunt a scarcecrow with the label "disease, and, for fear that was not enough, to put "contagious" before it. Those who wish for a glorious autumn flower, which will favourably contrast with the tints of the finest Orchids, will do well not to be afraid to spend some money on Gladioli because some one has cried out "disease" or "failure." The road to success is often that of failure at first. I have had Duchess of Edinburgh for three successive years, with a spike containing twenty-two flowers, and each flower you could run your closed hand into, fully 6 feet high, and one that bloomed late—the end of November—brauched off into three spikes. James McIntosh, started in a pot in a cold frame, bloomed in July, and another, planted later, in the be-ginning of November; so of Democedes, Helenor, Dr. Hogg, and Madame Desportes. Now, if the corms of those, and dozens of others equally fine and as highly developed—and I might challenge any man to name finer—instead of getting diseased or degenerating, actually increase, and give year by year more magnificent spikes, am I not justified in having my doubts about those bugbears? While I write thus confidently of my own experience, I am well aware that "Delta"-whom I implicitly credit-has told in a contemporary how Mr. Banks, of Sholden Lodge, near Deal, after losing 50,000, had finally to give up their culture. Before I part from this view of the

subject, I must refer to

English and French Corms.—I regret to find such
excellent authorities as Mr. Douglas and "D., Deal," seeming to favour the latter-especially Souchet's. This is not my experience, and though an Irishman, I am proud to he able to give the preference to those English-raised. I am an humble individual, and my collection probably does not exceed 500, so I will collection probably does not exceed 500, so I will take other testimony. One of the most successful growers in Irelavd is J. F. Lombard, Esq., Dublin (Rathmines), who has won the Cup at the Royal Dublin Society's Horticultural Exhibition for several years. He told me there last September that he had tried every grower among French raisers, and had finally settled down with our countrymen, Messrs. Kelway, of Langport, Somerset. At the same exhibition Messrs. Drummond showed, for Vilmorin, Andrieux & Co., a stand of those hybrids, but it will be in the recollection of the thousands who saw them side by side that they were nowhere beside Mr. Lombard's, or in the really splendid stand shown by the Rev. Mr. Tymons, Baskin Hill, Dublin. I must remark in regard to this last collection that some of the finest spikes were seedlings raised by the reverend gentleman himself, so that had an illustration of my preference for the former to the latter without going as far as Langport.

If I am not to take up more space than you are likely to have to spare, I must turn to—

Culture.—My advice would be, let every lover of flowers try lo grow the Gladiolus. There is an addi-

^{*} Masdevalila Mosreana, n. sp.—Aff, M. elephanticipiti; minor; folio a petiolari basi oblongo ligulato obtuse acuto; pedanculo uniforo; bractae pedicello bene breviori artic cupula brevi, mento obtusangulo, triangulo, impari breviori in caudam longam extenso, triangulio, paribus bene longologo apperio in caudas brevio extensi; repais rione in colongo obtuso asperio.—Cl. 7, W. Mooreeficata. H. G. Rebs. J.

tional zest, because success is said to be problematical, that should lure the courageous. The expense need not deter the humblest, and increase can be tried by seed and hybridising, but more certainly by "spawn, even if one cannot afford to add to their collections every year. I never considered there was any mystery about the method of attaining reasonable success, at the same time I am inclined to think both aspect and soil (natural) has something to say in the matter. Kelway succeeds so well, to my mind, because of the large percentage of sand, even though comminuted and seemingly imperceptible. Sand around the corm, above and below, I make a sine qua non, and never plant a corm without it. I would strongly recommend that you send the stem, or great flagger-like leaves for analysis, and see the relative amount of silica Gladioli require. In this you might have the secret of the unaccountable failure with some growers.

I have tried this year and last some corms in pure drift sand alone, and the wonderfully vigorous growth made would simply astonish you. Indeed, I can readily lift some of my transplanted corms, thus started in January and transplanted a month ago, and send them to you should you so desire. Another thing I noticed is that a few of those have thrown the stems above the ground already—Anthony Waterer, for instance—and, contrary to what is usual, they seem so strong and vigorous that frost (we have had a few degrees lately) seems to do them no harm.

I plant from February to April; some of Kelway's best and newer hybrids have not been in the ground yet. Perhaps you will permit me to digress here, to say that though I have mentioned Messrs. Kelway more than once, and though they have probably the finest and largest collection in the world, I have a distinct recollection of the magnificent spikes raised and shown from Newcastle at the Manchester International Exhibition, and I am aware as far north as Dundee Messrs. Laind & Sinclair are acclimatising for their locality Messrs. Lemoine's new hardy hybrids. There is, therefore, to my mind, no part of the British Isles where Gladioli, and some of the finest, may not, with a tolerable chance of success, be tried.

The beds and borders where I plant are naturally rich. This season I incorporated with them about loads of a weed-compost, last October, twenty turned all out and dug deep, giving now perhaps a uniform depth of 3 feet of prepared soil. Roses, Dahlias, Pæonies, &c., are planted at intervals in front, and the Gladioli at the back, being the tallest, As they are gross feeders, I bury beneath each corm, but not at present touching, a quantity, say a spadeful, of very rotten old manure, some soil over that, then the corm surrounded above and below with a large handful of common river or drift sand; cover up, so that the corm may be 2 or 3 inches from the surface. I should have said I consider a southern aspect, and, if possible, a slope, very desirable. It is of vast importance to feed the plant after the flowering is over, as well as before, with liquid manure; and of considerable importance also to remove the seed-pods if you do not want them, and if you do, leave only two or three to each spike. Having already exceeded my intended limit, storing must stand over, W. J. Murthy, Clonmel.

HYACINTHS, NEW AND OLD.

HAVING been a grower and exhibitor of Hyacinths for competition during the last fifteen years I have often felt desirous of growing some of the new varieties for the purposes of exhibition as well as for home decoration. Some of them I have tried, but I cannot say the result has been entirely satisfactory. Not a season passes without new varieties of IIya cinths being exhibited in considerable numbers, and apparently distinct in colour or better in quality than the older varieties. Many of them receive First-class Certificates-a guarantee that they are thought to be better by those best qualified to judge of their merits. I visited Messrs. Veitch's collection at Coombe Wood a few days before the plants were exhibited, for the purpose of carefully comparing the new or recently introduced varieties with those of a much older date, and in justice to our old and tried friends I am bound to say that the new ones did not endure the ordeal so well as I expected.

Taking the single light blue varieties first there were several seedlings not yet named which will have to be grown again before an opinion can be passed on their merits. There were two named ones, however, which deserve very high commenda-

tion. Electra, a superb variety, with an immense spike of large finely-formed flowers of a pale blue, and quite distinct in colour. Lord Derby Improved, of which there were two good spikes, did seem in comparison to be superior to the first of that name, which is also a very fine clear light blue variety. Princess Mary of Cambridge forms the most stately spikes of all this light blue section, and it is second to none in the form of the bells. Ctar Peter is distinct and good. Enchantress is very distinct, the tips of the petals being spotted and clouded with a deeper blue. Grand Maitre forms a large handsome spike, the centre of the petals being of a deeper blue than the others.

Amongst the dark blue varieties, taking all the points, probably none excel King of the Blues. Every bulb of this variety may be expected to produce a good spike. General Havelock, a black-blue variety, that can always be depended upon. Marie, a very old sort, of a peculiar purple-blue colour, is well to the front. It must be admitted that the following new varieties in this class hold a foremost Souvenir de J. H. Veen is the best of them. This year, as well as last, nearly every spike was good, and the colour a beautiful distinct deep purple-blue. The Sultan has massive bandsome spikes of dark blue flowers, with large pips. Masterpiece is now plentiful enough to be put into the catalogues; it is one of the most dusky Hyacintbs ever raised, forms a neat spike, but it is not large enough. I was pleased to see Prince of Wales amongst the dark blue varieties; I exhibited it for the first time at South Kensington eight years ago, and gained a Certificate for it; it is bluish-purple, with a wbitish eye, bells finely formed, and compact spike. Double Prince Albert is a fine variety, darker than Laurens Koster in colour, and quite as good in other respects. Lord Mayo is very fine this year, it is a reddish-purple flower, with white centre and well shaped bells, but as a rule the spikes are too small.

The best and most constant of all the red Hyacioths is Koh-i-noor; it is semi-double, has large, finely formed bells and a splendid pyramidal spike of rosy-red flowers. Von Schiller is an old and constant favourite, always giving good spikes. Lord Macaulay, deep red, does not hold its position; the flowers are generally too much crowded, but the pips are well formed, and it sometimes gives an exhibition spike. Princess Helena, pale rose, forms a long handsome Garibaldi sometimes gives an immense spike of bright crimson flowers, and it is very desirable for its deep colour. Vurbaak is not in the collection this year, but it is unequalled for its bright reddish-crimson colour; good bulbs of it are not easily to be obtained. La Joyeuse, rosy-peach, forms a very stately plant; the spike is not usually compact enough, but, nevertheless, it is a very distinct and good Hyacinth. Piok Charles Dickens seems to be a sport of that well known light blue variety; it is exactly like it, except in colour. General Roberts, a distinct deep clear rose-coloured variety. La Franchise has a good many of the characteristics of the old Grandeur à Merveille, and has even larger bells, which are rather paler in colour. The most striking in colour of all the red varieties is L'Incomparable; the flowers are quite scarlet in colour, spike medium-size, and very neat. Distinction is quite unique in regard to colour, The spikes are larger this year than I have ever seen them; the bells are large and well-formed, of a deep crimson colour, with a dark band in the centre of each segment of the petals. Princess Louise is a very good double red, generally forming a compact spike. La Grande Concurrente, double pink, well deserves a good place, as also does a variety named Van Hobooken, with very double pale pink flowers and large spike. Duke of Albany is also a distinct and good double red.

It is rather remarkable that very few good single white Hyacinths are brought to our notice, except varieties that have been in circulation for many years. It will be very difficult indeed to beat La Grandesse, it is a splendid Hyacinth, forming a massive, compact spike of large well-formed bells. I grow but three white varieties—the above, alba maxima, and Mont Blanc. The last-named variety I place second in merit, but it has the fault of producing cockscomb spikes of flowers too much crowded. Baroness Van Tuyll is a very pretty white, and Snowball has the best formed bells of any of them, but it generally gives a spike formed of closely compacted flowers, which is seldom symmetrical or pleasing. In the collection was Florence Nightingale, a very good

double white variety. Amongst the yellow, straw-coloured, or buff varieties, some recent introductious hold a prominent position. I feel inclined to place King of the Yellows at the top of the list; it forms as good a spike as any of them, and the colour is better. Ida is very fine, and sometimes gives a grand spike. Grand Due de Luxemburg forms a tall good spike, but this and Bird of Paradies seldom flowers without many of the bells near the top of the spike being tipped with green. Ohelisk is also a distinct and good yellow variety, and Marchioness of Lorne is the best of the buffs; the segments of the petals are sometimes striped.

A rather new variety, named Challenger, forms a distinct feature in the collection. It is described as violet, but there is a coosiderable suffusion of red and purple in it. There are very few flowers of this colour. Sir Henry Havelock is the best of the old varieties, but it is not so bright as Challenger.

Messrs. Veitch grow their Hyacinths in a flat spanroofed house, stages on each side with a path in the centre, so that the plants are within a few inches of the glass. The ventilation is ample, air being admitted freely above and below. One very seldom has an opportunity of inspecting such an even lot of IIyacinths as this. As a rule you get three, four, and sometimes six moderate spikes for one really good; but here were varieties of which six bulbs had been obtained, and out of these four, and even in one case five spikes were good enough for exhibition. were some 300 spikes in the house, making a brilliant display when they were seen in all their freshoess and heauty. Before these lines are in print they will bave been exhibited twice in London, and afterwards they will be arranged in some of the houses at The weather has been very trying during the last few years for the out-of-doors culture of Hyacinths in Holland, and it is astonishing how the quality of the bulbs is kept up-there seems no falling off whatever in the quality of the blooms. The present season is an exceptional one, the weather being finer than usual in Holland, and the bloom early and very good. J. Douglas.

THE PROPAGATOR.

GESNERAS, EUCODONIAS, BIGLANDULARIAS, AND PLECTOPOMAS. -- There are but two sources from which increased supplies of Gesneras and Biglandularias can be drawn, viz., I, from cuttings; 2, from seeds. The plants intended for cutting purposes should have been set apart, and prepared for propagation, early in the season. The plants must now be cut down to the first leaf above the pot, and made into cuttings. The first cutting should be taken from the top of the plant, and must have four leaves attached to it, and the section should be made about inch below the last pair of leaves. The next and following cuttings that are made should be divided down the middle of the stem longitudinally, thus making two cuttings of one, as it were, each having an eye and a leaf, with a 1 inch of stem attached to it. They are now ready to be placed into long thumb-pots. The soil should be composed of half turfy loam, a quarter peat, and a quarter sand, which should be well mixed together and passed through a To this mixture should be added about a fine sieve. 48-sized potful of finely broken crocks. The soil should be pressed firmly into the pot, and the cuttings must be buried therein half-way up the leaf-stalk. After having watered the cuttings they must be put into a frame over a gentle bottom-heat. It may be well to call attention to the importance of burying the eyes of the cuttings beneath the soil. If the cutting is left to form a bulb from the bottom of the stem only, without an eye, it would never form a growth. Therefore it becomes necessary to cut the cuttings of the round-bulb varieties to a joint, and then reduce the stem to such lengths as will favour the formation of the bulb from the eye. When the cuttings have rooted they should be removed from the frame and potted into large 60-sized pots. It is worthy of remark that the round-bulb varieties do not form bulbs in sufficient quantities to make this experiment profitable, but the above method is the best when only small quantities are required.

From Seed,—When large quantities of Gesneras and Biglandularias are required they are best obtained from seed. It should be sown in January. Some well-drained and flat pans should be filled with the soil named above, which should be well watered with a rose-pot previous to the sowing of the seed, in order to make the surface level. The seeds should be sown thinly upon the surface of the soil. The pans must now be placed upon a warm shelf, which should be covered with a layer of river sand kept in a constantly moist state. In order to prevent the seed being injured by the drip of water from the roof, it is a good plan to protect them with a pane of glass supported by four thumb-pots placed so as to form the four corners of a square — the seed-pan being placed in the centre of the four pots, and underneath the pane of glass. When the seeds commence to spring up they should be pricked off and placed into pans, each seedling an inch apart from the other; the pans to be replaced upon the shelf until the seedlings are strong enough to be potted into thumb-pots. When next they require a fresh pot they should be potted, tied up, and placed in a half-spent dung-frame or hotbed. Great care, however, must be exercised to see that they receive plenty of air, and that they are protected from the rays of the sun; and it is dangerous to syringe them overhead.

HYERID GESNERAS AND BIGLANDULARIAS. — It has been noticed that most of the round-bulb varieties come true from seed, and it is advisable to make a selection of the plants for bybridising purposes, and place them about a yard or more apart on a front platform in a warm airy house. They must be placed in a position out of the range of a syringe. When true varieties are required each plant should be fertilised with its own pollen, and care should be fertilised with its own pollen, and care should be taken to prevent any other reaching the pistil. The largest flowers only should be fertilised, and the remainder removed from the plant, so as to concentrate the strength in the fertilised flowers. When the seeds are ripe they should be gathered, but on no account should they be removed from the pods until it is time to sow them.

Culture.—The soil around the old bulbs should be reduced, and the bulbs potted into small 60-sized pots, placing them on a platform in a warm airy house. The best soil for this purpose is that composed of balf loam, a quarter peat, and a quarter sand, and adding thereto about a 48-sized potful of ballast. So soon as the bulbs throw out a growth 4 or 5 inches in height they should be potted into a 48-sized pot, and repotted as necessity dictates. Wheo, however, a 24-sized pot is reached if will not again be necessary to pot it. The plant will grow for two or three years in this size pot, and it is only occessary to look to the surfacing and drainage.

EUCODONIAS. - In the propagation of Eucodonias from cuttings the same instructions must be followed as for Gesneras, but the following must be carried out in propagation from the leaves:—Fully developed or "hard" leaves should be selected for the cuttings. They should be severed with a sharp knife close to the main stem of the plant. The cuttings should be placed in the cutting-pot in an upright position, the whole of the leaf-stalk to be buried in the soil. Forty-eight sized pots should be used for the cuttings, and should be filled with soil consisting of half turfy loam, one-third peat, and a quarter sand. After passing thissoil through a 4-inch sieve, a 48-sized potful of finely broken shreds, or ballast, should be added, and the whole well mixed together. The cutting-pots should be filled to within a quarter of an inch of the top, and the rest with sand. Before putting the cuttings in the pots should be watered with a rose-pot to make the soil more compact and the surface level. The cuttings should be arranged around the edge of the pot, and the pots placed in the cutting-frame. When they have rooted they should be potted into separate pots, and placed on a gentle bottom-heat. When these plants are strong enough they can be removed to a cool and airy house.

From Corms.—Ripe tubers should be chosen and "scaled"—i.e., each tuber should be separated into the scale-like particles of which it is composed. This process should be commenced at the large end of the tuber—the scale-like particles to be sown upon the surface of the soil, like seeds, and partially covered with soil. The soil to be the same as mentioned above. The pots to be watered and placed in the cutting-frame. When the young seedlings grow to the height of half an inch they should be potted into thimble-pots and placed upon a gentle bottom-heat. As they increase in size and strength they must be repotted as necessity demands. The same remarks

made respecting the culture and seed of Gesneras will apply also to Eucodonias.

PLECTOPOMAS are propagated in the same manner as Achimenes (see p. 218). The whole of these Gesneraceous plants are very beautiful, and useful for conservatory and indoor decoration; but unless the keeping up of the stock by propagation be well attended to they, like many other plants, are liable to die out and be lost to a garden. 7.0.

GUMMING IN FRUIT TREES.

In the Gardener's Chronicle for February 23, 1884, p. 238, a communication upon this subject appeared from Sir James Paget, in which the researches of Dr. W. M. Beijeriock were alluded to. These observations show that gummosis is a disease due to to the presence of a parasitic fuogus, belonging to the genus Corynium. It was found that when gum was introduced into wounds in the bark of the young branches of Peach and Cherry trees the wounds instead of closing, exuded gum. It was further found that the

the gum for forty-eight hours I was fortunate in finding one spore in the act of germination The process had only just commenced, (4). but the germ tube which was emitted from one of the terminal loculi had already received into itself the endochrome from the compartment from which it sprang. The green bark surrounding the wound from which the gum exuded was environed (2) by a discoloured zone of a bright yellow colour, which bore a strong resemblance to the golden-yellow zone that surrounds the patches of Rhytisma maximum on Willow twigs, so vividly pourtrayed by Sowerby in bis figure under the name Sphæria aurea, t. 356. This yellow zone can only be seen on the young bark, and, as far as my experience goes, is not observable when the older parts of the trees are affected. I have noticed it at present only upon Peach twigs. Having since examined gum from Plum, Cherry, Peach, and Apricot trees, I have found the same mycelium and spores, although the latter not so abundantly as in the specimen, Professor Oudemans sent me; still I have no doubt of the identity of the structures. Professor Oudemans' specimens were exhibited at the

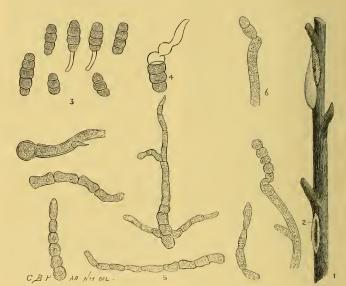


FIG. 74.—CORYNIUM BEIJERINCKII: FUNGUS PRODUCING GUMMING.

References:--1, Twig with gum; 2, gum-producing wound; 3, Spores of Corynium of various ages; 4, Corynium spore germinating; 5, Spawn-thread (mycelium) from gum; 6, Branch bearing spore of Cladosporium.

exudation was not induced when the infection was made with gum that had previously been boiled for some time or otherwise disinfected by heat. The production of the gum is accompanied by the development upon the bark of various spore forms of the fuogus, io fact the fungus is the cause of the disease. This fungus was described* by Professor C. A. J. A. Oudemans. Being interested in the subject I applied to this gentleman, who in reply kindly sent me two specimeos of gumming in the young branches of a Peach tree, in which the Coryoium was present. Upon soaking a few fragments of the gum in water and examining them numerous phases of the life-history of the Corynium were at once encountered, the most abundant of which were mycelial hyphæ, or spawnthreads, of a rich brown colour, variously septate (5); many of these were branched and articulated, others bore Cladosporium spores (6). The true Corynium spores (3) were also encountered, these were not, however, so uniform in size and septation as might have been expected from the description; in some the pedicels were still attached, but in most they had disappeared—some were only biseptate, while a few were 4-septate. After macerating a piece of meetiog of the Scientific Committee on the 11th inst. One point concerning the spread of this disease seems clear—the fungus cannot itself penetrate the bark, there must be some abrasion or laceration of it before the germ tubes can enter. These idjurites may clearly arise from many causes; but how do the spores which are undeveloped in the viscid gam gain access to them? That they cannot be blown there by the wind is obvious. If the gumming occurs upon the upper branches, of course they may be washed down by the rain, but how do they spread from tree to tree? Obviously they must be carried—most probably by insects. From some observations I have recently been making upon canker in Apple trees, I feel almost certain that the form of that disease which is produced by Nectria ditissima—which, by the way, is the commonest form in this district—also originates in the first instance from some injury to the bark, by which the sources gain admission to the host.

the commonest form in this district—also originates in the first instance from some injury to the bark, by which the spores gain admission to the host.

Corynium Eejerinkii, Oud.—Pustules very much punctiform, black, crowded, spores (conidia) oblong or oblong-ovate, pale olive-brown, commonly triseptate (4-loculate), constricted at the septa, 28—32 mk. long by 11—13 mk. wide, terminal locali slightly smaller and paler, pedicels colourless, cylindrical or slightly enlarged at the base, about the length of the spores; paraphyses absent. Charles Plowright, 7, King Street, King's Lynn, March 25.

The Arboretum.

PICEA AJANENSIS, -" This is in several respects the handsomest of all the species of Picea (Spruces), in so far at least as can be judged from somewhat young specimens. Though wanting the drooping Larch-like habit of the Himalayan P. Morinda, and the graceful branching of the Caucasian P. orientalis, it excels these and all others in the bold habit, the dark green of the shining foliage that clothes the upper sides of the io Abies Nordmanniana and A. amabilis, and the beautiful glaucous blue-white of that which appears on the under-side [really upper]. This effect of contrast is much heightened in bright sunshiny weather when the tips of the branches turn up, disclosing to the eye the pale surface of the leaves. Add to this the rich vinous purple of the colour of the young cones, which is not surpassed in beauty by the violet of those of A. Webbiana, or the red of some of the young Larch cones, and it will be allowed that it has many attrac-Mag. (1884), t. 6743, refers, is a native of the Valley of the Amoor, extending into Japan. The full history of the tree-one of two or three species commonly grown as P. Alcockiana-and the curious mobility of the leaves, the presence of the silvery pore-bearing surface on the upper, not the lower surface of the leaves, formed the subject of various articles and illustrations published in these columns in 1880.

PRUNUS TRILOBA. — One of the handsomest of hardy ornamental early spring flowering shrubs is undoubtedly Frunus triloba, with its numerous double rosy-red or pink-coloured flowers. Against a wall it produces a greater profusion of blossoms, and also flowers earlier, than when treated as an ordinary member of the shrubbery horder; but even in the latter position it is a very desirable plant. In the Prunus collection at Kew an earlier variety of similar habit, but one in which duplication of the parts of the flower has not been carried to such an extent as in the species as it is generally met with in gardens, has been in flower some time; indeed, in the open border this form was in flower almost earlier than the type against a sheltered wall. Prunus virgata—for so this early form is named in Continental gardens (the Kew plant was received from Belgium under that name)—is referred to P. Mume by Mons. Lavallée, in his Arboaceum Segrecianum. There is no doubt, however, that it is a mere variety of the plant which LINDLEY called Amygdalopsis triloba, and which is now almost universally referred to a Prunus triloba.

GREY-LEAVED SHRUBS, -The different shades of grey are some of the most useful that are employed in the combinations of the flower gardener in his colour arrangements in the flower-hed proper, and especially in the arabesque or carpet beds. hues are equally as requisite for diversity and relief in the larger fields of garden scenery that the mention of a few of the choicest of them may be thought of use to planters at this season. Unless for especially deserved effect the grey tint should not predominate nor be too pronounced in any part of the garden, and unless the place is of great extent its repetition ought to be avoided. Near the margin of a quiet pool, where the water is still and clear—blue. a quiet poon, where the water is still and clear—blue, not green or white, like rushing water—the grey foliage has pretty effects. Amongst shrubs of large growth good for the purpose are Eleagnus argenteus and E. angustifolius, both with neat lancet-like leaves, inconspicuous yellow flowers of a peculiar odour, which are succeeded by oval red berries. growth is dense and rapid, the plants soon making fine grey masses-E, angustifolius being rather the more pleasing of the two in habit and general effect, and the foliage a little longer, and consequently more drooping, so that more leaf-surface is seen. Hippo-phäe rhamnoides forms pretty half trees or robust bushes, depending on locality and exposure, being specially suited for the sea-side. In favourable seasons they are loaded with orange Pyracantha-like berries, that lend a cheerful look to the plant in late autumn and winter. The habit of the plant is somewhat straggling and unconfined, and on that account, as also for its colour, it will form an admirable contrast planted in the vicinity of the dark prim-looking Thuias and other species of Coniferæ.

Prchid Notes and Cleanings.

IPSEA SPECIOSA.—A fine panful of this beautiful terrestrial Ceylon Orchid, which has been in bloom for more than six weeks with Major Lendy, of Sunbury House, Sunbury-on-Thames, serves to remind us of its worth, and also to furnish us with the specimen from which our illustration (fig. 75) was taken. The plant bears a dozen spikes of bright yellow flowers, with orange lines on the labellum. In habit it resembles a small Bletia. Many fail with this plant, but Major Lendy finds it very easy to grow if potted



Fig. 75.—IPSBA SPECIOSA: FLOWERS YELLOW.

in about equal proportions of turly loam and peat mixed with sand. His plants are placed in a light, airy part of the Cattleya-house, and are unsparingly watered while growing, and kept moist and cool while at rest.

ODONTOGLOSSUM EDWARDI.—In a genus in which whites and yellows predominate to a remarkable extent, this species is conspicuous by reason of its violet-coloured flowers. A strong plant in bloom at Kew is at present one of the most striking objects in the Kew Orchid collection. This specimen has two large panicles, one of which bears upwards of eighty flowers, richer in colour and larger in size than those of any other plant of the same species we have yet seen. In addition to the peculiarity of its colour, O. Edwardi deserves mention on account of its free-flowering character, and also for the length of time which the flowers last.

Phalenopsis Schilleriana.—Comforting news as to the longevity of this plant, and of its extraordianay beauty when grown to perfection, comes from the gardeos of C. Perkins, Esq., Kirkley Hall, Pontendand, Newastle-on-Tyne, in whose Orchid collection are now to be seen two fine plants of it which have been in the family for over twenty years, and always with steadily increasing vigour and floriferousness. The plants have each nine leaves, varying in length from 12 to 15 inches. The one plant now has three flower-spikes, bearing in all 255 fully expanded blooms, and the other has two spikes, bearing between them 263 flowers, the pair of plants presenting an enchanting sight not likely to be forgotten by any who see it. The variety at Kirkley Hall is, moreover, stated to be far more fragrant than the ordinary form. The plants are grown in an ordinary lean-to house, which seems to suit them well, for in addition to their annual heavy crop of flowers, the flower-spikes furnish young plants every year.

DENDROBIUMS AT WELHAM HALL, RETFORD .-When visiting these gardens on the 19th inst. I was delighted to find Dendrobes so well cultivated and in such large numbers for a private establishment, one house being nearly full of them, and the plants flowering in a most profuse manner-Dendrohium Wardianum having several growths, with thirty to forty blooms fully expanded. D. nobile was also doing good service and flowering well. D. crassinode is flowering from fourteen joints, which is more in number than I have previously noticed. Passing through the various houses I noticed that Mr. Wynch, the head gardener, gives only a small quantity of material for the plants to grow in, consequently they must derive most of their support from the atmosphere of the houses, which seems to suit them well, as several of the growths are very fine, and must have been thoroughly ripened up, hence the profuse blooming of the plants. J. Jefferson, Worksop.

ORCHIS ROBERTIANA.—In a recent number of the Gardeners' Chronicle a correspondent asks about Orchis Robertiana. I may inform him that it grows wild here in this neighbourhood, but is not very common. The only place in which I myself have found it is in a sort of ravine on the north side of a wood belonging to Sir John Lubbock. Mumby, in his Catalogue of Algerian Native Plants, gives it also the name of Accras longibracteata. It grows about 12 to 16 inches high, with a large bunch of light coloured lilac flowers with dark spots, and flowers in the month of January—the earliest of all Orchis, A. S., Mustapha Suppricave, Algierue, Algierue,

CALANTHE REGNIERI .- This seems to be a very distinct and useful species. Amongst the importations from Cochin China there is considerable diversity in the colour of the flowers, some being much deeper in colour than the others. The season of Calanthes has been greatly prolonged through it. We have, first, in November, C. vestita and the variety rubra; flowering with it there is the handsome C. Veitchii; these carry the flowering period into the new year. From the middle of December, and flowering a month later than the above, we have C. Turneri and C. Turneri nivalis, two very fine varieties, quite distinct in the form of their flowers from the vestita section; and more nearly allied to the subject of this note, C. Regoieri, of which there are at least three varieties in flower at present in Messrs. Veitch's nursery. In their time of flowering they follow the C. Turneri group; and before these are well out of bloom the distinct and fine hybrid, C. Dominii, will be opening its flowers; followed, and sometimes preceded, by C. masuca and C. veratriflora; the first pale lilac, and very pretty, the latter of a pure delicate white. All of them like turfy loam to grow in, rather than peat. 7. D.

CATTLEVA TRIANÆ VAR. LEEANA.—A First-class Certificate at the Royal Horticultural Society on Tuesday, and a Botanical Certificate at the Royal Botanic Society on Wednesday, should proclaim that this grand Cattleya is one of the first merit. In point of size it is one of the largest flowered of its class, and for its striking beauty it comes into the first rank; but there is over and above these qualities a certain something about it that renders it distinct and debarsone from finding another variety sufficiently like it to compare with it. The tube of the labellum, for example, has a peculiar form, its edges are brought together at the top in a sharp ridge which allows of a greater surface

on the outside for the display of its lively purplishrose colour, which assists so materially in showing off
to advantage the very broad lower portion of the
labellum, and its glowing colour of vivid magentamauve. Another of its peculiarities is, that it has no
y-llow in the throat, but only pure white, with crimson rays. This, and the fact of the clean plain-edged
labellum being edged with pale rose, presents the
high coloured portion of the labellum very distinctly,
The sepals and petals are of fine substance and of a
pleasing rose tint, and altogether it is an extraordinary
and lovely variety. Messrs. F. Sander & Co., of St.
Albans, were the lucky importers, and, on dit, that
Mr. Lee's plant was valued at 250 guineas.

ODONTCGLOSSUM OERSTEDII. — This charming little cool-house Orchid, with its snow-white flowers—ft companion for the bright scarlet Sophronitis grandiflora—was awarded a First-class Certificate at the Royal Horticultural Society on Tuesday, March 25. The pretty pair of plants were exhibited by William Lee, Esq., of Downside, Leatherhead, who grows them very successfully in suspended pans in a cold-house, in which Lycaste Skinneri, &c., are grown. When grown into large tufts like Mr. Lee's plants, and covered with the neat white flowers with orange blotch in the centre, few plants are more attractive, or, by reason of the durability of the blooms, more useful. The same plants were much admired at the Royal Botanic Society's Gardens on Wednesday.

LACHENALIAS.

FROM Mr. Ware, of Tottenham, we have received numerous specimens of these pretty Liliaceous plants, which are not so much grown as they deserve to be,

- L. PENDULA has oblong acute channelled leaves, and very stout speckled flower-stem, bearing at the top a crowded raceme of flowers, each about 1 inch long, with a cylindric red calyx, from beyond which protrudes for a short distance the oblong obtuse rounded petals, green at the tips with a purplish blotch.
- L. AUREA has oblong lanceolate leaves of a deep green colour, the edges and tips being purplish. The flower-stalk is slender, purplish, covered with glaucous bloom, and bearing at the summit a somewhat loose raceme of shortly stalked orange-coloured flowers, in which the petals are half as long again as the sepals.
- L. LUTEOLA MACULATA is a large form with oblong lanceolate spotted leaves and long flowerstalks, 8—fo inches high, green, with purple spots, and bearing at the summit a raceme of greenish-yellow flowers, each about I inch long, and with the petals half as long again as the sepals.
- L. NELSONI × has long oblong lanceolate leaves, purple flower-stalks, 8—10 inches high, and with terminal racemes of rich orange coloured flowers, each rather more than 1 inch in length, with the petals half as long again as the sepals, and marked in the centre by a green rib.
- L. TIGRINA VAR. WAREI.—A relatively low-growing form, with oblong lanceolate acute green leaves, faintly spotted; flower-stalks 6 inches long, with loose racemes of flowers, each about 1½ inch long, the sepals yellow, with green tips, the greenish-yellow petals half as long again as the sepals, oblong, rounded, with a reddish margin.
- L. TIGRINA.—A robust form, with broad oblong lanceolate deep green leaves; flower-stalks S-10 in-hes high, purplish, with a glaucous bloom and terminal loose racemes of yellowish flowers, each abut I inch in length, and with the greenish petals protruding beyond the sepals.

AZALEA OBTUSA.—Mr. Hudson has this charming type in flower at Gunnersbury House, just now. It reminds one of a scarlet amena, or something between this and A. indica; of dwarf, free banching growth, very free, the colour bright scarlet-cimson. It appears to be one of the new American types raised by Mr. C. M. Hovey, having a very close resemblance to A. Little Beauty, shown by Messrs. Veitch & Sons at the last meeting of the Royal Horticultural Society, but differing io colour, Hudson hinks very highly of it, and states that it can be got into flower with A. amoena. It appears to be an excellent forcing plant.

The Henbageous Borden.

Double Daffodils Producing Seed .- In a note from Mr. Brockbank, which recently appeared in the Gardeners' Chronicle (p. 309), it was suggested that the large double Daffodil of English gardens (N. Telamonius flore-pleno) may frequently have been reproduced from its own seed. The idea was new to most of us, and I at once began to make inquiries, the result of which has convinced me that Mr. Brockbank is right. A well-known amateur of long experience in gardening sent me last autumn a quantity of bulbs of both single and double N. Telamonius, which grow together in the orchards of Cornwallwhere he lives. He informs me that the semi-double flowers amongst them produce seed plentifully, as do also the single flowers. He has grown both kinds from seed, and finds that the double flowers bear seed which produces double flowers, and the single flower seed which produces single flowers, with few exceptions. Another correspondent, near whom typical N. Pseudo-Narcissus, both double and single, and N. Telamonius, both double and single, with many intermediate forms, grow mixed up together, tells me that lately he was surprised at observing pollen emitted from a flower of the large double Daffodil; he examined several, and shook out from them enough pollen to colour his hand. I am not at liberty to give the names of my correspondents, but am certain that both are trustworthy. C. Wolley Dod, Edge Halli Malpas, March 26.

AUBRIETIAS, &c .- How very early and strikingly effective are big clumps of Aubrietia violacea, apparently the very earliest of all the family; indeed, such kinds as Ingram's Pink, deltoidea, and others, have hardly a bloom open, and yet violacea is a perfect mass of flower. For spring gardening, to match, for instance, with the white and blue forms of Myosotis dissitiflora, early Daisies, and Violas, it would indeed be difficult to find a more useful hardy bedding plant. Perhaps transplanting would check this precocity to flower, for Aubrietias transplant badly, but much depends upon the soil and its attachment to the roots. Aubrietia violacea not only seeds well, but comes almost perfectly true from seed; and if sown now a pinch would give a fine lot of big plants for next autumn planting. The variegated Forget-me-Not is a charming winter bedding plant, and will match well with variegated Daisies, but it is much later in blooming than is dissitiflora; indeed, pieces that have reverted to the original form show that it is a sport from sylvatica, and not from dissitiflora, as is sometimes supposed. It is strange that double Daisies are not more largely used for winter bedding than they are. I see the large red and white kinds on the hawkers' barrows, but seldom or never any of the pretty variegated kinds, or of the very charming pink, carmine, and mottled flowers. One of the prettiest of all is called Beatrice, a quilled flower of a bright carmine hue, and in a mass it is truly lovely. A bed planted solely in panels with various Daisies, something after the fashion of a carpet hed, would look very pretty, especially if the dividing lines were formed with the golden blotched kinds. *Quercus*.

SCILLAS. - Amongst the groups of Chionodoxa Lucilize from newly imported bulbs I see there are a large proportion of the self blue, differing from Mr. Maw's original discovery, which had a white centre like the Nemophila. The new variety is not so pretty as its cousin, but it is the same plant, and thus forms an interesting variety. There are also some examples of S. nivalis amongst the clumps, and which were thus named by Mr. Potter, of the York Nurseries. This is a very pretty Scilla, after the manner of bifolia. The varieties of S. bifolia are just now amongst the most interesting of our spring flowers. There are many varieties to be selected from any large lot of bulbs, the names and the assortments having got into confusion. We have for the last three years carefully noted the Scillas, and marked off the varieties at There are three well-marked shades blooming time. of blue in S. bifolia, and a double form much larger than the ordinary variety, and with two distinct rows of petals. A true double in S. bifolia would be as pretty as a double Hepatica. The white variety of S. bifolia is much smaller than the blues, and seldom carries more than three flowers on a scape. Is there any larger variety of it? Wm. Brockbank, Brockhurst, Didsbury. [See article on the varieties of Scilla bifolia in Gard. Chron. 1868, p. 157. Ed.]

SCILLA SIBIRICA.—If these, or indeed any of the species of Squilis are planted in good garden soil, as a rule they increase as freely as Crocuses and Snowdrops. I planted some small patches in our garden at Loxford, very light gravelly soil, about nine years ago; six bulbs were planted in each patch, and when they were lifted last year I counted about sixty bulbs in each clump. They seem to do equally well in the heavy soil of our new garden. Some persons are disappointed with Chionodoxa Luciliæ; one geatleman wrote to me enquiring what it was like, because he could not see that it differed from Scilla bifolia. The fact is, that even if the bulbs are purchased from the best seedsmen, the Scilla is mixed with it. The Chionodoxa is a much more beautiful plant than any species of Scilla. It also seeds quite freely; the best way is to let the seeds sow themselves, and as soon as it is seen that they are scattered, cover them over with fine sandy soil. We have the young plants coming up now round a fuft of it like a bed of Onions. The plant itself in its young state has a marked resemblance to the Onion plant, 7. Douglan, Great Geardes.

FORESTRY.

INTERNATIONAL FORESTRY EXHIBITION, EDIN-BURGH.-Since our last report the Executive Committee has made good progress with the arrangements for commencing the more serious part of their undertaking. The applications for space have nearly reached the limits of the contemplated area of the buildings, and if the applications at the close of the last day for entry (the 31st inst.) exceed anticipations, the committee will have to consider the enlargement of the covered space for exhibits. The plan of the exhibition easily admits of this, and the committee have abundance of ground at their disposal for such an extension of the buildings. The open-air space is of great extent, and is not likely to be overcrowded even by the numerous and extensive entries of articles ich have been made for that department of the Exhibition. For open-air space most of the leading firms in the tree nursery trade have applied, and their exhibits of living trees and shruhs will form one of the most instructive and pleasing features in the Exhibition. Among those who will contribute to this most interesting display of living plants are Messrs. Veitch & Sons, of Chelsea; Dickson & Sons, of Chester; Little & Ballantyne, of Carlisle; Rodger, McLelland & Co., of Newry; Hartland, of Cork; The Lawson Company, Messrs. Methven & Son, Dickson & Sons, Dicksons & Co., Laird & Sons, and Ireland & Thomson, of Edinburgh; Ben. Reid & Co., of Aberdeen; Palmer & Son, of Annan, and others, with valuable collections more or less numerous.

At a meeting of the Executive Committee held on the 19th inst. the tenders for erecting the Exhibition buildings were opened, and the estimate of Messrs. Beattie & Sons, builders, Edinburgh, was accepted. The buildings are arranged to cover an area of about 3 acres, and are to be erected from plans prepared by Mr. Robert Morham, Superintendent of the City Public Works, Edinburgh. They combine elegance and lightness of design with the greatest capacity for the purposes of the Exhibition. The site of the main buildings is on the lawn in front of Donaldson's Hospital, in the western suburbs of Edinburgh, and commanding an extensive view of the scenery of the Firth of Forth, Fife, and the Lothians. The main building will run the whole length of the lawn, about 300 yards, and will be intersected at regular intervals by three transepts, running to a depth of about 100 feet from either side. The cotrance to the Exhibition will be by the western gateway of the Institution, entering through a covered way at the west end of the main gallery. Doorways, with flights of steps, will lead from each end of the transepts into the grounds, which will be furnished with numerous seats and rustic arbours, where visitors may rest and enjoy the landscape. Rising over the centre of the building will be a large handsome dome, flanked by cupolas of smaller dimensions. By these and by a zone of glass along the ridge of the roof the interior will be amply lighted. The buildings will be of wood, with incombustible felt roofing, the walls being constructed of dressed 6-inch boards placed in an upright position. To make the interior more ornate, the boards in the gables of the transepts will be arranged diagonally; and a numerous series of arches will also add effectiveness to the design. The roof will be of open woodwork. At the back of the main building—in the recesses between the transepts — refreshment rooms and kitchen and lavatory accommodation will be provided. A number of other smaller buildings, chiefly of an ornamental nature, will be dotted about the grounds. One of these, from Balmoral, is designed to represent a Swiss châlet, which Her Majesty has specially taken under her patronage.

To secure the privacy of the Exhibition, the railings dividing the ground from the street will be boarded up, and a wooden screen, 8 feet high, will be erected round the open sides of the field occupied by the Exhibition outside of the Hospital grounds. The buildings for the Executive Committee are to be put up near the entrance, and immediately to the west of the main gallery. It was announced at the meeting that a printed list, containing twenty-six pages, had been forwarded by order of the Government of India, showing the publications and maps relating to forest administration in that country, and which had been sent to the Exhibition. A further com-munication from the Government of India had also been received, applying for space for wood, Bamboos, &c., which were in course of transmission. It was also stated that the Maharajah of Johore is to be an exhibitor in almost every class; that the Governments of Chili and Denmark had applied for 630 and 600 feet respectively; and that the Scottish Papermakers' Association had asked for a space of 400 square feet in the Exhibition. The number of contributions promised by the foresters of this country, as well as the models, carvings, &c., from private individuals, point to a most exhaustive and interesting display of the arboricultural resources of the country. It was also mentioned that Mr. Peter White, M.P., was moving in the direction of having Caoada properly represented at the Forestry Exh bition, and that the Hon. Duncan Wilmot, the Lieutenant-Governor, had intimated to the New Brupswick Legislature that he deemed it expedient to send a display of the forest wealth of New Brunswick to the Exhibition.

FRUITS UNDER GLASS.

MELONS .- The average time that these take under ordinary treatment, from the period of their setting until they are fit for gathering, is from five to six weeks, therefore, where any are required at an early date, the first batch which have set their fruits should be pushed forward with all possible speed. They will enjoy a high humid temperature, and especially warmth derived from the sun, consequently no opportunity should be lost to make the most of this by closing early, and syringing the plants overhead; syringing in the morning is not desirable, but the beds and other surfaces should be damped early in favourable weather, so that humidity may be maintained. There is much variation in kinds with respect to the netting of the fruits, the finest marked being the most appreciated, and in order to aid in accomplishing this, atmospheric moisture should be cautiously employed, and the ventilation be so conducted as to anticipate the fruits sweating whilst the transition is taking place. The practice of shading, followed by some cultivators, is far from a good one, and should not be imitated, as plants properly reared and attended to not only withstand full exposure to the brightest sunshine, but are greatly strengthened and in every way benefited by its influence. In preparing plants for ordinary frames or pits, in which trellises cannot be used, their points should be pinched out at the second joint, and in planting they should be arranged at equal distances apart upon a ridge of soil placed somewhat nearer to the back than the front of the frame; two plants will be enough for each light of about 4 feet in width, and two shoots only should be allowed to extend from each plant—the one direct to the back, the other to the front of the frame.

VINES.—In mild weather vineries generally should now have a circulation of air at night, and if it can be passed over the warm pipes before it disperses through the structure so much the better. The back sashes should be slightly opened before, or at least as

soon as the sun affects the temperature, and be increased as the sun gains power. Let them be closed before the power is gone, and at the time of closing all Vines which have not reached the blossoming stage should be carefully syringed with chilled rainwater. Houses in which the fruit is swelling should be damped down at closing time, and if a little guano is dissolved in the water it will strengthen the texture of the foliage. Syringing in the morning should not be practised, but all dry surfaces near the pipes, &c., should be damped early. No time should be lost in com-mencing to thin the berries in successional houses, and no better time than the present could be selected for spring planting, and if cut back canes prepared for that purpose are swelling their buds they will be in the best condition for turning out into borders, which should have been formed as has been recommended. In planting carefully remove a sufficient portion of the ball of soil to permit of the roots being thoroughly disentangled; they should then be equally spread out and covered with about 6 inches of the compost. Each plant should be provided with a stake, have its roots mulched with short manure, and receive enough tepid water through a rose to close the soil. Permanent Vines should be afforded a space of 4 feet between their rods.

PEACHES AND NECTARINES,-In clear weather the fires should now be checked early in the morning, and the valves be closed at the same time for the day. The trees in the early house now stoning must not be unduly hastened until that period is over, when the trees will safely withstand harder forcing. A night temperature of 60°, with 10° more from fire-heat in dull weather, and still 10° more on bright sunny days, are the figures to be aimed at for the present. Now that bright weather has set in, syringing will be of great importance, and should be thoroughly attended to twice daily, viz., early in the morniog and at closing time. Disbudding should now be attended to, and the shoots will be growing freely, and should have received their first tying. Any that are very strong should be stopped. Although there is not much danger of well-managed trees casting their fruits, it is best to be on the safe side, and reserve the final thinning until they are stoned. The weight of the crop must necessarily be regulated by circumstances, but it is a step every way in the wrong direction to overburden trees. Successional houses should be gradually brought on in the manner that has been advised for the earlier ones. The borders will claim watchfulness to keep them in a proper state of moisture, and should be mulched with short manure when the fruits commence to swell freely, while the trees that require it should be properly assisted with tepid liquid manure. Thomas Coomber, Hendre Gardens, Monmouth.

Plants and thein Jultune.

GENERAL REMARKS .- Now that we have the power of the sun's rays daily increasing in strength it will be necessary to get the blinds fixed as soon as possible to avert any injury by scalding, and also to relieve any plants that are showing symptoms of distress, looking as if they wanted water, but that really not being the case. When there is a prevalence of easterly winds and bright sunshine sufficient to run the temperature of the house up somewhat unduly high it will be better to let the blinds down for a while rather than give any air when the methods of ventilation are such as to cause the cold air to come in direct contact with the plants. Some roofs, owing to their peculiar construction, are almost inaccessible to roller-blinds; these should be shaded in a permanent manner with scrim canvas or hexagon netting, such as one would use for the protection of fruit trees. This will admit of a tolerable amount of light passing through, yet being sufficient to counteract the risk of injury from scalding. The shading of roofs in any form with applications in the way of paint, whitening, or other material that is applied with a brush, should only be resorted to in the case of emergency; even then it oftentimes does more harm than good, especially if we should have a few weeks of dull cloudy weather intervene, when all shading might be dis-pensed with. The blinds will also be an assistance

at night when a bit cold and gusty, allowing the fires to be eased and so prevent such rapid evaporation, but take the precaution of drawing them up the first thing in the morning. During the absence of blinds from temporary causes some fish-netting laid over the roofs will be of assistance.

STOVES.—Satisfactory progress should now be apparent in the growth of plants in this department; the opportunity of early closing should be taken advantage of during bright sunny weather. The temperature may be run up to 85° or even 90° for a while at such times without any fear of injury when the plants have had a good dewing with the syringe and all available spaces damped down. This will give us what may be termed a fine growing condition of things that will do more towards that end than maintaining a high night temperature at any time. The plants should also have another light syrioging before leaving-off time; this, we think, is not so frequently taken advantage of as it might be. The evaporating troughs should be kept regularly filled; if troughpipes are not provided, very good substitutes can be made from zinc that will last several years. The night temperature of the stove may now be maintained at about 55° as trifle less if very cold, or a little higher if very mild, will be immaterial to the well-being of the plants. With the increased temperatures, especially during the day-time, the mealy-bug will make rapid headway; measures should be taken without delay to keep in check this insect pest, or else it will soon spread throughout the house, causing almost endless labour and watchfulness. Remedies have been so often given that it is quite unnecessary to repeat them, but reference should be made to advice already given. Occasional fumigation will keep in check both thrips and aphis, whilst scale can be kept under by spongling, &c., if not too widely spread throughout the house.

STOVE FLOWERING PLANTS.—The Gardenias will now; to be coming on rapidly under ordinary stove treatment; to such as have heavy crops of bloom-buds occasional doses of weak liquid manure will be a great assistance. One or two of the backward plants may assistance. One of two of the backward parts may with advantage be moved into a trifle lower temperature, to come on as a succession. Young stock should be pioched a few times, to prevent any strong shoots from taking the lead. Some promising looking shoots may also be taken off as cuttings; by securing these with five or six stocky growths, some few weeks will be gained at the commencement of their career—the foundation also for a good plant in the future will be laid; branches, in fact, that look large enough to be in 6-inch pots, can be struck as large enough to be in o-more post, each be stude as easily as the smaller ones, with a brisk heat at command. These can be struck in 3-inch pots, and shifted on into a size larger when established. The Stephanotis that made good autumn growth; will now be pushing forward their trusses; these will be useful when the Gardenias become scarcer. Take the opportunity of planting out a promising young plant if the circumstances are such as to need a good supply.
Where two or three warm, houses are accessible, one Where two or three warm, houses are accessible, one plant may with advantage be kept in each. In this manner, with a slight variation in the temperatures, a longer succession can be had. A well established plant in a pot can be kept in check by removing it to an intermediate house, to be worked in later on as may be required. Such a plant might have a moderate pruning in a few weeks time; it will break all the better, and flower more freely also. Allamandas, Clerodendroos, Bougainvilleas, and Dipladenias, should all be making good breaks by this time. Keep them at the lightest end of the house, and elevated as near to the glass as possible. No tying-in of young shoots extending a little distance elevated as near to the glass as possible. No tying-in of young shoots extending a little distance beyond the trellis should be practised yet. The three first-named genera will not need any support for some time, the last one named will require to be traised on strings near the glass for support. The bush Clerodendrons must be kept pinched a few times, treated in fact like Pelargoniums in this respect, and in potting also. The Vincas will require constant pinching to get a nice stocky bottom. Medinila magnifica will require a little stimulating when the flower trusses are developing, and attention must be given to keeping them free from insects. These remarks will apply with equal force to the Ixoras that made a good autumn growth, and are now or soon will be, showing for flower. Of plants that are gone past their best, and are for the time being relegated to the background, look after Poinsettias, Euphorbias, Plumbagos, and the like, that are invaluable for the winter season. Do not let them take their chance in a cool house, or some dead ones will be found at starting time. Be careful with them take their chance in a cool house, or some dead ones will be found at starting time. Be careful with the Amaryllis as they go out of flower; do not let them be crowded among other plants so that their foliage becomes drawn up to such an extent as to cause it to break down sooner than would otherwise be the case. James Hudson, Gunnersbury House Gardens, W., March 25.

APPOINTMENTS FOR THE ENSUING WEEK.

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TUESDAY, April 1

Sale of Roses, Carnations, Picotecs, &c., at the City Auction Rooms, by Protheroe the City Auction Rooms, by Protheroe Company of the Line Show (two days).

WEDNESDAY, April 2

Sale of Carnations, Picotecs, Roses, &c., at Frotheroe & Morris Rooms.

Linnean Society in metis at 8 F.M.

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Linnean Society in metis at 8 F.M.

Sale of Carnations, Picotecs, Rooms.

Sale of

FROM an early period in the history of VEGETABLE ANATOMY-from the time that GREW and MALPIGHI demonstrated the varied internal cellular construction of plantsexperiments to demonstrate the use of these varied structures have been made. now, when this department of botany has taken a sudden bound onwards, and chemical reagents have come to the help of the microscope, it may be hoped that substantial progress may be made in this direction. The structure of plants, like their outward conformation, is partly an hereditary endowment from generation to generation, partly the result of progressive adaptation to certain conditions. So long as the power of adaptation or accommodation to circumstances remains, so long is there room and opportunity for variation as occasion may demand. On the other hand, it is conceivable that plants which have for a long series of ages become adapted or accustomed to one uniform set of conditions remain unaffected, do not vary when those conditions are altered, or, being unable to accommodate themselves to new circumstances, die out. On some such principles. probably, depends the fact that the gardener can grow certain plants without difficulty, while others defy all his efforts. But to descend from the region of speculation to that of practice, we may point out that the internal conformation of plants sometimes offers as good hints to the cultivator as to the conditions under which certain plants may be expected to thrive as the more easily observed external appearances do.

By way of illustration we may mention the presence in the leaves of certain plants of what are termed palissade-cells. These are oblong cells, arranged vertically, that is, at right angles to the surface of the leaf. Their form and direction may be indicated thus ||||||, the ordinary leaf-cells being more or less globular or branching, or, if elongated, then elongated horizontally in a direction parallel to the surfaces of the leaf. The term "palissade-cells," then, very well expresses the form and arrangement of a certain class of cells packed closely together, like the wooden rails of a park fencing. A very low power of the microscope is sufficient to allow these cells to be seen, and in some cases an ordinary pocket lens, if of tolerably high magnifying power, is sufficient to enable them to be seen. These palissade-cells are usually filled with "leaf-green," or chloro-

We cannot here pursue the subject from the point of view of the anatomist or physiologist, it must suffice to point out the practical deductions which are insisted on by STAHL, VESQUE, and other students of this particular structure. When a gardener, says M. VESOUE. in substance, receives a new plant of imperfect or unknown history he does not pay much heed to systems of classification, as a botanist would do, for they afford him little help. He judges by the external appearances of the plant what is likely to be the appropriate treatment, and so, for instance, he submits to the same general conditions Stapelias and Aloes, Agaves and Mesembryanthemums, and so forth-plants, in fact, whose "habits" and requirements are the same, whose adaptive characters, that is, are

identical, although their more purely hereditary peculiarities are widely different. In the case of succulent plants, such as those just mentioned, the matter is easily determined; but in those cases where the exterior appearance gives no indication of the habit and requirements of the plant then a microscopic examination must be made, and this will enable the observer to say with something like certainty whether the plant naturally grows in the sun or the shade-whether its internal structure is such as to allow of free or of relatively little transpiration-whether it is likely to demand frequent and copious waterings, or whether it is capable of living long without any. We may give a few illustrations. If the palissade-cells are abundant and well marked the probability is that the plant requires a proportionate amount of exposure to light; if, on the other hand, the palissades are scanty or not present the inference is that the plant requires to be grown in the shade. Between these two extremes is a group of plants of variable and inconstant nature : such plants obviously are enabled by Nature to adapt themselves more or less successfully to different conditions.

In the case of moisture, the subject may be divided into the discussion of the arrangements for, in the first place, the supply of water; and, secondly, for its retention and storage. Indications as to the supply, great or little, may be gathered from the thickness of the cuticle, and the number and position of the pores or stomata.

As to the faculty of storage, that may be judged of from the nature of the epiderm or skin beneath the cuticle, the abundance of cellular tissue—that is, the succulence of the leaf, and other characters. The first set of characters supply hints as to the absolute quantity of water required; for instance, the thinness of cuticle and abundance of stomata would naturally suggest frequent and copious waterings; the second set of characters suggests the abundance and frequency of water, whether little and often, or a large quantity less often. Plants whose thick rinds indicate a relatively little amount of transpiration naturally require a hotter temperature and a fuller exposure to light than others.

A plant with small pores or stomata transpires less than one with large or with numerous pores. Hairs on the surface check transpiration, spongy construction of the leaf is also an indication of relatively little transpiration. Obviously, the more fleshy the plant the less need there is for watering frequently.

Hard woody cells, such as those which constitute the grit of a Pear, and which serve as a sort of skeleton to support the tissues, are taken by M. VESQUE to indicate that the plant is exposed to bright sunlight and occasional drought, as Proteas, &c., or to occasional excessive losses of water, and indicate the necessity for copious watering at intervals, as in the case of succulent plants.

Pursuing his subject M. VESQUE goes on to show how the epidermal cells, or those subadjacent to them, in some cases act as reservoirs for water; and how in the tissues of some leaves may be found other structures having a similar office, so that the thick rind, the deficiency of stomata, the dense hairs with which plants growing in dry places are provided, indicate the quantity of water which traverses the plant, while the reservoirs for water furnish indications as to the frequency of watering and the length of interval between the operations.

The intelligent observer, adds M. VESQUE, will know how to avail himself of the indications presented to him, which will be varied and combined in a thousand different ways, but from which he will be enabled with accuracy and judgment to regulate the delicate operation of watering.

We have no doubt whatever that M. VESOUE

is on the right track, but we fear it will be long before our young gardeners will avail themselves of the help of the microscope rather than of the rough-and-ready measures that they are accustomed to practise. In any case, it will be admitted that there are few operations in practical gardening which are carried out with less intelligent judgment than is watering, and any means which may serve to obviate this will be a boon to head gardeners.

Lastly, we may mention that we have put M. VESQUE'S notions to a partial test with reference to the leaves of Orchids, which present remarkably great variations of structure, and in some cases of great interest. We have examined one or two dozen species, with the general result of confirming M. VESQUE's notions, or, at least, of satisfying ourselves that "there is something in them." On another occasion we may speak more fully on this point.

- DÆDALACANTHUS NERVOSUS, a very old inhabitant of our stoves, though few will recognise it under the above cumbrous name. As Justicia or Eranthemum it would be more familiar, but as we feel bound to accept BENTHAM and HOOKER's nomenclature till we can show sufficiently valid reason to the contrary, we are constrained to adopt the new name. The novelty of the name will account for the fruitless search made by one of our correspondents in the Treasury of Bolany and other books of reference. Be this as it may, the older generation of gardeners will recognise it as a valuable stove plant, for two reasons—it is winter-flowering, and it has blue flowers, set off by the white veined bracts. Though of shrubby habit, it may be flowered in quite a young state. Like many other good things, it has been elbowed out by things of less interest, but more suitable for cutting or for room decoration. Its culture is of the simplest, and if it be rather apt to fall a prey to mealy-bug, that pest is easily kept in check in the case of this Those who are addicted to microscopical pursuits will find the pollen-grain very elegant and peculiar. The specimen engraved (fig. 76) was sent to us by Mr. WYNNE, gr. to E. S. TRAFFORD, Esq., Wroxham Hall, Norfolk.

- International Health Exhibition, LONDON .- The Exhibition will be opened by the President, His Royal Highness the Prince of WALES, on Thursday, May 8, at 3 P.M.

- Professorship of Horticulture,-We have not an exact equivalent for the title of "Professeur de Culture," whose functions were so long and so devotedly carried out at the Jardin des Plantes at Paris by our late friend and contributor, Professor DECAISNE. Director of the Garden would be our December 2 December 2 Det. the Garden would be on nearest equivalent; but, the occupant of the Chair in Paris has, besides the administration of the garden, to give lectures, some popular, others addressed to botanical students, and to provide generally for the highest requirements of science and the pleasure of lovers of gardening. We are glad to learn that M. MANIME CORNU has been appointed to this important and difficult office. M. CORNU's reputation gives ample justification for the hope that he will prove a successful administrator, and speedily reorganise the establishment committed to bis care, which, to say the truth, sadly needs regenerating. M. CORNU has good material to work on, and a splendid opportunity. Let us hope that he will be enabled to exercise his admitted talents to the best advantage. At the same time three of the principal members of the staff, having completed their term of service, have retired from their duties. To Eoglish horticulturists M. HOULLET is perhaps the best known of these, and their hearty good wishes attend him in his well-earned retirement.

- PEACH BLOSSOM .- It has been the all but universal custom of ralsers of Peaches, if not to proceed quite haphazard, at least to consider the fruit only. Whether this is wise or not will be made manifest by the precautions taken to protect the blooms from spring frost, and by the fact that, with all our care, a good crop on the walls is the exception rather than the rule. We might suggest that raisers should pay increased attention to hardihood. Again, it might be well if they regarded matters from



Fig. 76.—DÆDALACANTHUS NERVOSUS: FLOWERS BLUE. (SEE F. 414.)

a botanist's point of view, and pay more attention to the arrangement of the buds, whether single, or in pairs, or clusters, and for this reason-when the flower-buds are in pairs the two are not of the same age or generation, but one is older and in advance of the other, as may easily be seen when the flowers are young or only partially expanded. Would it not be well to encourage the development of such varieties as show the greatest tendency to produce clustered buds, as by the difference in time of expansion we might secure a crop from the side or younger buds, even if the older one had perished? thought that the difference in time would be too small to be of any practical importance, and no doubt that would be the case now, but our point is that by forethought, and judicious cross-breeding ad hoc, the desired result may be obtained as surely as any other for which we employ like means. Meanwhile, as the double or triple flower-buds occur, as a rule, on the strongest shortest-jointed shoots, and the single buds on the long weak shoots, alternating with leaf-buds, we may realise part of our programme hy selecting the most robust varieties.

- THE FISHERIES EXHIBITION .- At the final meeting of the General Committee, held on Saturday last, the Prince of WALES in the chair, Mr. BIRK-BECK stated that the total number of visitors was 2,703,051, showing a daily average of 18,388. With regard to the financial results of the exhibition, so far as these could be at present ascertained, up to that date the total expenditure had been £131,392 6s. 1d., and the total receipts £140,346 13s., thus leaving a balance of £8,954 6s. 11d. Adding to this balance rent due by Health Exhibition, £5000; advance to ditto, £1000; valuation of furniture £1564 5s. 8d.; due by railway companies, &c., £234 10.; the total balance was £16,753 25. 7d., against which there were liabilities amounting to £1510 15. 11d., leaving a balance of assets over liabilities of £15,243 os. 8d. With regard to the disposal of the surplus the President moved, "That a sum of £10,000 be invested, with a view to applying the proceeds to the assistance of families who have suffered the loss of a father or husband in the prosecution of his calling as a sea fisherman; and that a further sum of £3000 be applied to the formation of a Fisheries Society, such as was suggested by his Royal Highness the President in his reply to the report of the Executive Committee on October 31, 1883." Earl DUCIE seconded the resolution, which was carried unanimously.

- MARSHALL WILDER, -We have received full reports of the banquet given to the Hon. MARSHALL WILDER on the eighty-sixth anniversary of his birth, on September 22 last, and which have been published in book form. MARSHALL WILDER is one of those men who, while diligent in business, have known how to find time to serve the public in very varied capacities, as testified to by numerous speakers on the occasion in question. Mr. WILDER's reply was marked with his customary eloquence, and dealt with a subject on which he never tires of expatiating -the marvellous progress of his country in horticultural and other matters. While as President of the New England Historic-genealogical Society, Col. WILDER is a laudator tempor is acti, cleaving to what is good and noble in the past, so in his presidency of not one but many societies, having each in its own department progress as its object, he is abreast of time present and prophetic in his forecasts of the

- NEW HVACINTHS .- But few new varieties were shown at the meeting of the Royal Horticultural Society on Tuesday, and perhaps it is not to be won-dered at, as the additions of late years have been both many and valuable. What there was of decided novelty was contributed by Messrs. VEITCH & SONS, and in regard to one of these-Harlequin-there was no room for doubt as to its extraordinary novelty, and everybody admired the stout, well formed bells and handsome symmetrical spike; but the colour was condemned, and yet it was its peculiarly distinct colouring, in common with other high qualities, which gained for it the distinction of a First-class Certificate of Merit; and it is difficult to describe it with anything like accuracy. Really it was of a lively purplish-puce, with a pale centre, fine bells, well formed segments, and a spike of the most approved form. It is single-flowered, and will find a place in the mauve class. Of the two new single blue varie-

ties General Gordon had the First-class Certificate, but General Graham had decidedly the best of it in point of quality. It is a pity the committee did not see their way clear to make this award to both. General Gordon is of a rich shining black-blue, with finely formed bells and a close symmetrical spike, but thinner than one likes to see a new Hyacioth now-a-days. On the other hand, General Graham has a singularly dense and symmetrical spike, the colour glistening reddish violet-purple; something in the way of Duke of Connaught, finely formed segments and good bells. A double yellow variety named Minerva deserves some attention, because a decided addition to a class restricted to very few really good flowers; the colour is of a pale creamyvellow, with a slight tint of reddish-pink along the segments; the segments stout and smooth, the fine, and thickly set on the spike, which is unusual in the case of the double yellows. This is said to be an old seedling, developing unusually good qualities. It deserved a First-class Certificate of Merit. Lady of the Lake is a pale single yellow, with a well-formed spike, and stout symmetrical bells. This is a variety Lord Derby that will improve by cultivation. Improved is an unfortunate name, deeper in colour than Lord Derby, the reverse of the segments quite a rich blue, the surface of the bells slightly tinted with purple-fine and handsome spike. In Messrs. W. CUTBUSH & Son's collection was Marchioness of Lorne, a distinct single yellow of a pale creamy hue, and a slight fleshy stripe, handsome bells and spike, a variety that under good cultivation should be very acceptable for exhibition purposes. In the collection shown by Mr. B. S. WILLIAMS were J. S. Mill and Leonora, two pale yellows, as shown too much in the way of Bird of Paradise. Messrs. VEITCH superb collection of Hyacinths was of incom-& SONS parable quality, the selection almost unique, the spikes massive and splendidly coloured. When before were such examples of La Grandesse, S.W., shown at South Kensington? It is the most perfect white Hyacinth in cultivation.

- NEW EARLY SINGLE TULIPS .- A collection of early single Tulips shown by Mr. B. S. WILLIAMS, on Tuesday last, deserves a passing notice, because it contained a few varieties fresh to English growers. A yellow variety named Ophir d'Or is a large and finely-formed flower of a rich deep yellow colour, beating Canary Bird in size and depth, as well as in richness of colour. Adeline is of a rich cerise-crimson colour in the way of Proserpine, but deeper in colour, though not quite so large in size or fine in build, Hector is an edged flower in the way of Duchesse de Parma, but with a distinct salmon-bronzy base, and a feathering of deep gold; the flowers as large as those of Keizer Kroon, and a good companion to it. These are all varieties well worthy attention. It may be mentioned that among the purple-flowered varieties there is nothing that can touch Van der Neer, both for its rich colouring and splendid build.

- Pelargonium Dresden China. - Quite incidentally some information has been supplied by the raiser of this very interesting floral subject. It would appear that Dresden China was the result of very careful crossing by the Rev. A. RAWSON of two of his seedlings-viz., Maid of Kent and Queen of Stripes. It would appear that Queen of Stripes was a distinctly striped variety, but Mr. RAWSON was always dissatisfied with it, owing to the tinge of pink in the white ground; and his object has been to get rid of this by crossing Queen of Stripes with Maid of Kent, so as to get the required purity of the white and still retain the crumpled edges. In Dresden China Mr. RAWSON believes he has succeeded, but all flaked flowers of this type have a tendency to throw self flowers if not carefully managed, and, therefore, they should be grown in a poor soil. Mr. RAWSON is endeavouring to produce a Pelargonium of the Dresden China type, but with blue instead of pink variegation, and he does not despair of eventually becoming successful. The presence of a bluish tint in the Pelargonium is not new to this flower. In FOSTER's Blue Bell, as also in Blue Boy, by the same raiser, there are to be found shades of blue; so there is reasonable ground for believing that the blue stripe may be secured at no distant date.

MAGNOLIA CONSPICUA.—The large specimen of this striking Chinese species to be seen in the grounds of Gunnersbury House, Acton, is now in the full flush of its early vernal beauty; and, while gene-

rally very free of bloom, it appears this season to have put forth its utmost to produce its snow white blossoms in plenteousness. When half grown the blossoms remind one of an erect form of Lapageria alba; they are then singularly pure, and they are so numerous, as every twig of an immense bush-like tree is covered with flowers. This specimen is growing on the elevated ground on the east side of the mansion, but unhappily exposed to frosty influences, and it may be said never to escape the scathing influences of the spring frosts. They are already leaving their disfiguring mark on the flowers: it is one of the penalties Nature enforces in consequence of its precocity. Perhaps this is the reason why it is so little planted now-a-days, though it makes a handsome bold-leaved plant in summer. And, however large the specimen becomes, it is always characterised by a bush-like growth, and, being symmetrical in outline, takes on when in full bloom the appearance of a pyramid of snow. Some protection from frost might be afforded to a small plant, but when it grows into large size this is a difficult if not almost impossible matter. Perhaps in planting it would be wise to place it on the south or south-west side of a line of tall trees, or a high building, that would afford it some protection; but when it gets into size and widens the area of its growth it gets beyond the confines of the friendly protection, and suffers in consequence.

—— MATTHEWS' STRAWBERRY TILE.—At the two last meetings at South Kensington Mr. John MATTHEWS, of Weston-super-Mare, has exhibited an ingenious tile for placing under Strawberries, and which so completely circumwents the snails and slugs that no longer can they dine or sup on the luscious berries where these tiles are used. They are made of earthenware, in the form of quoits, but convex on the under-side, and cut in two, so that when in position they surround the collar of the plants. Mr. MATTHEWS makes them in two sizes, viz., 15 inches and 18 inches in diameter.

- WHAT'S IN A NAME?-It was rather hard upon a very sweet young lady, Miss MARY CHAN-NING, of somewhere, that the papers should have unanimously described her as POLLIE CHARMING, though doubtless the unintentional compliment was in excellent keeping. In old days we used to terminate the common alias of MARY with a "y," now "POLLY" is "POLLIE," the which, if less endearing, is more fastidious, and it may be refined, hut of that we are far from being assured. However the point for correction, in justice to POLLY, is that, howsoever charming, still the intended appellation of the plant in question was that of Pollie Channing, but by an incorrect rendering upon a card the lady lost the fame which was hers. Yet may not the lady console herself with the reflection that same -and such fame, too-is very fleeting? To how many pretty faces, and to how many manly hirsute ones, too, have plants not been dedicated to be heard of for a year, then disappear for ever? We sometimes wonder whether, in undertaking the onerou work of naming a number of new plants, say, Pelargoniums, Cinerarias, Roses, or similar things, raisers reflect on the questionable compliments they are paying friends, perhaps some near and dear, or others for whom they entertain warm esteem, in thus giving their human appellations to pet flowers, the favourites of to-day, to be chased into eternal oblivion by the favourites of to-morrow. Names, of course, we must have, but there are myriads of appellations that have no personal associations, and in soon forgetting them no heartstrings are strained. The beautiful floral wreath is to-day laid as a loving tribute on the tomb of some dear departed one; a few days and it is withered-a sad memento of grief that, too, is withered and dried. It is hardly worth while to lay appellative wreaths, that too soon decay, on the brows of the living.

— VARIETIES OF RHUBARE.—Mr. EWING's question with reference to the work of the Royal Horticultural Society, in his interesting communication on Rhubarbs, at p. 372, was, to some extent, answered on Tuesday by the exhibition before the Fruit Committee of samples of all the varieties grown at Chiswick. Mr. BARRON classified the varieties as they appeared to stand in relation to one another, and the result amply confirmed previous convictions, that the number of names in circulation is out of all proprition to the number of really distinct varieties.

Taking them as they stood, the Early Red, or Albert, came first. This is the early sort most generally cultivated by market growers, and is distinguished from the next type, Linnæus, or Johnston's St. Martin's, in having the upper side of the stems concave, while in the latter they are convex. To the Early Red or Albert section clearly belonged the sorts sent to Chiswick under the following names by the firms indicated:—Early Red (Lawson), Prince Albert (Lawson), Albert (Barr and Osborn), Royal Albert (Lawson), Albert (Barr and Osborn), Royal Albert (Mitchell and Carter), Salt's Crimson Perfection (Osborn), Linnæus (Barr), and Scotch Mammoth (Bunyard). The next in point of earliness, and distinct as a variety—" Osborn, and Carter), the Victoria (of Lawson), Buckley's Crimson (Barr), Salt's New Empress (Barr), Goliath (Barr), and Johnston's St. Martin's (of Barr, Osborn, Carter, and Lawson). Next came a variety, apparently distinct, grown at Syon House under the name of Bucks Early Red, a small sort hy comparison with the Early Red of the market growers; Dancer's Early Red (Osborn), also distinct; Hawkes' Champagne (Buoyard), and Champagne (Barr), which are the same; Baldey's Scarlet De-fiance, and Crimson Perfection (Carter), which are identical; Victoria Late, Victoria (Barr), and John-ston's St. Martin's (Osborn), all alike, and late; and latest of all, only now a few inches high, Stott's Monarch (Lawson). Hawkes' Champagne is an old sort, which, on account of its sterling good qualities, has been kept pure by Messrs. Bunyard, and one or two other growers; and the committee, by awarding it a First-class Certificate, confirmed the opinion of those who knew its merits, that it ought to be more widely cultivated. It is early, of a good colour, very tender, and a very free grower.

— A VEGETABLE BOUQUET.—Quite a novelly in the way of a bouquet was produced by Mr. ALDOUS, florist, of South Kensington, a few days since. A lady was desirous of presenting a gentleman with a bouquet—this being the ladies' privilege in Leap Year—and gave the order that culinary vegetables only were to be employed in its fabrication, which was tastefully carried out. It consisted of the following items, in their smaller forms:—Forced Carrots, in two shapes, long and short; Radishes the same, Brussels Sprouts, variegated Scotch Kale, curled Endive, and the broad-leaved Datavian variety, Parsley being used instead of the usual Fern fronds seen in ordinary bouquets. The whole, including the holder, measured rather more than 15 inches in diameter, and was mounted in the usual way with the help of wire.

- STRAWBERRY MARGUERITE. - There have been some extraordinary large examples of this well known variety brought under our notice by Mr. A. SHARPE, of West End Gardens, Thorpe, by Egham, which are certainly worthy of special mention, the more so, as is well understood by growers, market or otherwise, that if Strawberries are obtained early in March they are not usually either remarkable for size or colour, and when such kinds as Vicomtesse Héricart de Thury, Sir J. Paxton, or Sir Charles Napier are grown for early purposes the produce may be abundant in numbers but is not of any great size. The fruit from Thorpe is grown at first in brick pits close to the glass, plunged in a mild hotbed of leaves, and when coming into bloom are moved to shelves about 2 feet from the glass in Cucumber-houses and early vineries. The plants in 32's are placed in corresponding saucers, and are watered two or three times sponding saucers, and are watered two of three than weekly with a mild dilution of Clay's Fertiliser and other nitrogenous manures. By the time the fruit has set, in which it is aided in all cases by artificial impregnation, the roots have got down into the saucers, which are seemingly not allowed to become empty, so that a constant supply of food is at hand. This has, of course, a tendency to develope a large even crop of berries, although the compost in which the plants are potted must also have a certain effect, notwithstanding the fact that that has been in the pots since August last, and has therefore become partially exhausted by the plant, and by having its fertilising properties washed out of it by rains and watering. The compost consists of the ordinary loam of the garden, night soil in a decayed state, in the proportion of a shovelfull to a barrowload, and a little salt and lime. The plants as they stood in closely packed array on the long lines of shelves, made quite a picture of robust health and fruitfuloess not often seen, the fruit being of all sizes, from those of 2 inches deep and as much in breadth, and under; and as many as sixteen being seen on a plant. About 20 lb. had been picked on two occasions this month—those from the first gathering being those which came under our notice. At an early date, we shall have the pleasure of giving some useful items of practice in market growing, culled from this garden, that may be of interest to our readers.

"Garden Work." — Oae of the principal difficulties in the way of garden work now.a-days is the necessity of reading the numerous chronicles, journals, magazines, illustrations, dictionaries, cyclopedias, assistants, epitomes, and other publications of the difficulties arising from abundant supply, and the consequent embarrasment as to selection. As to this last matter, things have a way of settling themselves by a process of natural adaptation or accommodation to circumstances, hence we have no doubt our young friend, Garden Work, which made its first appearance with a bunch of Narcissus, under the auspices of the Journal, on Wednesday last, will speedily fall into its allotted place and worthily fill its own appropriate niche. It seems to us an excellent pennyworth, and we do not think that those who invest in this pennyworth of wisdom run the slightest chance of being "pound foolish" in consequence.

- MARKET GREENS .- With all kinds of winter greens a drug in the market—and, indeed, so abundant that, to use the words of a grower, "You can't give them away "-it would be interesting to learn how far the people of the metropolis and surrounding districts, the vast army of consumers, are benefited by the exceeding plenty. The season has been marvellously favourable to the development of all kinds of greenstuffs, so much so that almost ere the end of March is reached Turnip-tops will have become useless, so very precocious are they, and in such haste to bloom. One of the most popular and widely grown of greens, purple-sprouting Broccoli, has come in with a rush, so that immense breadths are being cleared off with wondrous rapidity; indeed, the delay of a few days means spoiling. Then, to make matters worse, not only all kinds of Kales, and the Brussels tops, but even autumn-planted Cabbages are bolting, and there seems in the Brassica family an unanimous haste to be seeding. We learn of loads of Turnip-tops going at 4d. per sack-a price that leaves the grower the interesting problem to solve of how to get rich out of Not a few are having their breadths eaten off with sheep, and are thankful that a flock of these very profitable animals are to be had. We shall no doubt have to pay the piper presently for this present abundance. In a week or two only the white Broccoli and Cabbages will remaio, and when those useful kinds are gone-and the mild weather will not spare them either-there must be a long interregnum ere Peas, Beaos, and other largely grown vegetables, are ready. Blessed indeed will those be who have good stocks of early Cauliflowers and Spinach, with Seakale and Asparagus, to fill up the void Nature has thus so arbitrarily created.

- THE RANUNCULUS .- While the fine varieties of the Anemone coronaria are receiving a good share of attention, the beautiful forms of the Ranunculus are sadly neglected. It is not that there is any difficulty in obtaining roots, for fine mixtures of the Persian Rapunculus and the Turban varieties in colour can be had from the seedsmen who import Dutch bulbs in the autumn. Possibly some of the fine varieties raised by the late Mr. Tyso and others are extant-a few Northern growers probably have them, but they are not propagated for sale as they were years ago. The usual time for planting Ranunculus is in March, and the best way is to prepare a bed which should be fairly rich, and as soon as the weather is dry and mild plant. Planting is done in rows, 6 inches or so apart, and the roots 4 inches or a little more apart in the lines. They should be placed 11 inch below the surface, pressing the roots firmly into the drill drawn for planting, and then covering level. An ordinary garden trowel can be used for drawing drills. Those who grow flowers for market are planting Ranunculus more extensively than they used to do, finding that the flowers obtain a ready sale and are much esteemed. The roots must be lifted at the end of the summer, dried, and put away till planting time comes round again.

- THE ROYAL HORTICULTURAL SOCIETY. -"A Late Fellow" writes :- "Permit me to call atten-tion to the mismanagement on the part of the officials ol the Royal Horticultural Society in not providing for the public, on the occasion of their Hyacinth show, the slightest clue either how to get into their gardens, or, when there, how to get to the Hyacinth At the only opened entrance, the so-called 'orchard-house entrance,' a most dilapidated structure, the only notice-board outside and inside belonged to the 'Ecclesiastical Art Exhibition,' consequently ladies bound to the 'Hyacinth show' went wandering down Exhibition Road to the other entrance, and, when there, had, much to their disgust, to retrace their steps to the 'Ecclesiastical Art entrance' again! Why could not the officials have put a few handbills outside that there was a show? And inside the same confusion existed, the corridors being in the hands of workmen preparing for the 'Food Exhibition.' wonder the Horticultural Society is at such a discount; and what can be more absurd than during the afternoon for an official to propose to the general public attending the show a list of names of candidates for the Fellowship, and asking the public whether they shall be deemed worthy of admittance? How different (quantum mulatur ab illo) from those days when one used to drive down to Chiswick and listen to the music of some six of the finest bands; now we only hear half a band! March 26,"

- THE WEATHER .- General remarks on the temperature, rainfall, and duration of bright sunshine, for agricultural and sanitary purposes, during the week ending March 24, issued by the Meteorological Office, London: - The weather has been rather unsettled and showery in the extreme west and north, with hail or sleet on the 20th and 21st, but in all other parts of the kingdom it has been generally and other parts of the kingson in the sector generally fine and dry. The temperature has varied from 4, above the mean in "Eogland, E.," and the "Midland Counties," to 1° above it in "freland, N." At the commencement of the period readings were uniformly high, but gradually fell, till at its close they were rather low for the season. The maxima, they were rather low for the season. The maxima, which were registered in most places on the 18th, ranged from 66' in "England, S.," 64' in "England, E.," and 63' in the "Midland Counties," to 55' in "Freland, N.," and 54' in "Scotland, N." The minima were generally recorded on the 23' or 24th, and varied from 27' in the "Midland Counties," to 32' in the north and west of Scotland and the south of Ireland, while in the "Channel Islands" the lowest reading was 44'. The rainfall has been a little more than the mean in "Scotland, N.," and about equal to it in "Ireland, N.," but less in all other districts. Over England the fall has been very slight. Eight sunships has been more N.," and about equar to less in all other districts. Over En prevalent than for many years past, the percentages of possible duration ranging from 24 in "Scotland, N.," and 26 in "Ireland, N.," to 48 in "England, E.," and 60 in the "Channel Islands." Depressions Depressions served :- Pressure has been generally bigl France, and lowest to the nort-westward and ward of our islands and over Scandinavia. The ward of our islands and over Scandinavia. The only depression of importance which came within our immediate neighbourhood was one which made its appearance off our north-west coasts on the 19th, and, travelling slowly in a north-easterly and east-north-easterly direction, dispersed over Scandinavia towards the end of the period. The wind during the early part of the week was between S. and S.W., but subsequently vecred to W. and N.W. The southerly to south-westerly wind blew strongly at our western and north-western stations on the 18th and western and north-western stations on the 18th and 19th, and the westerly wind on the day following fached the force of a fresh or strong gale at many of our more northern stations, but the north-westerly wind was generally light or moderate.

— Gardening Appointments, — Mr. James Chaplin, lately gardener to General Sir John Douglas, Eart, of Glenfinart, Ardentiny, N.B., to William B. Leaf, Esq., Heathlands, Streatham, London.—Mr. Stuart Compton, lately Foreman at Preston Grange, Dalkeith, N.B., to A. S. Palmer, Seq., Usworth Hall, county Durham.—Mr. Edward Nicol, lately Gardener at the Elms, Berwick-on-Tweed, to Cecil H. Browne, Esq., Comber House, Clandy, county Derry.—Mr. Charles Sheppers, lately Gardener at Kingsbury House, Middlesen, as Gardener to E. Crabb, Esq., Great Glemham House, Saxmundham, Suffolk.—Mr. W. G. WILSON as Gardener to W. F. Spencer, Esq., Spring Grove, Ibewiley.—Mr. James Godperey, late Foreman at Sulby Hall, Rugby, as Gardener to Mrs. Fickering, Brightwell Park, Tetsworth.—Mr. C. Marshall, lately Gardener at Derrystone, Abergavenny, as Gardecer to C. N. Newdegatt, Esq., M.P., Arbuy Hall, Nuneaton, Warwick,

COLONIAL NOTES.

Mr. JOHN FERGUSON has published, through Messrs. Sampson, Low & Co., a small volume entitled Ceylon in 1883, with a heavy title-page so laden with detail that it might almost serve as a table of contents of itself. Dealing with Ceylon from the time of Solomon to that of Sir Arthur Gordon, it gives brief accounts of the history and physical con-formation of the island; its progress, the principal crops, Coffee, Cocoa-nuts, Cinchona, Tea, and a great variety of more or less cognate subjects, no fewer than forty-eight pages being taken up with a description of an elephant "kraal" held at Labergama for the entertainment of the Princes Albert Victor and George of Wales. The contents of the volume were intended to form the subject of a paper to be read before the Colonial Institute, and the pages have not had the advantage of the author's revision facts it is requisite to bear in mind in gauging the merits of the volume. What we have, in fact, is an interesting sketch, rather than a complete monograph. The coffee industry is in a depressed condition owing to the prevalence of leaf-disease, but as some compensation Cinchona now occupies 40,000 acres, yielding 6,000,000 lb. of bark, and Tea 1,500,000 lb. Cocoa and Caoutchouc are also being introduced, and promise satisfactory results.

OUR NATIVE FERNS.

My plea for British Ferns has, I am very pleased to see, touched a sympathetic chord in the breast of your frequent contributor, Mr. A. D. Webster, whom I thank for so kindly seconding my effort to obtain for this much-neglected branch of our native flora the recognition it so certainly merits. I see, however, that he refers to expense as an obstacle to the popularisation of most of the beautiful and curious forms which I named, and I therefore may be permitted to point out that the list I gave was intended to indicate the most marked and contrasted varieties, by way of giving an idea, however meagre, of the scope of fancy in which Dame Nature indulges with these special pets of hers, despite the oblivion to which scientific botanists would, apparently, permit them to be consigned. Take, for instance, two extremes of variation which occur in the genus Athyrium (Lady Fern), viz., A. f. f. var. kalothrix-i.e., filix' feemina (beautiful hair)-Stansfield, and A. f. f. var. velutina, Stansfield, the former of which is of normal shape, but is so delicate in structure and division that the Ironds appear to be formed of filaments of the finest spun glass of the daintiest emerald hue, forming when well grown a gem of vegetation which, I can boldly assert, none of the much-prized exotics-except, it may be, a few of the filmy Ferns -can ever approach in its special type of beauty. The other form, named A. f. f. var. velutina, varies, on the other hand, in an altogether different direction, forming what may be termed the ne plus ultra of cristatum, the rachis of the fronds ramifying to such an extraordinary extent that they form together a spherical mass of finely divided toliage exactly resembling a compact ball of velvet, whence the specific name.

I have instanced these two forms for a special reason, viz., because though so extreme in their variation from the one normal type whence they both sprang, they are not the outcome, as are our florists' triumphs, of long-continued selection from generation after generation of slightly varying seedlings, born of repeated crossings of already varied types, but are both the immediate offspring of two wild sports from the normal, viz., A. f. f. plumosum, Horsfall (parent of kalothrix), and A. f. f. acrocladon (parent of velutina), both found in Yorkshire; thus, though a greater contrast can hardly be imagined in one family than these two plants present, it will be seen that the apparent extreme of variation [in one particular direction] has been reached in two strides. Another equally extraordinary departure from the same normal form, yet beyond all doubt the direct offspring from it, is A. f. f. var. Victoriæ, in which all the pinnæ are double, and set upon the rachis at nearly right angles to each other, while the apices of the frond and the pinnæ are beautifully crested; even the ultimate divisions (pinnules) of the original froud, part of which it possesses, are divided and the divisions set at the same angle to each other as are the pinnæ. This Fern was found wild by a roadside in Scotland, and no intermediate form has yet been discovered. Did space permit many instances could be given of this singular faculty possessed by our common British Ferns of producing at one leap forms differing so widely in character as at times to puzzle even the experienced finder as to the family to which they belong—a faculty which becomes the more striking when it is borne in mind that in the large majority of cases they reproduce their peculiarities perfectly from their spores.

Every one with a hobby is apt to regard his geese as swans, and to estimate as beauties what to un-biassed eyes are merely abnormalities, and perhaps ngly ones. I must, however, deprecate the idea that this is the case with the majority of our British Fern varieties, many of which, like those I have cited, possess an individuality, a delicacy, and a heauty which is all their own, and need not the roseate spectacles of the specialist in order to be appreciated.

Referring again to Mr. Webster's communication, I would point out that since the bulk of even the best varieties are reproduced truly from their spores, while many are capable of being multiplied by division, or by means of the curious viviparousness which characterises many of the abnormal forms, it is manifest that the cost of even the best is ruled by the demand, which, all inadequate as it is at present for the merits of these lovely plants, is yet sufficient to enable the few nurserymen who make them a speciality to supply them at prices (in some cases a few pence) which multiplied tenfold would not be grudged for plants of a tithe of their merits, but which happen for the moment to bask in the sunshine of fashion.

Finally, I would adduce an additional plea for the culture of our native Ferns which goes far sã a set-off against possible costliness, viz., their longevity. A house flower of almost any kind soon becomes drawn up and unsightly; a Fern, on the contrary, needs only parting from time to time, its divisions forming welcome gifts to admiring friends, and with ordinary acre it will live as long as its owner; thus virtually becoming, not merely "a thing of beauty," but "a joy for ever" into the bargain. Charles T. Druery, Horticultural Club.

- I quite agree with Mr. Stansfield that the high price of British Ferns is mainly owing to the limited demand for these plants, other hand, he must admit that the demand is to some extent regulated by the price. Allow me to ask the question, Have popular Ferns of late years been reduced in price? I should answer No; and in corroboration of the statement would draw attention to the Killarney Fern (Trichomanes radicans), which, although eagerly sought after, is quite as high priced in most lists to-day as it was a dozen years ago. No doubt this may to some extent be accounted for by its rarity, but then it is readily enough propagated, and if plants were offered at one-half their present price I have no doubt the demand would equal the supply. Mr. Stansfield also places a query to my statement regarding the high price of Ferns, but that this is perfectly correct when compared with that of other plants is fully exemplified in Mr. Stansfield's own consecutive catalogues of British Ferns and Hardy Perennial and Alpine Plants, where the average price of these latter is exactly one-fourth that of Ferns. Now to any one about to stock a garden this difference in many cases must be a serious consideration, and weigh heavily in favour of discarding the Ferns for the more showy, though far less interesting, alpine and herbaceous plants. Mrs. Helen E. Watney need not despair of the Carnarvonshire Ferns becoming extinct by the too pressing attention of " collectors. for the Snowdon range of hills is far too extensive, as well as difficult of access, to render anything like extermination, at least of most species, an utter impossibility. One or two, such as the forked Spleenwort (Asplenium septentrionale), alternate-leaved Spleenwort (A. alternifolium), and Woodsias, may and will no doubt ere long become Ferns of the past in Carnarvonshire, for their habitat is recorded pretty accurately in at least half a dozen books on British Ferns; but I should be extremely sorry did any note of mine lead to the extermination of even a single species, and this has been my special reason for not recording the exact locality of several rare plants on which I have communicated notes of late. In conclusion, I think all lovers of our native Ferns should feel grateful to Mr. Stansfield for the untiring energy he bestows on the raising and cultivating of these plants, and their numerous distinct varieties, and of which his collection is certainly second to none of its kind in the country. A. D. Webster.

SAXIFRAGA OPPOSITIFOLIA.

THOSE who have wandered in our Welsh and Scottish mountains will remember the delight with which they welcomed the rosy-liale flowers of this little gem; the Swiss tourist also will recognise it as familiar; but what shall we say of the variety we now figure (fig. 77), from the Pyrenees, and which is the variety known as pyrenaica? Its flowers are twice the size even of the largest oppositifolia, and the habit Is more erect. How fine a thing it is for the rockwork, or for pot-culture in a cool frame, our fullustration will show. We are indebted to Messrs. Backhouse, of York, for the opportunity of figuring the plant, and trust that in the interest of the flower-loving public they have a large stock of it.

Home Correspondence.

Resting-spores of Peronospora ganglioniformis (Berk.).—I have received some magnificent preparations of these curious bodies from the Rev. J. E. Vize, of Forden, Welshpool. Mr. Vize remembered seeing some Lettuces last year invaded by the Peronospora, and thinking the dead Lettuce stems might carry the oospores, he went to the spot and found them in considerable numbers. The oospores occur between the spiral vessels and the external shell of the cld Lettuce stems. They grow in enormous conglomerated masses; so profuse is this, their natural habit of growth, that under the microscope the masses of oospores look like the roe of some fish, W. G. S.

Daffodils: Primrose Peerless: Butter and Eggs.—I send five flowers from the only plant we have of Primrose Peerless (as the old large Daffodil with the short cup of deeper yellow was formerly named). These five flowers show the gradual doubling of the whole thing. The one pure single bloom is the only one untainted with doubleness that has appeared this season upon the plant. Next year the old name will certainty be a misnomer, for the beauty of the flower will have vanished with its singleness. We have now divided the roots, and separated quite the only part that bore the single flower. Nothing will, however, stop, it is to be feared, this tendency to double, E. V. B. [The flowers received are all forms of Narcissus incomparabilis aurantius plenus, the Butter and Eggs of English gardens. Primrose Peerless is Parkinson's name for the single form, which "F. V. B." need not fear will become double, the tendency in Daffodils being for double ones to become single, and not for single ones to become double. Ed...]

Weigela hortensis nivea.—This is a very handsome hardy shrub for out-of-doors culture, and bushes of it laden with its white flowers out-of-doors are very attractive. Some bushes of it now in flower in Messrs. Veitch's nursery at Combe Wood prove it to he an excellent hardy shrub for forcing; a few plants of it forced and arranged in the greenhouse or conservatory would be welcome at any season, but especially so in the early spring months. S. D.

Resting - spores of Peronospora Schleideniana (Ung.).— I have received from Mr. Vize the oospores of the Peronospora which sets up putrescence in Onions. They are few in number, and isolated in growth. They are a little larger in size than the oospores of P. ganglioniformis, as was to be expected, the acrospores being larger. Mr. Vize found these bodies in a wet, decayed patch of Onion. He attributes their rarity to the rarity of the Peronospora last season. W. G. S.

Old-fashioned Flowers.—I can remember two of the Roses mentioned by "E. V, B." growing in the dold flower garden at my own house. There was the Double Velvet, a very rich, dark claret colour, with petals as soft-looking as the best Genoa labric, and the Marble, a red and white single Rose, which my mother called the Lancastrian Rose, but which the gardener termed Marbly Rose. The Velvet was a lovely flower; I oever meet with it oow, though I have often looked for it in old gardens. I do not think I have ever seen a Rose to compare with it in point of real beauty, but perhaps it is the "distance of time that lends enchantment" to my memory. If I were to see it again it might possibly be a case of "Harrow mutton pies," as a relative of mine used to tell me when I expressed disappointment at not finding fondly remembered things and places unaltered. He had gone into the army after leaving Harrow, and on his return from foreign service arranged with a brother officer and former chum to go down and taste the mutton pies they had often and fondly talked about when camping out.

They went—the old shop was there, and a goodly show of pies graced the counter; but their taste in respect to pastry, and mutton pies in particular, had greatly altered, and so may my floral affections—the Double Velvet Rose of my girlhood, and the Double Velvet Rose of the present day (if it exists) may appear in very different aspects. I have a dim sort of idea that I have heard Finks called Gentles. Ben Johnson wrote of the Clove Pink as Sops in Wine, Chaucer terms it Clow Gilofre, but I cannot find the name of Flower Gentle. Very probably your correspondent may discens something of these old flowers in Hone's Year Eook or Hone's Everyday Book; my volumes are packed up: if this were not the case, I would look them over. Helen E. Walney, P.S.—You know that according to fable all Roses were originally white, but Venus run their thorns into her feet and dyed them. feet and dyed them.

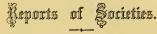
Chionodoxa Luciliæ. — So lovely a flower as this would surely need no words of praise were it as well known in our gardens as it should be. On its first appearing, about two weeks ago, we felt a little disappointment; too weak and small a flower this

see Dr. Hance's papers in the Journal of Botany, 1870, pp. 274, 275, and 1878, pp. 6-8. F. B. F.

Anthurium Rothschildianum,—In the houses devoted to new plants in Messrs. Veitch's nursery there are a number of small plants in flower of this distinct and very pretty hybrid. They vary much in the form of the spotting, and as the plants increase in strength so do the spathes increase very rapidly in size. The more one sees of this plant the more is its heauty discerned and appreciated. A. ferriernes x. also in flower, is ruite distinct from anythine in ense x, also in flower, is quite distinct from anything in form and colour. It is a showy plant and a good addition to this class. It is between A. Andreanum and A. ornatum, the spathes being rosy-red in colour.

Anemone apennina,—This charming plant is now at its best in the South of England, and merits a passing word of comment. When seen growing shorad patches in a wild, or (should we say?) semi-wild state, and associated with other subjects of a kindred nature, it becomes at once an object of singular interest and beauty to lovers of Nature who happen

and, like the latter, it does not appear to be at all fastidious as to soil, climate, or situation, so long as it is left pretty much to itself. Broad patches of some yards in extent are very showy when in flower, and may be seen from a considerable distance, giving one that impracing of a cloth of gold. 3. the impression of a cloth of gold. 7. H.



Royal Horticultural: March 25.

Royal Horticultural: March 25.
SCIENTIFIC COMMITTEE.—Sir J. D. Hooker,
K.C.S.I., in the chair. Present: Messrs, MacLachlan, Ridley, Pascoe, Murray, Mangles, W. G.
Smith, Boulger, Houston, G. F. Wilson, E. S.
Loder, Grote, Drs. Lowe and Masters, and the
Rev, G. Henslow (Secretary).

Potato Disease.—A conversation took place as to
the experiments to he carried out at Chiswick this
season, and a committee was nominated to watch the
results.

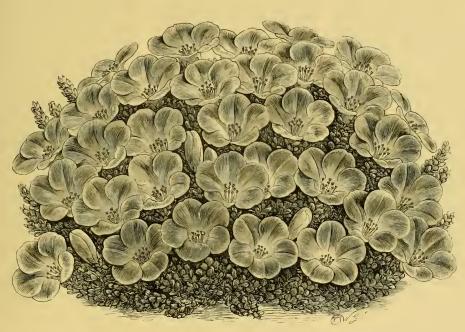


FIG. 77.-SAXIFRAGA PYRENAICA SUPERBA: FLOWERS ROSY-LILAC. (SEE P. 418.)

seemed to be called the "Glory of the Snow!" Since then, however, it has arisen in full and perfect beauty, to meet the hot glow of sunshine that has lately blessed the country. We have as yet only one little round bed filled with it, but another season it must glorify in masses the dull brown of our borders. If the common blue Squill has hitherto satisfied us with its common due scaps of long unfaded, how much most blue, which stays so long unfaded, how much most shall we rejoice in the surpassing beauty of this newer flower, when once it has become numerous caough to take its place amongst the usual early flowers of March 2 L. V. B., March 19.

Abies Fortunei .- Dr. Hance in the Journal of Abies Fortunei.—Dr. Hance in the Journal of Botany, 1882, p. 39, came to the same conclusion as you with reference to the genus of this plant, and alludes to the deciduous character of the seed-scales. Specimens were collected at Foo-chow by Dr. Hance's son in 1873, and by Mr. Hancock, of the Chinese Customs Service, in 1881. As to your inference, that this tree was introduced to Foo-chow because it was found near a temple, I believe the very reverse is the truth, as the fact that any given tree is found growing around temples is looked on as the strongest proof that the trees form and of the indigenous were proof that the trees form part of the indigenous vege-tation of the district, and which the Chinese have been destroying for fuel and house-building. As to this

to have the good fortune to meet with it. Its flowers, which are of a beautiful celestial blue in colour, are such as cannot fail to attract the attention of the merest tyro in gardening or botanical pursuits, and the only wonder in connection with it is that we do the only wonder in connection with it is that we do not meet with it more frequently in our English gardens than we do, seeing that it is so well adapted for growing on rockwork, in the herbaceus border, or in any odd corner and out-of-the-way place. Probably it has the most pleasing and natural effect when seen growing on the steep slope of some deep and precipitous ravine with an awe-inspiring look, and far away out of arm's reach, or in some diligie or delil underneath the overhanging branches of trees, or, again, by the sides of woodland walks. Certain it is that, wherever it grows, whether under cultivation or that, wherever it grows, whether under cultivation or in a wild state, it is one of our prettiest early spring flowering plants. J. H.

Anemone ranunculoides.—Like the foregoing, and which may appropriately be described as its worthy congener, is a plant richly deserving the attention of cultivators of hardy herhaceous and alpine plants. Being of a deep vellow in colour, and, as its specific name implies, resembling to a certain extent our common field Buttercup, it forms a striking contrast when growing side by side with A. apenoina,

Rhododendron Wightii, var. ?—Mr. Mangles showed a white-flowered Rhododendron, presumably the white variety of R. Wightii. The leaves are oblong-acute, with rusty down on the under-surface, the flowers in a compact hemispherical truss, each of medium size, translucent, white, with a reddish spot within at the base. The R. Wighti, as figured in Hooker's Sibkim Rhododendrons, has yellow flowers thickly spotted with reddish spots. In 1856 it is noted in the Gardeners' Chronicle, p. 213, that R. Wightii bloomed in Messrs, Standish and Noble's nursery at Bagehot. "The flowers of Wightii are not equal to those represented in the Rhododendrons of Sibkim Himalaya... When first opened the blooms of Wightii are of a pale prinnrose, changing, howeer, in a day or two to pure white. They are of good shape, 3 inches across the mouth, and the petals have a very singular and beautiful appearance from being nearly transparent." The perfume of the flowers is also alluded to. In the Kew Herbarium is a specimen from Lachen in Sikkim, alt. 12,000 feet, labelled by Sir Joseph Hooker as R. Wightii (flower white). There is also a record of its having flowered at Combe Royal, but the flowers were white. Herr Otto Forster also flowered the plant some years ago, the blossoms being white. Mr. Mangles' specimen from an impoverished

plant seemed to be identical with R. Wightii as ligured, except, as above said, in the colour of the flowers.

Howers,

Disease of Orchid Leaves,—Mr, W, G, Smith exhibited leaves of Vanda and Cattleya inlested with "black spot," in which spots the fungus named Protomyces concomians, B, was present.

Oranges with Smith Fanguss.—Mr, Smith also exhibited Oranges blackened with the smut fungus—Concodiumestri

Capnodium citri.

Cappodium citci.
Germination of Bunt Spores,—Mr. Smith drew attention to the fact that the Rev. M. J. Berkeley, in vol. ii. of the Journal of the Royal Horticultural Society, 1847, had described the secondary conjugating spores of Tilletia caries, Tul., as furnished with septa. Tulasne, seven years afterwards, in an elaborate paper, Ann. des Sc. Nat., 1854, illustrated them as nonseptate; but quite recently Dr. Oscar Brefeld in his work on Smuts and Bunt had again shown them as distinctly sentate, and so after a large of nearly forty.

work on Sneus and Dinn had again shown them is distinctly septate; and so after a lapse of nearly forty years confirming Mr. Berkeley's views as to the septa. Corn Mildew and Barberry Blight.—Mr. W. G. Smith said it was generally admitted that the Puccinia of Corn mildew was perenoial or hereditary, as in the Puccinia of Celery, Hollybooks, Sweet Williams, &c., but it was more difficult to prove that the Æcidium fungus of Barberies was hereditary, on account of the Barberies but his fungus. Mr. Plowigens who however, last summer forwarded however, last summer forwarded the berries of Mahonia Aquifolium invaded by the Æcidium; and Mr. Smith, think-ing these berries might possibly produce seedlings dis-eased with Æcidium berberidis, had them planted during the summer and autumn in three series, allowing each successive overlapping series three months for germination. Not a single seed germinated, series of twelve berries was then sent on to Mr. E Williams, of Holloway, who attempted, under favourable circumstances, to cause them to germinate, but not one cane up. Mr. Barron is now experimenting with others at Chiewick, Mr. Smith thought these experiments indicated that the plasma of the parasite had reached the seed, and that if the berries had been less badly affected, diseased seedlings would have appeared, as in the well known cases of the diseased Celery, Sweet William, and Hollyhock seedlings. The berries, being badly affected, were killed by the fungus. Under these circumstances, the deductions made from the germination of spores on leaves, said Mr. Smith, should be received with caution, as the lastic separemented upon were already saturated with able circumstances, to cause them to germinate, but not one came up. Mr. Barron is now experimenting plants experimented upon were already saturated with hereditary disease. Primula elatior.—Mr. Boulger exhibited a depauperated specimen grown in a north aspect in a

London garden.

Cardamine hirsuta. — Mr. Houston showed a flower-bud in the position of one of the short stamens

in a flower of this plant.

Plants exhibited .- Messrs. G. F. Wilson, Loder, and Dr. Lowe exhibited numerous specimens of interest ing hardy plants, the mere enumeration of which would be of no interest. Among Dr. Lowe's plants was an annual, Cerinthe major, grown from seed collected near Naples. About the same time seed from a finer an annual, cerimine major, grown from sect confected mear Naples. About the same time seed from a finer variety with brown spotted flowers was obtained from Albano. The seeds from each source produced yellow flowers, and this yellow colour was maintained year by year in the seedling plants until this year, when the brown form has suddenly re-

Diseased Apples.—Some Apples were shown with cracked rinds, the work of a lungus, Cladosporium dendriticum, and with black patches produced by Septoria Ralfsii,

FLORAL COMMITTEE .- Present in Section A .:-FLORAL COMMITTEE.—Present in Section A:—
Thomas Moore, Esq., in the chair; Messts. J.
Fraser, H. Herbst, J. Iludson, H. Ebbage, H. Williams, H. Ballantine, J. Dominy, T. O'Brien, E.
Hill, J. Woodbridge, F. Kinghorn, and the Rev. G.
Henslow. Section B:—Shirley Hibberd, Esq., in
the chair; Messts. H. Bennett, W. Bealby, J. James,
J. Child, G. F. Wilson, D. C. Lathbury, and W. B.
Kellock. The display on this occasion was superior
in every respect to the last, as was to be expected,
most of the thines here staged being available for most of the things here staged being available for "the Park" show on Wednesday. The wondrous show of Daffodils gave us a foretaste of the Narcissus show of Dationis gave us a foretaste of the Nacissus efectival which is yet to come in the course of a few days, in the large collections shown respectively by Messrs, Barr & Son, of Covent Garden; Mr. Thomas Ware, Tottenham; and Messrs. Collins Bros. & Co., Waterloo Road. Anemone fulgens, in single and double forms, added brilliancy to Messrs. Barr & Son's interesting stand; while various other plants and the control of the standard of the control of the standard of the control of the standard of the sta & Son's interesting stand; while various other plants lent additional attraction, such as Puschkinia libanotica compacta, two varieties of Triteleia, a few Muscari, among which M. Helderichii was of an attractive blue tint; and a few spikes of the curiously marked Fritillaria tristis. This collection was awarded a Silver Banksian Medal. Mr. Ware's stand contained many pretty early-flowering useful subjects for the horticulturist, other than Narcissus, in much variety. We draw attention to a few of the

more striking, such as Lachenalia pallida, L. tigrina, the singularly coloured Muscari violaceum, of greenish shaded lilac, the tube mouth purple, with white anthers; the bright-tinted dwarf Primula rosea, a fine rock plant; the pretty Irid, Morea fimbriata, pale lilac, with a broad orange band on two opposite petals; the pale yellow Erythronium grandiflorum; the white Sisyrinchium grandiflorum album; Chionodoxa Luciliæ, Iris tuberosa, and various Muscari and Triteleias. Mr. Ware obtained a Bronze Banksian Medal for his Mr. Ware obtained a Bronze Banksian Medal for his exceedingly interesting collection. The collection of Messrs. Collins Bros. & Co. was nicely put up in elegantly shaped small bottles. The Narcissi were enhanced in effect by the addition of a number of scarlet Anemones. The group of Hyacinths, consisting of 130 plants, exhibited by Messrs. Veitch & Sons, exceeded in beauty perhaps anything that has been shown in that way, the spikes being massive, the colours in several instances quite novel, and the selection and arrangement of the various colours in the group well done. A more detailed account of these the group well done. A more detailed account of these plants will be found in another columo (p. 409). They were awarded a Silver-gilt Eanksian Medal. Mr. B. S. Williams, Victoria and Paradise Nurseries, Holloway, deservedly obtained the Society's Gold Medal for a fine general collection of plants, of which the leading feature was decidedly the superb lot of Hyaleading feature was decidedly the superb lot of Hyacinths, consisting of 180 examples, among them being very fine specimens of such old well-known sorts as Mont Blanc, Von Schiller, Czar Peter, Lord Derby, King of Blues, Ida, one of the finest of the yellow section; La Grandesse, Gigantea, Captain Boynton, a pale blue single, with very large starty bells; De Candolle, Lord Macaulay, Starlight. Less well-known sorts were Obelisk, a pale primrose; Master-piece, a fine blackish-purple; Lord Mayo, a purple, with a white centre; and Roi des Belges, a bright crimson. Some fine large pots of Lily of the Valley, and a group of well bloomed Azalea mollis in several colours were attractive, as were also some pots of single Tulips, alluded to in another column. A pale yellow Narcissus of the Jonquil section, named Newton; N. gloriosus, white with an orange cup, and Sir Walter Scott, a single white Narcissus with an orange cup, were each excellent examples, dwarf, an orange cup, were each excellent examples, dwarf, and full of bloom. Some good varieties of Cyclamen persicum of the usual colours were also showe by this exhibitor. Messrs, W. Cutbush & Son showed two specimens of Hyacinths that evidenced superior culspecimens of Hyacinths that evidenced superior culture, and excellent spikes were to be seen of Kiog of the Blues. The Shah, Senora, Koo-i-noor, Linneus, Florence Nightingale, Margo, Grand Maître, Lord Macaulay, and other well-known kinds. Single Tulips of such sorts as Proserpioe, Joost von Vondel, Vermilion Erilliant, and Queen of Violets. A pretty Narcissus, named Phyllis, was shown by the firm, yellow, sweet-scented, and well bloomed. For the above collection Messrs. Cutbush & Son were awarded as Silverchil Enghisian Medal. To Mr. the above collection Messrs. Cutbush & Son were awarded a Silver-gilt Banksian Medal. To Mr. Anthony Waterer, Knap Hill, a Bronze Medal was awarded for a well-chosen collection of bardy Primroses and Polyanthuses, Primrose Hyde Park Yellow, a telling yellow hose-in-hose variety; and three plants of Fieris japonica, an attractive hardy shrub, which we have seen often of late, and of which too much cannot be said in praise. Mr. R. Dean, Ealing, showed a beautiful pan of Aubrietia violacea—a plant that mut prove of value in the spring flower garden, both for its earliness, its colour, which is more purple than is designated by its name, and its abundant bloom; a very double lemon-coloured Chrysanthemum cornarium, several seedlings of Primals Sieboldi, the a very double remon-control of Primula Sieboldi, the most useful Myosotis dissitifiora alba (in good bloom), and M, dissitifiora Perfection; also his own particular strain of Wallflower, Bedfont Vellow, which as seen stands unrivalled for compact growth, perfume, and colour—just the plant for massing, instead of the "leggy" things too often used. Mr. Dean had several 'leggy" things too often used. Mr. Dean day retty Primroses and Polyanthuses, and a new Auripretty Primroses and Polyanthuses, and a new Auricula, Hetty Dean (Horner), a novel and pleasing show flower, of a greyish-orange tiat, with a good tube, and the paste pure. Mr. Burnett, gr., The Deepdene, Dorking, showed several fine trusses of Rhododendron blooms of the R. arboreum and R. abybridum sections; and from J. H. Mangles, Esq., Valewood, Haslemere, came five noble trusses of Rhododendron grande, which has flowered well this year in his canvas-house. Mr. A. Harding, gr., Orton Hall, Peterborough, exhibited a quantity of blooms of Maréchal Niel Rose, particularly robust for the season, and showing the effect of using the white Banksian Rose as a stock for this variety. Mr. J. Banksian Rose as a stock for this variety. Mr. J. Walker, nurseryman, Thame, exhibited a boxful of Walker, nurseryman, Thame, exhibited å boxfal öt cut Roses, looking fresh and perfect—Climbing Devoniensis, Sir G. Wolseley, Helen Paul, Sénateur Vaisse, La Marque, Cheshuot Hybrid, Lord Macau-lay, Souvenir de la Malmaison, Thomas Mills, Niphetos, Souveein d'un Ami, and some pretty buds of Madame Falcot; also a box of Maréchal Niel buds and blooms. Str. Turner showed some blooms of sclf-coloured Tree Carnations, large and full, purple, rose, and scarlet, about which prob-ably more will be heard in due season. New plants were forthcoming in fair numbers, and

included some really good things, especially in Amaryllis. The Messrs Veitch again sent a selec-tion from their wonderful collection and received awards for Mrs. Hibberd, a fine form of the Leopoldi type, deep rich crimson in colour, with the tips of the segments white; Colonel Burnaby, an immense flower of a pure searlet colour, and unexceptionable shape; Sir Redvers Buller, of similar proceedings and the content is colour with a white bendering the colour with the portions, dark scarlet in colour with a white band down the centre of each segment, a very showy flower. The same firm also had the fine new Adiantum rho-dophyllum described at p. 372; and some new Hya-cinths, the best of which were General Gordon, single cinths, the best of which were General Gordon, single blue, a fine deep shade of colour, almost black, and the spike of massive proportions; and Harlequin, single red, a most peculiar shade of colour, the red being suffused with purple, and the centre of the bells of a lighter colour. Mr. B. S. Williams had a handsome (? hybrid) Odontoglossum, named macrospilum, with two grand spikes of crispum-like flowers, white fairly shaded with violet, and boldly spotted with chestnul-red. From the Downside collection, Mr. Lee seat a fine variety of Cattleya Trianæ named Leeana (see p. 411), and the pretty little white flowered Odontoglossum Oerstedii, not often seen in such fine condition, Mr. Ballastyne pretty little white flowered Odontoglossum Cerstedii, not often seen in such fine condition. Mr. Ballantyne brought up from Baron Schreeder's garden the hand some Ledia callistoglossa, with narrow rosy-pink-coloured sepals and petals, and the large lovely labellum rich rosy-purple. Mr. II. Beonett showed several abundantly flowered examples in pots of the white Rosa polyantha, Anne Marie de Montravel, a decided Rosa polyantha, Anne Marie de Montravel, a decided acquisition to the cut flower growers. Amongst other things worthy of notice, did space permit, was a well bloomed plant of the singular Clirrhopetalum picturatum, an old species, the long slender flowerstalks of which bear at their summit a flat spreading umbel of flowers, each of an eloogate oblong form and creamy-brown colour. The upper sepal and the lateral petals are oblong and relatively small, but the two side sepals are very long, oblong lanceolate, cream-coloured, twisted and deflexed, so as to occupy the same position as the lib. The true lip is very the same position as the lip. The true lip is very small, purple and mobile. The mechanism of the flower with regard to insect fertilisation would be worth investigating. It was exhibited by Major Lendy, who received a Cultural Commendation. The awards made were:—

FIRST-CLASS CERTIFICATES.

Section A.

To Messrs. Veitch & Sons, for Adiantum rhodophyllum.
To William Lee, Esq., for Cattleya Trianæ var.

Lecana.

To William Lee, Esq., for Odontoglossum Oerstedii.

To Mr. B. S. Williams, for Odontoglossum macro-

To Baron Schreeder, for Lælia callistoglossa.

Section B.

To Messrs. Veitch & Sons, for Amaryllis Mrs. To Messrs, Veitch & Sons, for Amaryllis Colonel

Burnaby.

To Messrs, Veitch & Sons, for Amaryllis Sir R. Buller,
To Messrs, Veitch & Sons, for Hyacinth General

To Mrssrs. Veitch & Sons, for Hyacinth Harlequin.
To Mr. H. Bennett, for Rosa polyantha Anne Marie
de Montravel.
To Mr. R. Dean, for Wallflower Bedfont Yellow,
To Mr. R. Dean, for Auricula Hetty Dean (Horner).

FRUIT COMMITTEE.—Present: John E. Lane, Esq., in the chair; Messrs, John Lee, J. Robetts, J. C. Mundell, W. Denning, S. Lyon, C. Silverlock, H. J. Veitch, G. Bunyard, and P. Crowley. The committee inspected a collection of Rhubarbs grown at Chiswick (see p. 416), and awarded a First-class Certificate to an old but little known variety called Hawkes' Champagne. Mr. Gilbert, of Burghley, again exhibited samples of a new Savoy called Gilbert's Universal, a rather plain-looking variety, about the size of a large Cabbage Lettuce, but said to be very hardy and of good quality. Mr. Gull, Dereham, Norfolk, sent a good sample of Dwarf White Broccoli, and from Mr. Thomas Oldham, gr., Friern Watch, North Finchley, came well preserved samples of eighteen varieties of Apples. COMMITTEE .- Present : John E. The awards made were:-

FIRST-CLASS CERTIFICATES.

To Messrs. G. Bunyard & Co., for Rhubarb Hawkes Champagne.
To Mr. Gilbert, for Savoy Gilbert's Universal.

Royal Botanic : March 26 .- This, the first meet-Royal Botanic: March 26.—This, the first meeting of the above Society for the year, brought together an extensive collection of floral productions, foremost among these being the fine collections of Dutch bulbs, Narcissi, Anemones, and Cyclamen that had done duty at the Royal Horticultural Society 6 Garden on the day previous. The same remark will apply to the new plants also, with the same remark will apply to the new plants also, with the Messrs. Vettch & Somnthelson, for the following plants:—Masdevallia Chelsoni (hybrid), a highly coloured

flower, on a long flower-stalk; for the distinct Adiantum rhodophyllum, the bronzy young growths of which are very attractive; and for the effective Dieffenbachia Jenanni, with green foliage, prettily solatshed with pure white continuous spots on the line of ribs and main arress of the leaf. Mr. B. S. Williams received Botanical Certificates for Odontoglossum marcespillum or the property of the line of ribs and main arress of the later, strong me proton; and Adiantum darkest strength of the proton; and Adiantum as was the later strong me proton; and Adiantum, as was W. Lee, Esq., Downside, Leatherhead, for his magnificent Cattleya Trinane Lecana, and for Masdevallia Schlimii, Mr. Chelsoni, and Odontoglossum Oerstedii. A Botanical Certificate was awarded to Mr. F. H. Hill, gr. to H. Little, Esq. Hillingdon, for Odontoglossum Wilckeanum Littletii, a pretty yellow ground kind, having large brown irregular blotches. Floral Certificates was awarded to Mr. F. Horlard, for Auricula S. W. Hewit, a large, dark purple self; Auricula General Gordon, grey-edged, purple body opon and a continuous of the purple body control of the purple body of the purple body of the same strong of the purple body of the same strong of the purple body of the same strong of the

Noakes, Esq., Hope Cottage, Highgate; 3d, Mr. F. J. Hill, Hillingdon.
Roses in pots, six specimens (nurserymen). — 1st, Messrs. Paul & Son, the Old Nurseries, Cheshunt, with Claude Bernard, Catherine Soupert, Alba Rosa, Mrs. Laxton, La France, Souvenir d'Elise. This was the only award which was made in this class. A collection of Roses by Messrs. Paul & Son received the Small Silver Medal. There were pretty plants of Alignonette, Alphonse Soupert, Helen Paul, Lecceq Dumesnil, Madame Cusins, President, and others.
In the open class for twelve Cyclamens Mr. H. B. Smith, Ealing Dean, was 1st; Mr. F. J. Hill, acj, Mr. J. Wiggins, gr. to W. Clay, Esq., Kingston, 3d. In the anateurs' class for twelve Cyclamens, Mr. J. Wiggins, was 1st, and Mr. F. J. Hill, 2d. All of these exhibits were shown in excellent condition, and were fine samples of good culture. A collection of Cyclamens shown by Mr. F. J. Hill, consisting of smaller plants than the above, and of generally darker colours, was awarded a Large Bronze Medal. In the nurserymen's class for twelve pots of Hyacinths, Messrs. Williams & Sons, Fortis Green, came in 1st; Messrs. Cuthush & Son, Highgate, 2d; and Messrs. Gregory & Evans, Longlands Park, Sideup, 3d.

In the open competition for the best six Amaryllis Mr. J. Douglas was 1st. his Femrees of Lodie. Six in the competition of the competiti

Highgate, 2d; and Messrs. Gregory & Evans, Longlands Park, Sideup, 3d.

In the open competition for the best six Amaryllis Mr. J. Douglas was 1st, his Empress of India, Sir J. Cathcart, Suitan, and Endymion being the most marked examples; 2d, Mr. F. J. Hill; 2d, Mr. Buller, St. Dunstans. For twelve pots of Tulips (open).—1st. Messrow & Evans; 2d, Messrs. Cuthush & Son. In the amateur class for an equal number of Tulips in pots, 1st. Mr. H. Eason, gr. to B. Noakes, Esq.; 2d, Mr. J. Douglas. In the open competition for the best twelve pots of Narcissus Mr. J. Douglas was 1st. Messrs. Veitch & Sons were awarded a Small Siver Medal for their grand display of Hyacinths in pots, and the same award was made to Mr. B. S. Williams for Tulips and Cyclamen persicum. Messrs. Cuthush & Son a Large Bronze Medal for a collection of Hyacinths in pots. Hardy herbaceous plants were shown by Mr. J. Dougles well and the pots.

Cyclamen persicum. Messrs. Cutbush & Son a Large Bronze Medal for a collection of Hyacinths in pots. Hardy herbaceous plants were shown by Mr. J. Douglas, who received the ist and only prize; the same exhibitor was also rst for a collection of hardy Primulas. In the open class for the best six Chinese Primulas, Messrs. H. Williams & Sons were rst; Mr. W. Todman, gr. to A. Heaver, Ezq., Upper Tooting, 2d; and Mr. Odell, Gould's Green, Hillingdon, 3d. Messrs. H. Williams & Son were also the winners of the 1st Williams & Son were also the winners of the 1st Williams & Son were also the winners of the 1st Williams & Son were also the winners of the 1st Williams & Son were also the winners of the 1st Williams & Son were also the winners of the 1st Williams & Son were also the winners of a message with the Son Williams of the 1st Williams & Son Were also the winners of the 1st Williams & Son Were also the winners of the 1st Williams & Son Were also the 1st Williams & Son Were also the 1st Williams & Son Were also the Williams & Son Were also the 1st Williams & Son Were also the 1st Williams & Son Were also the Williams & Williams & Son Were also the Williams & Will

Cavendishiana, E. ventricosa minor, and E. ventricosa magnifica. The collection of hardy Polyanthuses and Primulas and Pieris japonica shown by Mr. A. Waterer, Knap Hill, took the large Bronze Medal.

Knap Hill, took the large Bronze Medal.

Among the more prominent lieus in the miscellaneous class may be mentioned Messrs. Barr & Son's collection of Narcissi, Anemones, Miscari ; Messrs. Carter & Co. Spoppy Anemones, Mr. Thomas Ware's Narcissi, and other hardy subjects. A group of Cinerarias from Mr. J. Douglas, rich in colour, regular in markings and form; also a collection of Auriculas. Mr. Walker, of Thaue, had the boxes of Roses which had been at Kensington on the Tuesday. Mr. Todman's group of Cinerarias, of medium height and enormous blooms; Messrs. Collins Bros. & Gabriel's collection of Anemone fulgens, Triteleia, Narcissi—all of which, plaots and cut flower, added much to the interest and instructiveness of the show.

added much to the interest and instructiveness of the show.

Liverpool Horticultural Association,—The second annual Spring Show of this successful Society was held under the most favourable auspices in St. George's Hall, on the 17th 18th, when a fine display of plants and flowers was crowded into that nobe and spacious building. The properties of the state of the sta

premier award was gained by K. Singlecturst, Esq., Algiburth (gr., Mr. J. Kelly), with a splendid lot. Class 8, six poits Narcissus, not less than three varieties, for which there was a keen competition, seven lots being staged; but the premier place was assays, with every fine poits of Mont Blanc, Bacelman major, Soleil d'Or, Grand Prima, &c. Class p, twelve pots single Tulips in six varieties.—1st, C. W. Neuman, Esq. Class 15, six stove and greenhouse plants, three flowering and three follage.—1st, C. W. Neuman, Esq. Class 15, six stove and greenhouse plants, three flowering and three follage.—1st, C. W. Neuman, Esq. with a grand lot, viz., Clivia miniata maxima, Rhodo-dendron Victoria Regioa, and Azalea Bernard André, flowering, and Croton Williamsi, C. Disraeli, and Latania borbonica, follage; the Clivia was especially very fine, with large high-coloured flowers and massive foliage. Class 16, one stove plant in flower, the premier award being again taken by the last prize-winner with a magnificent specimen of Clerodendron Balfourianum, even and thickly flowered all over. Class 19, four Orchids, distinct.—1st, John Woolwrigh Esq., Mossley Hill, Will good popenius for the properties of the propert took the lead, with grand specimens of Alsophila Moorei, Davalla Mooreana, Adiantum formosum, and Gymno-gramma chrysophylla—the first and third being particu-larly fine specimens. Class 24, four Araleas, distinct.— C. W. Neuman, Esq., again took the lead, with splen-didly grown specimens, well feathered with foliage between the flowers in every part; that of Souvenir de Prince Albert is especially noteworthy, for it is seldoun that such a specimen of that variety is seen. Class 3, six hardy plants, forced.—rst, C. W. Neuman, Esq.,

with Deutzia gracilis, Dielytra spectabilis, Azalea annæna, Rhododendron fragrans, &c. Class 33, three Palms or Cycads.—rst, F. Gossage, Esq., Woolton [gr., Mr. J. Jellico], with fine specimens of Latania borbonica, Areca lutescens, and Pritchardia pacifica. Class 35, six Cinerarias, distinct, in which there was good competition, the premier award being given to Mrs. Watk, Aigburth (gr., Mr. J. Agnew), for six very fine plants, most of the plants being very fine selfs. Class 36, six Primulas.—1st, David Walker, Esq., with small plants, but well flowered and with good high colours. Class 39, six pois of Lily of the Valley, in which there were not less than ten exhibitors, the 1st prize being awarded to L. L. Abbott, Esq., St. Michael's [gr., Mr. G. Bennett), for six well grown pots.

Abbott, Esq., St. Michael's (gr., Mr. G. Bennett), for six well grown pots.

MISCELLANEOUS EXHIBITS.—Messrs. R. P. Ker & Son, Aigburth Nurseries, Liverpool, staged a magnificent bank of Hyacinths, containing 350 pots, creating quite a feature in the extractional state of Tulips; the same properties of the properties

Edinburgh Botanical: March 13.—The meeting had been adjourned on February 14 in consequence of the death of Professor J. H. Balfour, W. B. Boyd, Esq., President, in the chair. Before proceeding to business the Chairman expressed regret at the irreparable loss which the Society had sustained in the death of Professor Balfour. He was the founder of the Society—it was in bis house in Dundas Street, in 1265, that the Society took form; and ever since it bad gone on increasing in usefulness, very much of this success being due to the took form; and ever since it had gone on increasing in usefulness, very much of this success being due to the untiring energy of Professor Balfour. Professor Dickson had undertaken to prepare an obituary notice for the Transactions. On the motion of the Chairman the following minute of the Council was unanimously adopted, and a copy of It was ordered to be sent to the family of Professor Balfour:—'It is with profound regret that the Council has to record the loss of Emeritus Professor John Hutton Balfour, the honoured founder of this Society, who had from the commencement till a very recent period taken the deepest interest in its welfare, and may be described as having been its mainspring. Of Professor Balfour's services to botanical science and education it is impossible to speak too highly. His earnest devotion to botany and his inexansithle energy have borne abundant fruit, not only highly. His earnest devotion to botany and his inexhaustible energy have borne abundant fruit, not only in the direct scientific result of his labour, but in the vast number of pupils dispersed over the globe who have attained important positions in connection with botany pure or applied. Professor Balfour's death will be deeply deplored by all who have had the privilege of studying under him, and who will retain lively and affectionate remembrance of his enthusiasm, and of those personal qualities which endeared him to all with whom he came in contact."

he came in contact."

The following communications were read:—
I. "Oblivary Notice of the late James Robson Scott, N. Dilwary Notice of the late James Robson Scott, N. D. Woodside, Relso. M. D. Weyler and Scott, S. D. Weyler raised from a seed found in a fleece, "by H. Cyelpare, M.D. III. "On the Progress of Open-air Vegetation at the Royal Botanic Garden," by Robert Lindsay, Curator:—
"The month of January, 1894, was remarkable for the almost unprecedented high night readings of the thermometer, and the altogether unprecedented low reading of the barometer, the lowest reading ever recorded in Britain having occurred on the evening of the 26th, when the barometer fell to 27,333 inches. The total amount of frost registered during the month was only 20°, The lowest readings were on the 6th, 47°; 20th, 20°; 18th, 47°; 19th, 48°; 20th, 47°. On the 22d and 23d there was heavy rain, accompanied by high winds from the west and north-west. On the 24th and 25th a coosider-

able fall of snow took place, and it seemed as if winter had set in at last. This, however, did not last long. On the night of the soft had making of the most had not the hight of the soft had more of the most plent and destructive gales that ever visited this country occurred, causing enormous damage throughout the country. In the Botanic Garden not much damage was done beyond the loss of a few branches and some broken glass. The effects of the storm were most conspicuous on the had rigid leaves of Yucca gloriosa, of which there are a large number in the rock-garden, those in exposed situations having had their leaves bruised and bruised and broken off, thus rendering them unsightly for a time. Of the forty plants whose dates of flowering are annually recorded, fourteen came into bloom during the month, while three only were in flower at the same date last year.

which three only well in more a constraint when year.

"The following table, giving the dates of those plants which flowered during January this year, show an average of about a fortnight earlier than last season:—

Dates when the following Plants came into flower during

			188	3.	188	4-
Rhododendron atrovir	ens	 	Feb.	10	Jan.	10
Corylus Avellana		 	Jan.	26	,,	14
Tussilago alba		 	Feb.	6	٠,	18
Galanthus nivalis		 	Jan.	25	.,,	19
Arabis albida		 	Feb.	23	٠,,	19
Crocus alba		 	٠,,	9	13	19
Daphne Mezereum		 	,,,	ro	۱,,	20
Scilla præcox		 	,,	7	1)	20
Eranthis hyemalis		 	Jan.	27	,,	22
Leucojum vernum		 	Feb.	4	,,	26
Galanthus plicatus		 	١,,	6	11:	26
Bulbocodium vernum		 	,,,	6	,,	26
Cracus vernus		 	,,,	17	,,	28
Scilla sibirica		 	,,,	16	1)	30

"On the rock garden eighteen species and varieties came into bloom, consisting of nine species of Helleborts, Primula denticulata, Saxifraga Burseriana, Cyclanen Coum vernum, Galanthus nivalis, Erica herbacea and its variety album.

"Driving Echrusyr the mild character of the available."

ment obust wermun, Guantums mails, Erica nerracea and its variety alba, Arabis albida, Daphne Mezereum and its variety alba, Arabis albida, Daphne Mezereum and its variety alba in the most readings of the thermometer occurred on the ad, 30°, 3d, 28° the self, 25°; to 19th, 30°; 20th, 25°, collectively there were a4° of frost for the month, while for the corresponding month last year 3° only were registered. The highest moreing readings were on the 4th, 49°; 5th, 48°; 3th, 48°; 13th, 48°; 12th, 48°. Comparatively little rain or snow fell, and the weather was favourable throughout for snow fell, and the weather was favourable throughout for snow fell, and the weather was favourable throughout for snow fell, and the south-west occurred, rivalling dardening work. On the morning of the 2st another severe storm of wind from the south-west occurred, rivalling dardening and escaped almost unscathed. The mild and open nature of the season throughout has brought vegetation very rapidly forward, both foliage and flower being such as the season for the species and varieties of plants came into flower on the rock, garden during the month. By the end of the month no less than ninety different species were in flower, including those which opened on previous months, thus giving quite a showy appearance to the rock garden much earlier than last season. Forty-one species much capture than last season. Forty-one species much safety than last proposed on previous months, thus giving quite a showy appearance to the rock garden much earlier than usual. Of the forty plants whose dates of flowering are annually recorded the following seventeen came into flower during the month of February, viz. ; of February, viz. :-

First Flowers Observed both Years.

		 1			
		1883		188	٤.
Rhododendron Nobleanum		 Feb.	22	Feb.	2
Symplocarpus feetidus		 1,	8	,,	4
Aubrietia grandiflora		 ,,	15	,,	10
Ornbus vernus		 March	30	,,	9
Mandragora vernalis		 Feb.	20	21	9
Draba aizoides		 March	12	,,	12
Sisyrinchium grandiflorum a	lbum	 Feb.	22	,,,	12
Scilla bifolia		 ,,,	20	1,	14
Tussilago nivea		 April	1	,,,	14
Sisyrinchium grandiflorum		 Feb.	22		14
Symphytum caucasicum		 April	10	,,	15
Nordmanniana cordifolia		 Feb.	15		20
Ribes sanguineum		 March	28		20
Scilla bifolia alba		 	3		21
,, ,, taurica		 1,	3		24
Narcissus pumilus		 	12		28
Iris reticulata		 ,,	2	11	28
		,,,		,,,	

IV. "Report on the Vegetation in the Garden of the oyal Botanic Institution, Glasgow;" by Robert Bullen, Curator :-

frost, also, nearly corresponds, being 25° for this and 28° for last year. The day temperature has been at or above 40° twenty-four times, the highest being 49°, on the 9th. The lowest day temperature was 33°, on the 3d. Generally, the first half of the month presented a contunuation of the genial weather experienced last month, when fickle Nature made dupes of such numbers of our hardy plants by easing them to grow and bloom hardy blants by causing them to grow and bloom hardy blants by causing them to grow and bloom hardy blants by causing them to grow and bloom hardy blants by causing them to grow and bloom hardy blants by causing them to grow and bloom hardy blants by causing them to grow and bloom hardy blants of the state of the s

putation, and numbering hundreds of grand old trees, of which the owners had occasion to be proud.

"February.—The thermometer has been at the freezing point once, and below it twelve times during the month, the lowest reading being 25°, or 7° of frost, during the night of the 7th. The highest day temperature was 50°, on the 4th; the lowest 31°, on the 29th—this is the lowest day temperature recorded here isnee December 15, 1882. Total frost for the month, 41°. Although the total frost this month exceeds that recorded for February last year, the difference between the mean temperature for the two months is very little. The weather (excepting the last few days) has been very changeable; rainy days being frequent, little outdoor gardening could be done. A most severe storm was experienced during the night of the 20th great damage being done to property, of 4, inches ten many places. Show fell to a depth and the standard of the control of t

drops, "Observations on the Oil Bodies of the Junger-vi." Observations on the Oil Bodies of the Junger-mannie, Illustrated by Microscopic Preparations; "by John Rattray, M.A., B.Sc., communicated by Professor

Dickson.

VI. Miscellaneous communications:—
a. Dr. Craig, on behalf of B. Peach, Esq., H.M.G.S.,
exhibited an abnormal form of Dryas octopetala with
double petals, from Sutherlandshire.
b. Exhibition of plants in flower from Royal Botanic
Garden, and from Mr. John Campbell, Ledaig.

Garden, and from Mr. John Campbell, Ledaig.

Royal Meteorological: March 19.—The usual monthly meeting of this Society was held at the Institution of Civil Engineers, Mr. R. H. Scott, F. R.S., President, in the chair. The President read a paper entitled "Brief Notes on the History of Thermometers." He stated that the subject had been handled in a comprehensive manner by Mons. Renou a few years ago in the should merely manifest of the facility of the stated that the subject had been handled in a comprehensive manner by Mons. Renou a few years ago in the should merely manifest of the facility of the head of the the should merely manifest of the state that he should merely manifest of the state that he should merely manifest of the state of the should merely manifest of the state of the sta

scales, &c.; and, 12, miscellaneous thermometers. In addition to those there were also exhibited various patterns of thermometer screens, as well as several new meteorological implements, together with drawings, photographs, &c.

floqists' flowers.

CINERARIAS AT WOODSIDE,-If in fixing his habitation some half-a-dozen miles from a railway station Mr. James has given the admirers of his beautiful florists' flowers a somewhat lengthened pilgrimage to the shrine of floral beauty at Farnham Royal, certainly the superb quality seen in the huge batch of Cinerarias now so finely in flower amply compensates. There can be hardly less than a thousand plants to greet the visitor's eyes, growing in long low houses that seem to be so well adapted for their culture, as also for myriads of capital Cyclamens and Chinese Primroses. Mr. James has first-rate strains of Cyclamens, his whites especially being peculiarly compact, and wondrously flowered; and of Chinese Primroses, some half-dozen kinds, chiefly of Messrs. Sutton's selected strains, are seeding marvellously, the plants having quite huge heads of pods, flowers being nearly past. Not the least feature in the selections is their remarkable purity of character and evenness of quality. Herbaceous Calceolarias are in great abundance, and about the month of May will give a brilliant display of colour. What is so remarkable of the large collection of Cinerarias, the greater portion of which are seedlings, is the massive character of the flowers, their broad, well rayed petals, and sturdy compact habit of growth. There is not a small flower to be seen, whilst some are of remarkable size. Still, the most perfect form and quality-and better it seems hardly possible to create now-are found in flowers of good average size. Not only all those kinds which from time to time have been certificated, but many others as good, and in some cases better, have been preserved by propagation, and thus the high quality of the strain is year by year becoming enhanced. No strain is richer in sells, and of these the fiery crimsons, rich reds, magentas, purples, and blues, in many shades, are wondrously beautiful. Still, edged or ringed flowers are abundant, and some selected ones excel all yet seen in other strains in form, massiveness, and beauty. Mr. James is working and selecting for the production of dark eyes, and is succeeding well. Pale and grey eyes will soon become things of the past. Some few propagated plants grown in large pots are not yet at their best but they serve to show what beautiful objects are Cinerarias as exhibition plants, and how much frequenters of flower shows have lost in the general decadence of spring exhibi-tions. With low airy houses, thinly shaded during sunny days, good pot culture and regular attention in watering, the Cinerarias seem to enjoy life here under peculiarly pleasant conditions, special evidence of which is seen in the total absence of those insect parasites which will prey upon plants, and on Cinerarias especially, when they can get a footing. Some day, perhaps—and it can hardly be too soon— Mr. James will put into commerce a dozen of his best kinds, and there can be little doubt they would be eagerly sought for and widely grown. Of this batch one half have received First-class Certificates, and of the others most, perhaps, are better than some the Floral Committee have honoured. Of self flowers Princess of Wales is a bold flower, bright rosy-magenta in colour, fine form, very free, and has a dark eye; Col. Clarke, a superb maroon-crimson flower, shaded with violet; Lord Wolseley, a singularly perfect flower, colour rich violet-purple, with red base to the petals; purple eye. Venus, also a most perfect and beautiful flower, of an intense fiery crimson, flushed with rose; dark eye. Royal Standard is a splendid flower, of the liveliest rosy-crimson, shaded with puce. Sir F. Roberts is a flower of perfect yet flattish form, in colour rich maroon-crimson; and Eastern Empress is a finely formed self of medium size, colour rich bluish-purple, eye dark, and habit compact. All these self flowers seen in the clear Woodside light are beautiful almost beyond description. The selected ringed flowers are Mrs. Herrin, Mrs. Cox, Captain Edwards, and Ellen Terry, all first-rate but varying in depth of colour of the ground, and breadth of the white ring round the eye. Lastly comes one of the rare tricolor

[&]quot;Report on Temperature, &c., for January, 1884—
The thermometer has been at the freezing point once and below it seven times during the month, the lowest temperature registered being 7° on the night of the 2d; 7° was the lowest for January last year. The total of

forms, Lottie Williams, the best, most enduring, and regular in character yet seen, the ground being almost black, and the parti-coloured ring round the eye very clearly defined.

MARKET CYCLAMENS .- No notice of the Cyclamens of the year seems complete without some reference to the very fine strains grown by Mr. Richard Clark, of Twickenham, who deservedly ranks amongst the very best and also largest cultivators of this lovely winter flower. Naturally it may be said that the turn-out at Twickenham ought to be first-class, because the Cyclamen is the floral speciality of Mr. Clark's establishment, and so the result equals the endeavour to produce it. Even now, after some four months of continuous market sale, the stock of plants seems inexhaustible, for house after house of exceeding length is filled to the utmost, presenting scenes of gaiety and floral beauty such as the Cyclamen in masses only can produce, and which can only be seen at some large market growing place. The great features of the strains here are found first in variety of colouring, and second in the superh quality of the flowers. To these elements, of course, is allied the very best culture. It is true only a very few men can do the Cyclamen well. Whilst ninety growers out of a hundred can do all other kinds of market or decorative plants admirably, it is but the remaining ten who can do the Cyclamen in first-class form-perhaps hardly so many. Their culture is a speciality, so also is the cross-breeding, the seed saving, and the selecting, so that few need fret if, because not being Cyclamen specialists, they unhappily fail. With a plant at once so ductile in the hands of the hybridiser, so fertile of pollen and of seed, and, not least, so quickly reproduced from seed, it is not to be wondered at if every year brings forth some slight improvement in diverse kinds, in size of flower, in breadth of petal, in rotundity, or substance, or, perhaps, in purity, or greater depth of colour. Still, the improve-ment hetween a fair example of the Cyclamen of ten years ago and that of to-day, is enormous; and though between that of the preceding year and the present it is very trivial, still the improvement, if in minute shades, is going on.

A seedling white of the present year's blooming shows all those fine developments of size, substance, purity, and form that marked Mr. H. B. Smith's Dame Blanche. Another gives not merely a beautiful even head of bloom, but the petals of each flower are more than usually distended-a very useful feature. Why light flowers always show the greatest size, and the deep coloured ones the least, is not easily explained; but certainly deep hues and vigour are not often found in conjunction. All the intense reds and crimsons-and many of these cannot be excelled anywhere-belong to what here are termed the Improved Brilliant strain; and plants of the old Brilliant in flower, the blooms small and petals narrow, very clearly assist in showing that Improved Brilliant is a marked advance on its namesake.

Here and there stand out some rich coloured kinds, the flowers of which approach to the size seen in the giganteum compactum section. These are of a rich rosy-red hue, dense and even throughout. From them presently will assuredly come a strain of grand flowers, and it is but a matter of a few years ere the whites will be equalled in size by these glowing hued kinds. Next the whites come the giganteum compactums, all of the finest habit, and producing white blooms, with bases of some dark rich colour. Description fails to convey the marvellous beauty and high quality of the straio, which is in Mr. Clark's hands unrivalled. Then comes the pretty Rosy Morn, a very lovely section, because all the petals are suffused with rosy-pink, the flowers large and remarkably good. This strain originated with Mr. H. B. Smith, and does not seem to be as well fixed as some others, but it is a charming kind none the less. Then almost insensibly the next division, classed as giganteum purpureum, shades off into petals heavily suffused with purple, though still retaining all the features of the giant persicum strain. The character of this section is well fixed, and, indeed, of strains of his own raising and selection Mr. Clark states that any break

away into some other colour is most unusual. Next come the deep self purples, some of which have flowers that are almost blue - a very distinctive and rich coloured strain; and, lastly, the crimsons, or Improved Brilliants, the depth of hue in many of the flowers being literally of a blood-red.

Of course, in these days of trade enterprise it is not

possible for any trade grower to remain long isolated from others in regard to strains, and, therefore, finding that seed might pay as well as marketing plants, Mr. Clark sets apart several hundred picked ones every year for the production of seed. Of course, it might be possible for any one to go into the market and purchase a few dozens of plants, and soon get plenty of seed for their own use; but from out of 10,000 or 12,000 plants it is not difficult to set aside a few hundreds of more than average merit, and those now annually become the producers of the Twickenham strain of seed. Very striking in the large house set apart for these was it to note the various sections and colours in selected masses, the very best, not only of the place, but hardly to be excelled in the world.

The market sale of the Cyclamens begins early in November and ends early in May. All that time, however, probably thousands of bunches of flowers in colours are pulled and sent to market also, so that in seed, pulled flowers, and plants we find three sources of trade. Already the early stock for the next winter's blooming is being shifted into the regulation 48's, and the autumn sowing is just about to follow into 60's. Generally on sunny days shading is employed, for the Cyclamen is not partial to heat or sudden changes of temperature. Houses depleted of their plants are in turn being filled with Strawberries in pots, for the culture of which Mr. Clark is not less famous; and these two things constitute the specialities of this secluded but admirable market-growing establishment.

The Wenther.

STATE OF THE WEATHER AT BLACKHEATH, LONDON, FOR THE WEEK ENOING WEONESOAY, MARCH 26, 1884.

D DAY.	Baron	ÆTER.	Tempes THE		ERAT HE A	RATURE OF E Air.			rome- il De- tions com isher's les 6th ition.	WIND,	4
MONTH AND DAY.	Mean Reading Reduced to 32° Fahr.	Departure from Average of 18 years.	Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 50 years.	Dew Point.	Degree of Humidity. Sat. = 100.	Average Direction.	RAINFALL
Mar.	In.	In.									In.
20	29 76	-0.05	53.2	40.5	12.7	45-3	+ 3.6	38.6	78 {	WSW.: WNW.	0.00
21	29.84	+0.04	51 0	37.5	13 5	44.0	+ 2.2	36.8	75	N.	00,00
22	29.88	+0.00	52 2	33.0	19 2	43 •C	+ 1.1	37.7	82	w.	0.00
23	29.94	+0.15	53.0	40 5	12.5	45.3	+ 3.3	39.1	79 {	W.: N.W.	0.00
24	29.98	+0.20	51.0	36.8	14.2	42.8	+ 0.7	38.0	83	N.	0 00
25	29.97	+0.20	47.0	35.0	12.0	40.2	- 2.1	36.6	88	N.E.	0.03
26	29.92	+0.15	44-5	37•5	7.0	40.4	— 2.x	36,1	85 {	E. ; N E.	0.00
Mean	29.90	+0.11	50.3	37.3	13 0	43 0	+ 1.0	37.6	81	Vari'ble	0.03

March 20.-Fine bright moroing, Dull afternoon,

20.—Fine Engut monocast

12.—Floed mild day. Clear eight.

22.—Floed and oight overcast.

23.—Fine day and eight.

24.—Fine bright day and eight.

25.—Fine bright moraing. Dull afternoon and night.

26.—Fine cold day and night.

LONDON: Atmospheric Pressure. - During the week LONDON: Atmospheric Pressure.—During the week ending March 22, the reading of the barometer decreased from 30.10 inches at the beginning of the week to 30.01 inches by 3 F.M. on the 16th, increased to 30.05 inches by 3 F.M. on the 17th, increased to 30.05 inches by 3 F.M. on the 17th, increased to 30.05 inches by 3 F.M. on the 18th, decreased to 30.05 inches by 9 A.M. on the 18th, decreased to 30.03 inches by 3 P.M. on the same day, increased to 30.15 inches by 9 A.M. on the 19th, decreased to 29.93 inches by 3 P.M. on the 20th, increased to 30.09 inches by 9 A.M., and decreased to 30.04 inches by 3 P.M. on the 22d, and was 30.05 inches by the end of the week.

The mean reading of the barometer for the week at the level of the sea was 30.03 inches, being 0.26 inch higher than last week, and 0.03 inch above the average

Temperature. — The highest temperature in the shade in the week was 68°.4, on the 16th; the highest reached on the 21st was 51°. The mean of the seven

reached on the 21st was 51°. The mean of the seven high day temperatures was 59°.

The lowest temperature was 33°, on the 22d; on the 18th the lowest temperature was 47°.2. The mean of the seven low night temperatures was 40°.9.

The greatest range of temperature in one nay was

26°.5, on the 17th; the smallest was 12°.7, on the 20th. The mean of the seven daily ranges was 18°.1.

20th. The mean of the seven daily ranges was 18.1. The mean temperatures were—on the 16th, 55°,5°, on the 17th, 54°,8°; on the 18th, 53°,9°; on the 19th, 48°; on the 20th, 45°,3°; on the 21st, 44°; and on the 22d, 43°; and these were all above their averages by 14°, 13°,2, 12°,2, 6°,3, 3°,6, 2°,2, and 1°,1 respectively. The mean to

The mean temperature was 49°.2, being 1°.7 higher than last week, and 7°.5 above the average of the week.

the week.

The highest reading of a thermometer with blackened bulb in vacuo placed in the full rays of the sun was 122°, on the 17th. The mean of the seven readings was 105°, 3.

The lowest reading of a minimum thermometer placed on grass was 25°, 5, on the 22d. The mean of the seven readings was 32°, 7.

No rain fell during the week.

ENGLAND: Temperature.—During the week ending March 22 the highest temperatures were 71°.2 at Cambridge, 68°.4 at Blackheath, 68° at teceds; the highest at Brighton was 58°.3, at Plymouth 59°.8, and at Truro 61°. The general mean was 65°.4. The lowest temperatures in the week were 29°.5 at Nottingham, 30° at Hull, 31° at Wolverhampton; the lowest at Bristol was 38°.5, at Truro 38°, and at Plymouth 37°.9. The general mean was 34°.4. The greatest ranges were 38°.6 at Cambridge, 38°.3 at Nottingham, 30° at Hull; the smallest ranges were 21°.9 at Plymouth, 23° at Truro, and 23°, 3 at Brighton.

21°.9 at Plymouth, 23° at Truro, and 23°.3 at Brighton. The general mean was 31°.

The general mean was 31.,

The mean of the seven high day temperatures was highest at Cambridge and Nottingham, 61°, at Leeds 56°, 3; and was lowest at Bolton and Sunderland, 54°, and at Liverpool 54°.7. The general mean was

The mean of the seven low night temperatures was highest at Plymouth, 44°.2, at Truro and Preston 43°.8; and was lowest at Hull, 37°.1, at Wolverhampton 37°.3, and at Nottiogham 38°.2. The general mean was 41°.

general mean was 41°.

The mean daily range of temperature was greatest at Nottingham, 22°.8, at Cambridge 21°.1, at Wolverhampton 19°.8; and was least at Plymouth, 12°.1, at Brighton and Sunderland 12°.4. The general mean was 16°.

The mean temperature was highest at Cambridge, 49°.4, at Plymouth 49°.2, at Truro 49°; and was lowest at Hull, 45°.7, at Dolton 46°, and at Wolverhampton 46°.1. The general mean was 48°.

Rain.—The largest fall was 0.50 inch at Bolton, 0.35 inch at Truro, 0.27 inch at Wolverhampton; the smallest fail was 0.01 inch at Cambridge, 0.02 inch at Brighton, and 0.04 inch at Sunderland. No rain fell at Blackheath. The general mean fall was 0.16 inch.

SCOTLAND: Temperature,—During the week ending March 22, the highest temperature was 66°.6, at Edinburgh; at Aberdeen the highest was 57°.6. The general mean was 62°.4.

The lowest temperature was 25°,5, at Paisley; at Glasgow and Greenock the lowest temperature was 35°. The general mean was 31°.4.

35°. The general mean was 31°.4.

The mean temperature was highest at Glasgow, 47°.8; and lowest at Perth, 44°.8. The general

47°.8; and lowes at mean was 45°.9.

Kain.—The largest fall was 1.13 inch, at Paisley, and the smallest fall was 0.15 inch, at Dundee. The general mean fall was 0.60 inch.

JAMES GLAISHER, F.R.S.

Enquiries.

"He that questioneth much shall learn much."-BACON.

NECTARINE-BRUGNON.-I am desirous to ascertain NECTAINE—BRUGNON.—I am desirous to ascertain when, where, and by whom these appellations were first used in England and in France respectively. In the six-teenth century what we now call Nectarines were called Nucipersica, from the superficial resemblance of the fruit to a Walnut. X.

Answers to Correspondents.

INSECTS: W. H. B. The Pancratium bulb just received is infested in the rotten part of the scales with large numbers of a very minute opaque white mite, scarcely distinguishable from the common cheese-mite (Acarus domesticus), which burrow into the thickened base of the scales, but which we can scarcely think are the original cause of the mischief, I. O. W.

original cause of the mischief. I. O. W.

NAMES OF PLANTS: B. B. The double form of the common wild Daffodil (Narcissus Pseudo-Narcissus); a true British plant, and a rare one.—W. King. 1, Thuiopsis dolobrata; 2, Cryptomeria elegans; 3, Hyssopus officinalis; 4, Daphne Mezereum; 5, not recognised.—Buckland. 2, Aloussa incisa; 3, Jasminum grandiflorum; 4, Begonia, garden variety; T. and 5, not recognised.—F. B. Scilla bifolia alba.—W. S., Melrete. 1, Zygopetalum crinitum; 2, Lycaste Harrisone; 3, L. Skinneri, a pale variety—Currer. Pleione humilis.—H. M. H. Odontoglossum

triumphans; and 1, Adiantum cuneatum; 2, A. gracillimum; 3, A. Capillus-Veneris.

ORCHIDS: Ed. Lorenz. Mr. B. S. Williams Orchid Growers Manual, sold by the author, Victoria and Paradisc Nurseries, Upper Holloway, N.

PHYLLOXERA LAWS: A. IV. For "yards" read "feet," which would be near enough. It was a misprint.

PROLIFEROUS HYACINTII: G. F. Williams, There is nothing particularly uncommon in a Hyacinth producing four spikes. In vol. xvii., r382, you will find records of bulbs that produced nine and filteen spikes respectively.

SPIREA PALMATA: C. E. L. This plant does not force well, and is much finer when grown in a cool pit through the autumn and winter. If plants are potted up early in spring, and grown on out-of-doors during the summer months, the pots will get filled with roots, and in this state you may introduce the plants into a mild forcing-pit in March, not earlier; and even then a good return cannot be guaranteed.

AR: A Constant Reader. You may safely tar the top side now, but the underside should be left until you can allow plenty of time for the smell to go off before union them. using them

UMBRELLA PINE: F. The correct pronunciation is Skiadop'Itys.

**FOREIGN SUBSCRIBERS sending Post-Office Orders are requested to send them to the Publisher of this journal, 41, Welhington Street, Covent Garden, and to make them payable to William Richards, at the Post Office, Druy Lane, London, W.C.

INTELLIGENT READERS, PLEASE NOTE: — Letters re-lating to ADVERTISEMENTS, or to the supply of the Paper, should be addressed to the Publisher, and NOT to the Editor,

CATALOGUES RECEIVED.

P. J. Perry, Banbury—Agricultural Seeds.
HOWDEN & CO., Inverness—Agricultural Seeds.
FREDERICK GEE, Biggleswade, Beds.—Seed Potatos.
RICHARD SMITH & CO., Worcester—Farm Seed List.
JOHN A. BRUEE & CO., Hamilton, Canada—Flower,
Cycgetable, and Farm Seeds.

EDWARD NAUMANN, Coethen, Anhalt, Germany-Floral

Manures. JOHN WATERER & SONS, Bagshot, Surrey—Rhododendrons, &c.

COMMUNICATIONS RECEIVED.—MM, Vilmorin.—M, Laval'ée.

—W. H. F.—W. A. W.—G. H. L.—J. W.—W. T. T. D.—

—W. H. S.—W. H. Gree F. C.S.—G. N.—W. —W. T. T. D.—

—W. Caudwell.—C. Kershaw.—C. M. O.—W. D.—T. M.—

J. J. W.—G. B.—W. Foster.—Constant Reader.—J. H. Krelage.—E. K. F.—D. C. P.—W. H. D.—T. E.—J. C. &

Co.—J. E. E.—J. S.—Little Dick.—C. B. G.—R. T.

Markets.

COVENT GARDEN, March 27.

PRICES remain the same. Market heavy, especially in greenstuff. James Webber, Wholesale Apple Market,

FRUIT.-AVERAGE WHOLESALE PRICES.

s. d. s. d.	s, d. s. a	
Apples, 1/2-sieve 1 0- 5 0	Pine-apples, Eng., lb. r 6- 2	a
Cobs, per 100 lb 125 0-150 0	- St. Michael's, each 2 o- 8	0
Grapes, per lb 8 o- 10 o	Strawberries, per lb. 8 0-12	0
Lemons, per case 10 o- 14 o		

VEGRTABLES.-AVERAGE RETAIL PRICES.

s. d. s. d.	s. d. s. d.
Artichokes, Globe,	S. d. s. d. Garlic, per lb o 6
per doz 3 0- 5 0	Herbs, per buoch o 2- o 4
- Jerusalem, bush, 4 o	Horse Radish, bund. 3 0- 4 0
Asparagus, English,	Lettuces, Cabbage,
per 10012 0	per dozen 1 6
- Bundle, small 5 o	Mint, green, bunch 1 o
Beans, French, p. 100 3 6	Mushrooms, p. baskt. 1 0- 2 0
Beet, per doz 10	Onions, per bushel 7 0
Cabbages, per doz 1 0- 2 0	- Spring, per bue. o 6
Carrots, per bun o 4- o 6	Parsley, per bunch o 4
- New French, per	Radishes, per doz 1 6
bunch 20	Rhubarb, per bund. o 4- o 6 Salsafy, per bundle o 8
Cauliflowers, Eog-	Seakale, per punnet 2 o
lish, dozen 2 0- 3 0	Small salading, pun, o 4
Celeriac, per root 0 4- 0 6 Celery, per bundle 1 6- 2 6	Spinach, per bushel 4 o
Cucumbers, each 1 0- 2 0	Sprue, French, bund. 1 6
Endive, Freech, per	Tomatos, per lb 3 6
dozen 2 0	Turnips, per bun 0 4
POTATOS Kent Magnums, 80s	to 100s, per ton; do., Regents

Sos. to 100s.; Champions, 50s. to 65s. - New: Jersey, 1s. lb.; French, 6d. lb.

PLANTS IN POTS .- AVERAGE WHOLESALE PRICES.

s. d. s. d.	s, d. s. d.
	3, 4, 3, 4,
Aralia Sieboldi, doz.12 0-24 0	Ferns, in variety, per
Arbor-vitæ (golden),	dozen 4 0-18 0
per dozen 6 o-18 o	Ficus elastica, each 1 6- 7 o
- (common), dozen 6 0-12 0	Fohage Plants, vari-
Arnm Lilies, dozen 8 0-12 0	ous, each 2 0-10 o
Azaleas, each 2 6- 5 0	Genista, per dozen 9 0-18 0
Begonias, per doz 6 0-12 0	Hyacinths, per doz. 6 o- 9 o
Bouvardias, doz12 0-18 o	Lily of the Val., pot ro-r6
Cinerarias, per doz. 8 o-12 o	Marguerite Daisy,
Cyclameo, per doz12 0-30 0	per dozen 12 0-18 o
- Extra size, each 5 0-10 0	Myrtles, per doz 6 o-12 o
Cyperns, per dozen 6 0-12 0	Narcissus, per dozen 9 0-12 0
Dracæna term. doz30 0-60 0	Palms in var., each 2 6-21 0
- viridis, per doz12 0-24 0	Pelargeniums (show)
Erica, various, doz. 9 0-24 0	per dozen 12 0-24 0
Euonymus various,	- scarlet, per doz 4 0-12 0
per dozen o per8 o	Primula, single per

Evergreens, in var., dozen ... 4 0-6 o per dozen ... 6 0-24 o Tulips, per dozen .. 6 0-9 o

CUT FLOWERS.-AVERAGE WHOLESALE PRICES

CUT FLOWERS.—AVERA
Abutilon, 12 bunches 2 o- 4 o
Anemoces, 12 bun... 2 o- 4 o
Anemoces, 12 bun... 2 o- 4 o
Anemoces, 12 bun... 2 o- 4 o
Aralea, white, 12 pp. 0 o
Bouvardas, pre bun. 1 o- 1 o
Camalions, pre bun. 1 o- 1 o
Camalions, 12 blms. 1 o- 3 o
Cyclamen, 12 blooms 0 s- 2 o
Cyclamen, 12 blooms 0 s- 0 o s. d. s. d. Marguerites, 12 bun. 3 o- 6 o Mignonette, 12 bun. 3 o- 9 o Narcissus (Paper-Migronette, 12 bun. 3 o-Narcissus (Paper-white), 12 bunches 3 owhite), 12 bunches 3 o-Pelargoniums, 12 spr. 1 o-2 conal, 12 sprays o 6-Polyanthus, 12 bun. 2 o-Primroses, 12 bun. 0 6-Primula, double, bun. 1 o-Primula, double, bun. 1 o- 1

— single, 12 bun. 4 o- 6
Roses (indoor), doz. 2 o- 6

Tropæolum, 12 bun. 1 6- 3

Tuberoses, per doz. 2 o- 4

Tulips, 12 blooms . 0 9- 1

Violets, 12 blooms . 0 6- 2

Evench per bun. 4 o- 6 Hyacinths (Roman), 12 sprays 0 6 - r 0 Lapageria, white, 12 blooms 3 0 - 6 0 - r 0 Lilac, white Fr., bua. 6 0 - 8 0 Lilac, white Fr., bua. 6 0 - 8 0 Lily-of-Valley, 12 spr. 9 - 1 6 Violets, 12 hillness. 0 0 - 1 0 — French, per bun. 0 4 - 0 9 — Parma, per bun. 2 0 - 4 0 Waliflower, 12 bun. 2 0 - 4 0 White Jasmine, per bunch . . . 0 6 - 1 0

SEEDS.

SEEDS.

LONDON: Manch 26.—There is now a steady sowing demand for all the leading descriptions of farm seeds. As regards red Clowr seed the sale is moderate, at the comparatively low rates characteristic of the present season. In neither Alsike, white, nor Trefoll is there this week any quotable variation. For imported and perennial Rye-grasses the trade somewhat improves; both descriptions are this year exceedingly cheap. Spring Tares find buyers at last week's currencies. The recent advance in Rape seed is well maintained. Hemp seed continues scarce and dear, feeding Linseed steady, Jónn Shau gr-Sons, Seed Merchants, 37, Mark Lane, London, E.C.

CORN.

CORN.

At Mark Lane on Monday there was a slack trade for English Wheat, at barely the rates of Monday week; in foreign the tendency was downwards. Flour dragged heavily, and prices were week. Grinding Barley was considered to the state of the state of

CATTLE,

CATTLE.

At Copenhapen Fields on Monday a firm tone prevailed in the beast trade, and a fair clearance was effected at rather better prices occasionally. The Danish cattle solid at 4s. 6d. to 5s. 2d.; the Swedish at 4s. to 4s. 8d. per 8 lb. The sheep trade was steady, and prices ruled at fully previous rates to occasionally rather dearer. Shorn sheep touched 6s. for choice small. Lambs sold from 8s. to 8s. 6d. The few English calves on offer obtained steady prices, foreign solid slowly, Outoations: —Beasts, 4s. to 5s. 2d., and 5s. 4d. to 6s. 6d.; calves, 5s. 8d. to 6s. 10d.; sheep, 4s. tod. to 6s. 6d.—Thursday's cuttle trade was very quiet. Beasts sold slowly, at about Monday's prices. Sheep were quite as dear as on that day, with a moderate demand; lambs were steady, and calves and pigs sold on former terms. former terms,

HAY.

Tuesday's Whitechapel Market report states that good hay was short, supplies of Clover large, and trade very dull, at the following quotations: —Prime old Clover, 95t. to 1075; inferior, 605. to 755; prime second cnt, 905. to 1055; best meadow hay, 805. to 865; inferior, 405. to 655; and straw, 285. to 375. per lond.—On Thursday there was a fair supply on offer. The trade was steady, and prices were firm, especially for best hay, which was 1x. dearer.—Cumberland Market quotations: —Superior meadow hay, 845. to 925; inferior, 655. to 7525; so 1745; inferior, 705, to 886; and straw, 345. to 385. per load.

POTATOS.

The Borough and Spitalfields Markets reports state that there were good supplies but only a dragging trade, Quotations:—Magnum Bonums, 80s. to 100s.; Regents, 60s. to 80s.; Champions, 50s. to 60s.; and Victorias, 70s. to 85s. per ton.

COALS.

The following are the prices current at market during the week:—East Wylam, 15.: Bebside West Hartley, 15. 9d; Ravensworth West Hartley, 15. 9d; Ravensworth West Hartley, 15. 9d; Walls End—Hetton, 15.: Hetton Lyons, 13. 6d.; Lambton, 14.6. 6d, and 15.5.; Wear, 13.6. 6d.; Tunstall, 13.6. 6d.; Thornley, 14.: 3d.; Tees, 15.5. 3d.

Government Stock.—Consols closed on Monday at 101½ to 100 for delivery, and 102 to 102½ for the account. Intestay's figures were 102 to 100½ for the account. On the 100½ for the account. On Wednesday the quotations were 102½ to 102½ for delivery, and as on the previous day for the account. On Thursday the quotations were 102½ to 102½ for both delivery and account.

PERMANENT AND BEAUTIFUL

CARTERS' INVICTA LAWN SEEDS. In sealed packets, per pound, 1s. 6d.; per bushel, 3os.

CARRIAGE FREE.

A 15. 6d. packet will sow 1 rod of ground,

CARTERS' INVICTA LAWN SEEDS.

Important Facts. The only Gold Medal for Grass Seeds at the Paris Exhibition was won with Carter's Grass Seeds, but the Carter's Grass Seeds, at the Paris Exhibition Carters' Grass Seeds beat thirteen other English and Foreigo Competions.

The only other awards for English Grass Seeds at the Paris Exhibition were a Silver and Bronze Medal. Paris Exhibition were a Silver and Bronze Medal. The Gold Medal, Melbourne Exhibition, was awarded to Carters' Grass Seeds.

CARTERS' GRASS SEEDS for CRICKET GROUNDS,

as used exclusively at Lord's. Price is, per pound; 20s. per bushel. Carriage free.

CARTERS' GRASS SEEDS for TENNIS GROUNDS,

as used at the Head Quarters, Wimbledon. Price, 15.
per pound; 205. per bushel. Carriage free.

SEND for CARTERS' PAMPHLET upon LAWNS and TENNIS GROUNDS—their Formation and After-Management—gratis and post-free,



SPURRY



SUPPLIED IN LARGE QUANTITIES THIS SPRING

NEW SEED NOW READY.

Price as Harvested 45/- 6d. Price extra Cleaned 70/- 8d.

Sow 14 pounds per acre.

By Royal H.R.H. THE THE QUEEN'S Command PRINCE of WALES SEEDSMEN, 237, High Holborn, London, W.C.

NATIVE GUANO.

Extracts from the Eighth Annual Collection of Testimonials from persons who have used this Manure for Farm and Garden Crops :-

VEGETABLES, VINES, FRUIT, KITCHEN GARDEN CROPS.

A. F. BARNOM, Reyal Harrianthural Society, Chimnic, December 3, 1853.—"Used for Cabhages, Celery, Tomatos, and other green Vegetables, also on Lawn Grass. Results.—Very favourable, manifest improvement wherever used, the foliage assuming a much deeper colour, and growth extended, Without doubt a very valuable manure, and one easy of

HY. CLARK, Head Gardener to His Grace the Duke of Marlhorough, Blenkeim Palace Gardens, Woodstock, December 14, 1882—"Used for Plant-growing, Fruit-growing; also for Vegetables. Results:—Very satisfactory. For cheapness and general use your manure is invaluable."

general use your manure is invaluable."

IAMES DART, Gardener to the Right Hon. Lord Carlingford, K.P., The Priory, Chewton Mendig, Bath, December 17, 1883.—"I used your Guano in the gardens, spinkling it on ownsof part in hiquid for Cuembers, Roses, and many other plants. I used no other manure but yours, and could tell to a foot where it was used, dry or wet. If grow many kinds of Potatos, and my garden is very poor ground. Last spring I hought 12th. of White Elephant Potato Seed, and when they were up 8 inches high I sprinkled some of your Guano along the rows, then earthed them up, since which I have dug up agd h. of as good Waldegrave's and Lord Carlingford's Head Gardener at Strawberry Hill, Twickenham, and here at The Priory for just tweety-eight years, and in that time I have used many kinds of artificial manures, but none has given me the satisfaction vor Native Guano has, and I intend to have more later on."

THOS. CARLTON, Gardener to Six C, H, Mills, Bart., Wildeness Park Gardens, Sevenasks, February 4, 1884 — "Used for Yunes. Only ordinary stable-manuer had been used for some years until last spring, when I applied two dressings of presented itself, and the fruit was much larger in bunch and berry than had been the case for some few years. I attribute these good results to the Native Manure. I have also used it for Canlidowers, Peas, &c., and have no hesitation in saying that the result was very apparent in all cases where applied."

ALEXANDER BISSET, Gardner to Sir J. Whittaker Ellis, Bart, Byfleet, December 10, 1883.—"Used for Grap Vines, Orchard House Culture, and Kitchen Garden Crop, Grass Land, &c., at the rate of 10 cott per acre, applied castly proved highly satisfactory, both in fruit and foliage; the result has been wonderfully good, which my employer can testify. I have used your Native Guano all ways, and it has proved the best I used, from its cooling nature, in all my experience of tventy years in England and Scotthard."

EDWARD PEARS, Gardener to Mrs. Jerome, Holland House, Sutton Coldifield, December 14, 1883—"Used for Potatos, Guions, Celery, Cucumbers, Melons, Grape Vines, and Pot Plants. For Potatos and Onions I used, on the average, 5 cett, per acre: not having used your Native Guano before, I was afraid to give too much. Results:—Potatos and Onions, a very good crop indeed; Celery, very fine, gaze it a little ach time of earthing up; Cucumbers and Meloos, I find your Guano suits those first-rate; it does not burn the roots, no one need fear using it. I had some splendid well-finished fruit; Grape Vines, I used it mixed in the border, also as I fiquid, and I adone very good fruit. I also used it for pot plants, and I consider it a very valuable manure for any knd of par plants.

SWEDES, MANGELS, &c.

JAS. DAVENPORT, Meaford Hall Farm, near Stone,
Deember 13, 1833.—" Used for Swede Turnips at the rate of
6 cwl. per acre. Results:—About 3c tons of good sound roots
to the arce. My roots were sounder than some in another field,
manure applied previous autum, about 12 tons to the acre.
Should say it is a useful manure, and cheap."

RICHARD FOWLER, Broughton, Aylesbury, December 12, 1883.—"Used for Swedes, at the rate at 5 cwt. per acre. Results:—Yery good."

JOHN BETTLEY, Downhell Farm, Barton, Oxford, December 18, 1833.—"Used for Turnips and Swedes, at the rate of 3 ewt. per acre. Results: -Excellent, giving every satisfactors and the state of the state

CHARLES BEESON, Glory Farm, Penn, Amershans, Bucks, December 16, 1883.—"Used for Swedes and Mangel Wurzel, at the rate of 4 cwt., per acre for Swedes, with burst ash, and 6 cwt. for Mangels, with ditto. Results:—Swedes very fine crop and large rosts: Mangels very good plant and large roots. I have used Native Guano for years, and have been every successful in taking prizes with roots grown where I applied it. I have taken five first Prizes this year, 1883, being first in all the classes I showed in."

JAMES KITLEY, Farm Steward to the Rt. Hon. the Earl of Derby, Wildly Fark, Haslemers, Surrey, December 14, 183, "Used for Tark, Haslemers, which where the land was not sown. No other manure was used. The Native Guan ot sown. No other manure was used. The Native Guan was harrowed in with the seed, and I am well statisfied with the

GEORGE STONE, Cashio Bridge Farm, Watford, January 1, 1884.—"Used for Swedes. Results:—I was well satisfied with the Native Guano. I used 5 to 6 cwt. to the acre; my Swedes were very good indeed. Send me 3 tons more; I shall give it another trial."

GEO. STRATTON, Princes Risborough, December 13, 1883.—"Used for Mangels, at the rate of 3 cwt. per acre. Results: "A very good crop. I have always had a good crop of Mangels after using the Aylesbury Native Guano."

H. WVATT, Walton Grange, Aylesbury, December 14, 1883.—"At the Royal and Central Bucks Agricultural Show, held at Great Marlow in September last, I was awarded the First Prize, value £10, for the best general crop of roots of not less than 10 acres. And at the same show I was also awarded the First Prize, value £5, for the best crop of roots of not less than 5 acres. The whole of the above-named roots were grown by me on the Broughton Pastures and Walton Grange Farms, and were manured with Native Glano purchased of your Company."

JOHN COX, Combit Farm, Hughredn, Detember 18, 1883,—"Used for Mangel Wurel and Swedes, at the rate of 5 cent, per acre. Result: "One-found extra produce. I consider the bulbs were much finer, and cleaner growth, and generally sound."

JOSEPH HUTCHINGS, Forest Farm, Hanslofe, December 20, 1833—"Used for a crop of Swedes, at the rate of cott per acre. Ten to twelve loads of yard-manure, sown broadcast. Results:—The Native Guano, where sown, has given me great satisfaction. I hope to be a customer next

GRAIN, GRASS, POTATOS, &c.

AUSTIN BUTLIN, The Woodlands, Skipton, Lee, December 18, 1883.—'Used for Mangels, drilled under the seed on the flat. The land was manured from the farmyard in the autumn. Oats with Clover-seeds top-dressed at the rate of 4 cwt. per acre. Results:—Oats and Mangels good. I never had a more promising crop of young Clover. I think it a good manure at the price.'

ROBT. KEENE, Emmington, Tetsworth, December 15, 883.—"Used for Mangels and Oats, at the rate of 7 cwt. per cre. Results:—Both crops remarkably good."

Rev. C. SOAMES, Mildenhall, December 14, 1883.— "Used for Oats, Mangel Wurzel, Potatos. Results:—Oats very good, Mangel ditto."

D. T. and W. H. BYFORD, Carshallon, Surrey, January, S. 1884.—"Used for Oats at the rate of 8 cwt. per acre. Results.—Very gown of the Results.—Very gown to the acre. We consider the Native Guano a very good top-dressing for spring Corn as far as we have tried it."

"Li: T. HAYNES, Upper Heyford, Yanuary 15, 1884.—
"Lic dor Oats, Wheat, and Potatos, at the rate of 4 cwt. per acre. Results:—Oats ylelding about y/6, rp. eacre; Wheat, about 9 qr.; Potatos, about 5 tons per acre. I was perfectly satisfied with the manure on the Oat cropt.

GEO. COOPER, Kingswood Lane Farm, near Aylesbury, January'2, 1884.—" Used for Wheat at the rate of 5 cwt. per acre. Results:—Had a very good crop of Wheat."

C. E. SELL, Leighton Busuard, December 18, 1883.—
"Used for Barley at the rate of about 4 cwt, per acre. Results:—
Good Your Native Cuano I believe good for top-dressing, and
only requires a trial amongst our market gardeners to come into
general use. The difficulty is persuading people to give it a
trial. You must give each gardener a bag and ask them to try
it and give you there opinion.

Captain GEORGE G. SANDEMAN, Roche Court, Salisbury, Wilts, December 18, 1883.—"Used for grass at the rate of 10 court, per acre; Mangels, Swedes, Potatos, at the rate of 9 cwt. per acre. Results:—Grass was much better in quantity and quality, Mangels at the rate of 45 tons per acre, Potatos at the rate of 12 tons per acre, Swedes good. It was also used for Peas, Yines, Urawberries, with good results. Some Potatos with code and the rate of 12 tons per acre, Potatos at the rate of 12 tons per acre, Swedes good.

J. SIMMS, Wellington Terrace, Aykabury, December 17, 1883.—" Used for grass at the rate of 5 cwt. per acre. Results:—Cut 30 cwt. per acre, fine quality. I only took the farm in 1882. Was told by some of the people in the parish they acver saw a batter crop of grass in the field. I shall require some more in February."

ISSEPH FRANKLIN, Scottgrove, Thame, December 27, 283-" Used on old pasture at the rate of 6 cwt. per acre. Results: -A good crop of hay. I consider the A B C Masure, if applied oo grass land early in the spring, a good manure and showing good results."

JOHN COLLEDGE, Patchet's Hill Farm, December 21, 253—"Used for grass and Potatos, and garden produce potations of the product of the product

At the Birmingham Show TWO SILVER CUPS and NINETEEN PRIZES were taken by EXHIBITORS who use NATIVE GUANO.

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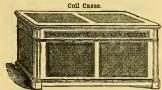


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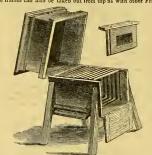
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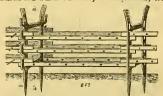
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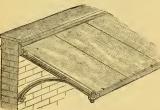
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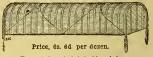
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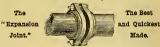
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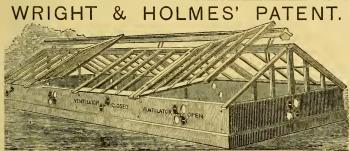


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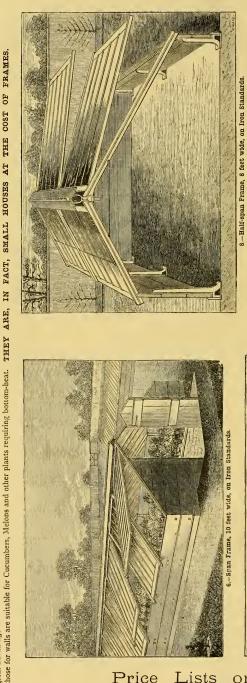
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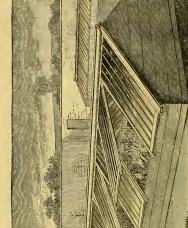
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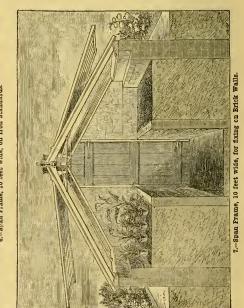
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RIDAY NEXT, April 11, being GOOD FRIDAY, e "GARDENERS' CHRONICLE" will be pubshed on THURSDAY, the 10th inst., at 2 p.m. ADVERTISEMENTS for NEXT WEEK must erefore reach the Office not LATER than EDNESDAY MORNING, the 9th inst.

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DAFFODIL CONFERENCE at South Kensington.

Two Large Coloured PLATES (19 in. × 3 in) of "DAFFODILS." Price 6d. each, ost-free 7d. W. RICHARDS, "Gardeners' Chronicle"

ffice, 41, Wellington Street, Strand, W.C.

OVAL HORTICULTURAL SOCIETY, A South Kensington, S.W.

NOTICE !— COMMITTEES MEETINGS, Fruit and toral, at it a.M., in the Conservatory. SCIENTIFICAT; P.M.

GENERAL MEETING for the Election of Fellows, &c., a.y., in the Conservatory, on TUESDAY NEXT, April & THIRD PROMENADE SHOW and BAND of the Royal ore Guards.

orse Guards.

Entrance by N. E. Orchard House, Exhibition Road, at 10 Clock to the Fellows, and 10 Clock to the Public.

Admission, 25.64.

OYAL HORTICULTURAL SOCIETY,
South Kensington, SW.
For the SCHEDULIO FROM THE SCHEDULION FROM THE SCHEDULION FROM THE SCHEDULION FOR THE SCHEDULI

The SUMMING SHOW ME AS I DE N

THE SUMMING SHOW WILL ALL SOCIETY.

The SUMMING SHOW WILL SHOW SHOW ON JUNE 19 and 13, when PRIZES to the amount of ONE HUNDRED ND TWELVE POUNDS will be offered. Schedules now addy.

B. I. ACLIAND.

B. L. ACLAND, ARTHUR MIDGLEY, Hon. Secs.

CICHMOND HORTICULTURAL
The ANNUAL SHOW of the above Society will be held in
te Old Deer Park, on THURSDAV, Jane 26. Schedules
to be obtained upon application to the Hon. Sec. There will
a CHRYSANTITEMUN SHOW in NOVEMBER. Subiptums can now be paid to J. H. FORD, Eaq., Hon. Sec. London and County Bank, Richmond.

ARNINGHAM ROSE and HORTI-CULTURAL SOCIETY.

The ANNUAL EXHIBITION will be held on WEDNES-AV, July 2.

W. AND J. HODSOLL, Hon. Secs.

HORTICULTURAL EXHIBITION, to be held at the BOTANICAL GARDENS, SHEFFIELD, JULY 24 and 25. Prize Schedules may now obtained on application to Mr. J. EWING, Curator.

EASTBOURNE GARDENERS' and COTtagers' HORTICULTURAL SOCIETY. in usion
with the ROYAL HORTICULTURAL SOCIETY.
The THIRD ANNUAL SUMMER SHOW will be held
on July 30, in the Winter Garden, Termina Road, Eastbourne.
The ANNUAL CHRYSANTHEMUM SHOW will be held
offered in Prics and 7, Over TWO HUNDRED POUNDS

on November 6 and 7. Over TWO HUNDRED
offered in Prizes,
Schedules and full particulars from the Secretary,

Ocklynge Road, Eastbourne. Mr. JOHN ROLLISON,

TORTHAMPTONSHIRE HORTICUL-TURAL SOCIETY.

The ANNUAL SUMMER SHOW and FLORAL FÈTE will be held August 2 and 4 (Bank Holday and preceding Saturday). Schedules now ready.

E. COOKE.
A. FORBES,

THE ANNUAL EXHIBITION of the STOKE NEWINGTON CHRYSANTHEMUM SOCIETY will be held on NOVEMBER 10 and 11. Schedules upon application to Mr. W. GOLDSMITH. Hon. Sec. pon application to Mr. W. GOLDSNITH, Hon. Sec. 1, Stafford's Place, Grove Road, Stamford Hill, N.

NATIONAL CHRYSANTHEMUM SOCIETY. Royal Aquarium, Westminster, S.W. SCHEDULE of PRIZES for 1884 now ready, and may be

ad on application to WILLIAM HOLMES, Hon. Sec., Frampton Park Nurseries, Hackney, N.

FIVE THOUSAND PELARGONIUMS to offer in Bloom, 1255, per 100; in Full Bud, 100x, per 100; in Call Bud, 100x, per 100; Later, 30x, and 95s, per 100. Really fine stuff, all in 5-100; pots. Cash or references from unknown correspondents. TURNER BROS., Nurserymen and Florists, Green Hill Nursery, Allerton, Liverpool.

CHARLES TURNER'S noted and extensive Collections of the above are in the most robust health. If planted now a good bloom will be ensured. Purchasers leaving the selection to C Turner will be liberally details with. The Royal Nurseries, Slough.

Two Acres of Daffodile.

BARR AND SON'S Grounds, Lower Tooting;
nearly 500 varieties. Visitors admitted to inspect, TUESDAYS, THURSDAYS and SATURDAYS, from now to May.

ROSES IN POTS.—All the best New and Old English and Foreign sorts, from 18s. to 36s. per dozen, These world-famed Roses cannot fail to give the greatest satis-faction. Descriptive LISTS on application. RICHARD SMITH AND CO., Worcester.

ILIUM AURATUM .—Good, plump, sound Bulbs, (s. 9s., 12s., 18s., and 24s. per dozen; extra g, 30s. and 42s. per dozen. All other good LILIES at strong, 30r. and 42z, per dozen. All other good LILLES at equally low prices. Mr. WILJIAM BUILL'S Establishment for New and Rare Plants, 536, King's Koad, Chelsea, London, S.W.

PALMS, strong healthy Seedlings, each in to inches high, 51 per dozen; jon per poo. Cash with order. COOMBS AND HALL, 35, Covent Garden Market and Stanford Hill, N.

SQUELCH AND BARNHAM, Long Market, Covent Garden, London, W.C.,

CUMBERS, STRAWBERRIES, and CHOICE FLOWERS. S Q U E L C H AND BARNHAM, giving personal attention to all consignments, they are thus enabled to obtain the HIGHEST MARKET PRICE.

SQUELCH AND BARNHAM.

ACCOUNT SALES sent daily, and CHEQUES forwarded weekly. BANKERS and TRADE REFERENCES. BASKETS and LABELS supplied.

WANTED, EUCHARIS, ARUM LILLES, White AZALEAS ROSES, and other CUT FLOWERS. Special offers solicited for next week, Large quantities of MARECHAL NIEL ROSE BLOOMS WANTED all through the season.
W. DENMAN, Salesman and Horticultural Agent, Covent Garden, W.C.

EUCHARIS, WHITE AZALEAS, LILY of the VALLEY, STEPHANOTIS, &c., WANTED in large quantities
WISE AND RIDES, Covent Garden, W.C.

A RUM LILIES.—Wanted in large quanti-ties, on April 7 and following days WISE AND RIDES, Covent Garden, W.C.

MARÉCHAL NIEL ROSES.—WANTED, fine Specimen Blooms, in large quantities. WISE AND RIDES, Covent Garden, W.C.

SUTTON'S PRIZE LAWN GRASS SEEDS. DIPLOME D'HONNEUR, AMSTERDAM,

SUTTON'S PRIZE LAWN GRASS

S UTTON'S PRIZE LAWN GRASS SEEDS. Prize Medal, Paris, 1878

SUTTON'S GRASS SEEDS for GARDEN LAWNS. Per bushel, 25s.; per gallon, 3s. 3d.

SUTTON'S GRASS SEEDS for TENNIS LAWNS. Per bushel, 225 64; per gallon, 35.

SUTTON'S GRASS SEEDS for CRICKET GROUNDS. Fer bushel, acs; per gallon, as. of.
SUTTON'S PAMPHLET ON LAWNS, their Formation and Improvement, graits and post-free.

SUTTON'S FLOWER SEEDS, in packets, 3d. to 5s. each, post-free. Particulars on application.

SUTTON'S FLOWER SEEDS, in Collections, 2s. 6.d, to 63s. each, free by post or rail. Particulars on application.

SUTTON'S VEGETABLE SEEDS, in Col-Dections, 5s. to 210s. each, carriage free. Particulars on application.

SUTTON'S SEEDS DIRECT F READING. All goods value 2005. carriage free.

SUTTON'S SEEDS DIRECT FROM READING. Priced Lists post-free.

SUTTON AND SONS, the QUEEN'S SEEDSMEN, and by Special Warrant to the Prince of Wales, READING, BERKS.

Forest and Ornamental Trees and Shrubs.

THE LAWSON SEED AND NURSERY
COMPANY (Limited), Edinburgh, have an immense
Stock of the leading kinds of Seedling and Transplanted
FOREST TREES and SHRUBS, &c.—all in healthy condition and prices moderate. Special offers on application.

Daffodii, Daffodilly, Daffodowndillies.

A DESCRIPTIVE CATALOGUE of more than acc sorts of DAFFODILS free on application.

BARR AND SON, 12, King Street, Covent Garden, W.C.

TROPÆOLUM SPECIOSUM.—Now is the time to plant this fine hardy Climber. Extra strong Pot Roots at gd. each, 8r perdezen, for eash, Post and package free HOWDEN AND CO. The Nurseries, Inveness, N.E.

HOLLY for HEDGES, 12 to 15 inches, 25s.; H 15 to 18 nothes, 35s.; 18 to 24 inches, 50s. per 10o. Forest List, containing heights and prices of well-grown Quick, Ash, Larch, Spruce, Pines, Oaks, Underwood, &c., free, RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

VERBENAS.—Strong, healthy, well-rooted Cuttings, perfectly free from disease, of White, Purple, Scarlet, and Pink, 6. per 100, 500, per 1000; 100 in 12 dissinct and splendid varieties, First Prize Flowers, for 82. CALCEULARIA, GOLDEN CEM.—Strong, sturdy,

attum-struck plants, st. per 100, 40s. per 100s.
FUCHSIAS, PANSIES, IRESINES, AGERATUMS, &c.,
very cheap Terms cash.
The Exors, late H. Blandford, The Dorset Nurseries, Flandford.

Cut Bloom for Easter.

A RUMS, ROSES, GARDENIAS,
AZALEAS, &c. Price and particulars of
EDWIN HILLIER, Nurseries, Winchester.

STRAWBERRIES.—Capital Roots, 4s. per too. LIST containing descriptions of the best sorts free. RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

Grapes this Year.

Grapes this Year.

7z 6d. and ros. 6d. each: for Plauting, 3z. 6d. and s.s. each. Leading kinds, thoroughly ripened without bottom-heat.

JAMES DICKSON AND SONS, Newton Nurseries,

GRAPE VINES.—A fine stock in leading varieties, Planting and Fruiting Canes. Apply to FRANCIS R. KINGHORN, Nurseryman, Richmond.

SEAKALE.—Well-callused sets from Fulham stock, 9s. per 1000; £4 per 10,000. Cash only. WILL. TAYLER, Osborn Nursery, Hampton, Middlesex.

SUTTON'S READING HERO
POTATOS,—Several Tons of the above for Sale. Wararouted true. Grown for three years on red land from seed and
direct from Messrs. Sutton & Sons. Apply for particulars to
K. ROBBINS, The Hollies, Kenilworth.

SED POTATOS.

SED POTATOS.

H AND F. SHARPE are offering their fine selected Stocks of all the best kinds of SEED POTATOS at very low prices, which may be had on application. Sed Growing Establishment, Wisbech.

SALES BY AUCTION.

Tuesday Next.

Tuesday Next.

A reinstructed by Mr. F. Sander to SELL by AUCTION, at their Central Sale Rooms, 67 and 68 Cheapside, E.C., to at their Central Sale Rooms, 67 and 68 Cheapside, E.C., to at the Area of the Area of the Area of the Area and fine AERIDES HOULLETIANA, flowering specimens of DENDRORUUM THYRSIFLORUM, choice hybrid O'DONTOGLOSSUMS, &c.

On view morning of Sales, and Catalogues had.

On view morning of Sale, and Catalogues land.

Wednesday Next.

A fine assortment, comprising 100 lets, of choice named CAR.

NATIONS and PICOTEES, from the celebrated collection of Mr. Charles Turner, Slough; 500 first-class named KOSES, from an English Nursery; GREEN-HOUSE PLANTS in flower, collections of the finest collection of the finest properties of the finest collection of the finest collection of the finest collection of the finest collection.

BERNCHLEYENSIS, LILIUM AURATUM, Hardy English-grown LILES, PANCRATUM CARIBAUM, and a variety of SPRING BLOOMING PLANTS and PULIS.

MULES.

MESSRS. PROTHEROE AND MORRIS
MESSRS. PROTHEROE AND MORRIS
Sale Rooms, 67 and 68, Chepsude, E.C., on WEDNESDAY
NEXT, April 9, at half-past 12 o'Clock precisely.
On view morning of Sale, and Cartingues had.

NEXT, April 9, at half-past 20 Clock precisely.
On view morning of Sale, and Catalogues had.

Fulham, S.W.

In the High Court of Justice, Chancery Division.—Re The General Horticultural Company (John Wills), Limited.

MESSRS. PROTHEROE AND MORRIS

MI SELL by AUCTION, under an order of the Hon.
Full of Chitty, on the Premises, The Nursery, Fulham Palace Road, Fulham, S.W., near the Hammersmith Railway Station, on TUESDAY, April 22, and there following day, at 12 o'Clock precisely each day, the whole of the chorce sands of Falms, in 2 and 45 pats; magnificent specimen Tree Ferus and Palms for eshibition, including some of the finest examples in the country; splendid plants of Lapageria alba and rosea, hundreds of trained specimen Hazleas and Camellias, two Stephanotis in pots, covering ros square feet each; Standard and Pyramidal trained Bays in tubs, Eucharis amazonica, large Cortors, Nepnenthes, and other stock, the whole of the UTEN-SILS in TRADE, Three GREENHOUSES, 2000 feet Hotwater PIPING, and numerous Effects.

May now be viewed. Catalogues had on the Premises; of M. A. TOOYEV, Solitor, 18, Orchard Street, W.; of F. WHINNIN, Esq., Chartered Accountant, S. Old Jewry, G. M. & TOOYEV, Solitor, 18, Orchard Street, W.; of F. WHINNIN, Esq., Chartered Accountant, S. Old Jewry, S. (Chephone No. 1899)

Brighton.—To Nurserymon, Florists, Investors,

E.C.; and of the Auctioners and Valuers, 67 and 68, Cheapside, E.C. (Telephone No. 180-9)

Brighton—To Nurserymen, Florista, Investors,
The Yalushe Freehold Derope Revolution of the Hess.

The Yalushe Freehold PROPERTY, known as the VICTORIA NURSERY, byke Road, Brighton—The List is situate within a short distance of the Brighton Railway Station, and has a frontage of 120 feet to the Dyke Road, with numerous Glasshouses, Forcing-Pits, Two-stall Stable and Caach-house, and an Office and Store-room erected whole of the will be given on completion of the purchase.

MESSERS. WILKINSON AND SON are instructed by the owner, who is relinquishing the business, to SELL the above PROPERTY by AUCTION, at their instructed by the owner, who is relinquishing the business, to SELL the above PROPERTY by AUCTION, at their state Sale Rooms, 168, North Street, Brighton, or TUES-DAY, April 24, at 3 of Clock precisely.

All Particulurs and Conditions of Sale obtained of Messrs. VIERSHED AND SHAPLAND, Solicitors, 1, Prince's Street, Conditions of Sale obtained of Messrs. VIERSHED AND SHAPLAND, Solicitors, 1, Prince's Street, Conditions of Sale obtained of Messrs. VIERSHED AND SHAPLAND, Solicitors, 1, Prince's Street, Conditions of Sale obtained of Messrs. VIERSHED AND SHAPLAND, Solicitors, 1, Prince's Street, Pedford Row, London, W.C.; and of Messrs. WILKINSON STREET, STREET, STREET, SCHAPLON, SOLICITOR, 108, North Street, Brighton, and GORHIDS in Ellower and Rud.

AND SON, Auctioneers and Estate Agents, 168, North Street, Brightoo, and 30-A, Western Road, Hove.

Wednesday Next.—(Sale No. 663-5)

SPECIAL SALE of OKCHIDS in Flower and Bud.

M.R. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38. King Street, Covent Gardeo, W.C., on WEDNESDAY NEXT, Aprilo, at his freat Rooms, 38. King Street, Covent Gardeo, W.C., on WEDNESDAY NEXT, Aprilo, at GRCHIDS in Flower and Bud, including, a grand special for ROCHIDS in Flower and Bud, including, a grand special for ROCHIDS in Flower and Bud, including a grand special for ROCHIDS in Flower and Bud, including a grand special for ROCHIDS in Flower and Bud, including a grand special for ROCHIDS in Flower and End. In the Street Str

On view morning of Sale, and Catalogues had.

Thursday Next.—(Sale No. 6634).

IM PORTED ORCHIDS, &c.

MR. J. C. STEVENS will SELL by AUCGARD, WILLIAM STEPPERS WILL SELL by AUCGARD, W.C., on THURSDAY NEXT, April so, at half-past 12 c'clock precisely, a grand importation of CATLEYA TRIANE, "Hague" varieties, in fine condition and splendd masses; ODONTOGLOSSUM CRISPUM (Alexandre,) of the very best type, in large masses, and in the best condition, from Messrs. Shuttleworth, Carder & Co. 1800 a COLLECTION of Messrs. Shuttleworth, Carder & Co. 1800 a COLLECTION of Messrs. Shuttleworth, Carder & Co. 1800 a COLLECTION of Messrs. Shuttleworth, Carder & Co. 1800 a COLLECTION of Messrs. Shuttleworth, Erics clastica, Glosinias, &c. a consignment of Amaryllis, Bessera elegans, and other Mexican BULLS, ORCHID BASKETS, &c.
On view morning of Sale, and Catalogues had.

On view morning of Sale, and Catalogues had.

MR. J. C. STEVENS has received instructions from the Executors, to SELL by AUCTION on the Premises, "Poles," Ware, on MONDAY, TUESDAY, and WEDNESDAY, April 21, 22, and 33, at half-past 22 ofcleck precisely each day, the entire COLLECTION of STOVE and GREENHOUSE PLANTS, formed by the late Robert Hambury, Esq., comprising spleading speed of the Robert Hambury, Esq., comprising spleading speed collection of Camellias, including all the best varieties in fine condition of Camellias, including all the best varieties in fine condition of Camellias, including all the best varieties in fine condition of Camellias, including all the best varieties in fine condition of Camellias, including all the best varieties in fine condition of Camellias, including all the best varieties in fine conditions of Camellias, including all the best varieties in fine conditions of Camellias, including all the best varieties in fine conditions of Camellias, including all the best varieties in fine conditions of Camellias, including all the best varieties in fine conditions of Camellias, including all the best varieties in fine conditions of Camellias, including all the best varieties in fine conditions of Camellias, including all the best varieties in fine conditions of Camellias, including all the best varieties in fine conditions of Camellias, including all the best varieties in fine conditions of Camellias, including all the best varieties in fine conditions of Camellias, including all the best varieties in fine conditions of Camellias, including all the best varieties in fine conditions of Camellias, including all the best varieties in fine conditions of Camellias, including all the best varieties in fine conditions of Camellias, including all the best varieties in fine conditions of Camellias, including all the best varieties in fine conditions of Camellias, including all the conditions of Camellias, including all the conditions of Camellias, including all the conditions of Camellias, inclu

The Valuable Botanical and General Natural HISTORY LIERARY of the late Robert Hambury, Esq.

M. R. J. C. STEVENS has received instructions from the Executors to other for SALE by AUCTION.

TION to the Company of the Late Robert Hambury, Eagl, of Poles, Ware.

Further particulars in next advertisement.

The Down House Collection of Orchids.

The Down House Collection of Orchids.

The Down House Collection of Orchids.

The J. C. STEVENS has been favoured with instructions from Sit Wm. Marriot to SELL by AUCTION, at his Great Rooms, 48, King Street, Coven Garden, W.C., in MAY, his well-known COLLECTION of ORCHIDS. The plants have been selected with the greatest care for a period of more than 15 years, during which time the inferior varieties have been several times discarded. Among them will be found many of the finest varieties of cearly all the best species, and they are in grand health. The whole of disperse of prior to Sale.

Further particulars in next advertisement,

Further particulars in next advertisement,

Waltham Cross.

(Near Great Eastern Railway, 11 miles from London)

IMPORTANT SALE of SPECIAIEN STOVE and GREEN
MR. TYDEMAN IS Instructed by Mr. E.

Wickestel, who is giving up Evolution. SELL by

Wickestel, who is giving up Evolution. Cross, on Web
MEDIAY, April 29, at 11 for 12 o'Clock, the whole of his well
known Collection of well-grown specimens of AZALE

INDICA, Cape ERICAS, GENETYLLIS, APIFILEEXIS,

ALLAMANDAS, CLERODENDRONS, FRANCISCEAS,

RONDELETIAS, specimen PALMS, ANTHURLUMS,

ROTONS, &c.

43 This well-known collection has taken First Prince and the collection of the prince of the collection.

CROTONS, &c.

64 This well-known collection has taken First Prizes at the Loadon and Provincial Shows, viz., Regent's Park, South Kensington, Crystal Palace, Manchester, and elsewhere, and includes some of the finest grown specimens in this country. Also Three Exhibition PLANT YANS, in good repair, On view day before and morning of Sale. Catalogues on application to Mr. E. TUDGEY, Nurseries, Waltham Cross; and of Mr. Mr. TYDEMAN, Auctioneer and Estate Agent, Waltham Cross, N.

By Order of the Trustees, who are now desirous of Winding-up the Estate.

SBORN'S NURSERY, Sunbury, Middlefeet of Building Frontage; also the numerous modern Glass
Erections which recently cost £3000. The whole Estate, with
the Goodwill of the Busness, the Stock and Utensils in Trade
may now be PURCH ASED at the reduced sum of £4500, part
Apply for full particulars to Messrs. PROTHEROE AND
MORKIS, 67 and 68, Cheapside, E.C.

To Nurserymen, Seedamen, and Florists.

TO BE DISPOSED OF, the Old-established
BUSINESS, carried on by the late Joseph Termile &
Son, Victoria and The Castle Nursery, Penrith, Cumberiant
He above will be sold on easy terms, and offers a rare opportunity for business men, in a fine neighbourhood, where there is
increasing sone for a large trans.

The development of the control of

To Gardeners, Gentlemen's Servants, and Others, TO BE DISPOSED OF, a genuine FRUIT and FLORIST'S BUSINESS—Horse, Yans, and every requisite for trade; doing £1500 a year—could be doubled, Satisfactory reasons for leaving. Same hands eight years. Lease

to run nineteen years.
C. NEWTON, 2 and 4, Brett Road, Amhurst Road,

FOR SALE, a SMALL NURSERY BUSI-NESS; Stock at present small, and consists chiefly of young Forest Trees; a Cone Klu is also included, together with a foe Jobbing Business, and where a good business has hitherto been carried on. There is likewise a good Dwelling-house loce to the Nursery, that can be had by arrangement if desired. This is a good opportunity for a man with little capital. Evalued reasons for selling same.

Evalued reasons for selling same.

FOR DISPOSAL, a NURSERY, SEED, FLORIST, and JOPHING BUSINESS, London (West). Owner retiring. Low rent. Takings, 45700 per annum. Bostopen for inspection. Price 4870, including Lease, Goodwill, magnificent. Conservatory, Greenhouses, Seed Shop, Sheds, Stabling, Horses, Vans, Carts, Tools, &c.
Apply to Messer, PROTHEROE AND MORRIS, 67 and 68, Cheapside, E.C.

Cheapade, E.C.

Abergavenny Nursery.

Abergavenny Nursery.

BE LET, with Immediate Possession, the above Ideastablished NURSERY, consisting of 14 acres of excellent ground, stocked with Trees and Shrubs, 6 divisions of Greenhouses heated with hot water, a large number of Pits and Frames, large Packing Shed, good Stable and Cart Shed, Piggeries, &c., together with an excellent Residence, and to acres of good Pasture Land joining the unsery. The above forms one of the most compact and desirable business family for nearly seventy years, and is now to let owing to the death of the late propriect and failing health of his successor. Stock and Pixtures to be taken at a valuation. For particulars apply to HORACE WOODS, The Gardens, Maindiff Court, Abergavenny.

To Fruit Growers, Market Gardeners and Seedsmen. TO Fruit Growers, Market Gardeners and seedsmear
TO BE LET, on LEASE, So ACRES of
excellent GARDEN LAND, with suitable Buildings, at
Peterborough, situated almost adjoining the Great Northern
and Midland Railway Stations.
The above has been worked for the past ten years by a Market
Gardener and Seedsmay; 8 acres are planted with Asparagus.

Seedsman of the County
and Fruit I rees, now in tuil bearing, which could be see separately, the seed of the seed

To Gentlemen seeking a Profitable and Interesting BUSINESS.

THE LEASE, STOCK, and BUILDINGS, viz., four fine Hothouses, each 101 feet long and 15 feet wide—all fully stocked—58-de, &c., and 29 Å Acres of Land, within so pards of a Railway Station, to be DISPOSED OF. In first instance address HORTUS, Gardeners' Chronicle Office, 41, Wellington Street, Strand, W.C.

TO BE LET, a FLORIST, SEEDSMAN, and FRUITERER'S, in good working order. Genuine concern. Twenty miles from London. On main line, close to an important Junction to all parts.

A. B., 47. Wellington Street, Strand, London, W.C.

THE LIVERPOOL HORTICULTURAL CO. (JOHN COWA). Limited, owing to the great increase in the other branches of their business, are prepared to LEASE apphances for carrying on the Horticultural Building and Hening Business. Machinery and Stock to be taken at valuation. This affords a receillent opportunity for any one who may be inclined to embark in this business. Full particulars on application to the MANAGER, The Vineyard, Garaton, Liverpool.

Fifty Nurserles, Market Gardens, Florist and Seed BUSINESSES to be DISPOSED OF.
MESSRS, PROTHEROE AND MORRIS'
HORTICULTURAL REGISTER contains full particulars of the above, and can be obtained, gratis, at 8, New Broad Street, E.C.

MILLINGTON AND CO, ENGLISH and FOREIGN SHEET and PLATE GLASS, WHITE LEAD, MILLED LEAD, OILS, and COLOUR MERCHANTS, 43, Commercial Street, E.

Hardy Evergreens.

BUSHY AUCUBA, LAUREL, RHODODENDRONS, HOLLIES, and other EYERGREENS.
Covering many acres Splendidly rooted.
JAMES DICKSON AND SONS, "Newton" Nurseries
Chester.

To Nurserymen and Gardeners.

POR SALE, Large Red, White, and Pink
DAISIES, at 75, 64, per 102; also Black Prince, Cloth
of Gold, Miss Woods, and Purple King PANSIES, at 22, 62,
per dozen. X, Y. Z., Plas Power, Wresham.

CREEPERS for Walls, Trellises, &c., in great variety. By planting what is suitable an unsightly object may easily be made beautiful. Descriptive LIST and advice on application.

RICHARD SMITH AND CO., Nurserymen and Seed
Merchapts, Worcester.

HERBACEOUS and ALPINE PLANTS. Now is the season to plant and insure success. Write for R. H. VERTEGAN'S Pocket CATALOGUE, and make your choice from his unrivalled Collection.

Chad Valley Nurseries, Edgbaston, Birmingham.

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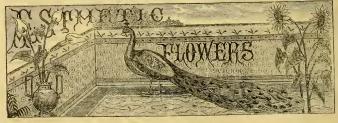
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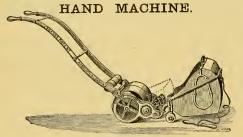
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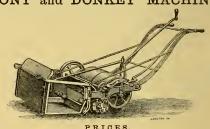
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Gardeners' Chronicle.

SATURDAY, APRIL 5, 1884.

THE NARCISSUS.*

N the following columns we give the substance of Mr. Burbidge's lecture on the Narcissus, delivered before the Royal Horticultural Society on the 1st inst., omitting only the introductory portion devoted to the legendary history of the plant. For some comments on the subject, an abstract of the discussion which took place, and for the report of the show itself, we refer to other columns of the present issue.

STRUCTURE.-The Narcissus is a genus of bulbous plants belonging to the natural order of the Amaryllis; indeed, these flowers may be said to represent for us here in Europe the Eucharis and other beautiful crowned genera common to the New World. A Narcissus flower consists of an inferior ovary situated at the base of an obconical or cylindrical tube. From different points along this tube spring six perianth segments (in two series), and beyond these a cup or crown is prolonged.

Now we find among the Narcissi generally two well marked and distinct variations in their flowers. In the Daffodils, for example, the six stamens are of equal length, and have the same point of insertion low down near the base of the obconical tube. When a flower of the true or Poet's Narcissus is examined, however, we find some marked differences. It will be observed that the tube is here much longer and quite cylindrical, and when we make a section of the flower we find the six stamens are divided into two sets of three each, and that each set has its own locality or point of insertion-three near the mouth, and the other three a little farther down the tube.

I have not time to go into minute details, but I need scarcely say that there are good reasons for these variations; they are especially fitted for-owe their origin, it may be, to-insect fertilisation, and, as we shall soon find, these two distinct species are not unfrequently crossfertilised in a wild state: and this has happened much more frequently in our gardens-or perhaps it may be that in gardens the hybrid progeny has been more carefully preserved. Before I leave this part of my subject I wish to point out that nearly all the variations in form of which a Narcissus flower is capable, are owing to the sliding, as it were, of the whorl of perianth segments along the tube of the flower; thus we find the length of the cup or crown, and the length of the tube, always, or nearly always, vary in inverse proportion.

I ought to point out here, that some superficial distinctions are produced by the manner and degree of expansion usual to the perianth In the Hooped Petticoat (Nardivisions. cissus Bulbocodium), for example, the perianth divisions are narrow and inconspicuous, lying as they do in the same plane with the corona margins (fig. 80, A, D, E). In the common Daffodil the perianth lobes are broader and

^{*} A paper read by F, W. Burbidge, F.L.S., Curator of the Trinity College Botanical Gardens, Dublin, on April 1, in the Royal Horticultural S ciety's Gardens, South Ken-suggton.

more expanded (see fig. 80, C, H); in N. incomparabilis and in N. poeticus they are expanded at right angles to the tube, and so become star-like (in fig. 80, G, K serve to illustrate this arrangement); so also in the "Little Cupped Italian," or Narcissus Tazetta group; while in the case of this "bonnie" gem (Narcissus triandrus) we get a very distinct Cyclamen-like blossom, seeing that the perianth lobes are sharply reflexed or turned back, so that they lie parallel with the pendent flowertube (illustrated by fig. 87, p 450).

In colour the Narcissi are not so variable as many other bulbed flowers. We get all shades of yellow and of white in the perianth-one species, N. viridiflorus, known to Parkinson, and recently reintroduced by Mr. George Maw, has green blossoms. In N. incomparabilis we find cups richly tinted with orange-red, so also in some forms of N. Tazetta, while N. poeticus has a red or purple rim to the crown.

NOMENCLATURE AND CLASSIFICATION .- We have in all about twenty species of Narcissus, which are known to exist in a wild state.

LIST OF THE SPECIES OF NARCISSUS, SHOWING

Species. 32. N. Bulbocodium	Native Countries. Spain, Portugal, France, S.W. to Bordeaux to N. Africa
z. N. Pseudo-Narcis- sus	Sweden, England, Portugal, Spain, Italy, and Transylvania
	Isles of Glénan, Brittany Spain
o. N. poculiformis	•
4. Macleaii	Not wild

Spain, S.W. France, Tyrol Spain, S. France, Italy, Dalmatia Spain, S. France, Italy, Dalmatia S. France (Touloce Spain, S. France, Touloce, Avignon, Mar-seilles, Nice) S. Europe, Cashmere, N. Iodia, Chioa, Japan Spain, S. France, Italy to Dalmatia Flance, Switzerland, Italy, Tyrol Spain, S. France, Italy to Dalmatia Flance, Switzerland, Italy, Tyrol S. Europe, France to Greece Spain, S. France to Greece Spain, S. France to Greece Spain, S. Europe, Farnce to Greece, and Palestine N. odorus .. N. juncifolius N. dubius .. II. N. Tazetta

ao. N. jonquilloides (Willk. Fl. Hisp.) 15. N. Broussonetii ... 16. N. capariensis ... Spain Magadore (Africa) Canary Islands

I may here mention that among generally acknow-ledged species there are two or three which have never heen found wild. These are N. Macleaii, N. (montanus) poculiformis, and N. gracilis. It is questionable if these are really species, my own opinion being that they are old and well marked garden hybrids. N. pachyholbos and N. canariensis should, I think, he considered as outlying geographical forms of N. Tazetta. N. jonquilloides of the Flora His-panica (Willkomm) I have not seen alive, but in the plate it resembles N. intermedius. N. calathinus must now be referred to N. triandrus. Others, again, which really do exist wild without a doubt, have also had their exact counterparts produced in gardens. Thus, on the authority of Dean Herbert and others, N. incomparabilis and N. odorus, both well known as wild in Southern Europe, have been produced in gardens by hybridisation.

HYBRID NARCISSI.-When we come to speak of Narcissus hybrids, it is a matter of regret that the workers in this fertile field have left us scarcely any data or detail of how their numerous seedling and hybrid forms were produced. Dean Herbert (in the Journal of the Royal Horticultural Society, vol. ii., p. 1) has told us more than any one, and the late Mr. W. Backhouse, of St. John's, Walsingham (who raised the Empress and Emperor Daffodils), contributed an interesting paper to the Gardeners' Chronicle, June 10, 1865, p. 530. The late Mr. Leeds, of Longford Bridge, Manchester, who raised more new kinds than any one, gave us no information whatever; nor did Horsefield, the Lancashire weaver, who raised the "Bicolor Horsefieldii Daffodil," decidedly one of the most robust and beautiful of its race. The late Mr. Nelson, of Aldborough Rectory, near Norwich, raised a few varieties of especial merit, notably the noble sulphur Daffodil named Gertrude Jekyll, and a white form of the dwarf Daffodil (N. nanus). Mr. Nelson kindly told me by letter, only a few days before his death, that cross-fertilisation was not resorted to; so Mynheer de Graaff, of Leiden, ipforms me that his

fine new kinds are seedlings or wind-fertilised hybrids. These remarks corroborate what Mr. Backhouse wrote in the Gardeners' Chronicle nineteen years ago; when speaking of artificial crosses between the Daffodil and the Poet's Narcissus, he says :- " Seeds I have sown from plants not artificially impregnated produce the same result, some showing the Daffodil and others the N. poeticus type. "e. The moral here would seem to be, Raise seedlings—hybrids if you can; but raise seedlings.

GEOGRAPHY .- Nearly all these kinds are found wild in Europe. Spain and the South of France seem to he the focus of the genus, but a few are found



Fig. 78.—NARCISSUS PSEUDO-NARCISSUS VAR MINIMUS: LEAST DAFFOOLL.

in Northern Africa, and N. Tazetta is most ubiquitous, growing all over Southern Europe and Northern Africa, and then going off at a tangent, through Persia, Cashmere, and India, as far east as China and Japan.

CLASSIFICATION .- Parkinson, who, in 1629, described or figured ninety-six species and varieties, seems to have been the first to attempt any classification, and he is very particular that we should distinguish Daffodils from Narcissus proper, and is equally careful lest we should confound the flat-leaved with the Rush-leaved kinds. At



FIG. 79. - NARCISSUS X DR. MASTERS.

a more recent date Salisbury, Haworth, and Herbert all worked among these flowers; but their methods of classification, although most interesting to students, are perfectly obsolete to-day. We are in-debted to Mr. J. G. Baker, of Kew, for a clear and useful system of grouping, published in the Gardeners' Chronicle in 1869. Mr. Baker's plan depends on the relative length which naturally exists between the perianth segments as contrasted with the cup or corona, and I have divided those three main divisions into flat-leaved and Rush-leaved groups.

The three main divisions, as characterised by the varying size of their cups or crowns, may be thus CLASSIFICATION OF THE GENUS NARCISSUS. Large Trunked.

Group I .- Magnicoronatæ, or "Coffee Cup" section.

Medium Cupped.

Group 11 .- Medicoronatæ, or "Tea Cup" section.

Small Crowned.

Group III .- Parvicoronatæ, or "Tea Saucer" section.

Group I .- Magnicoronata.

Crown as long, or longer, than the perianth divisions.

TRUMPET DAFFODIL. -HOOPED PETTICOAT DAFFODIL.

Flat-leaved.

Rush-leaved.

N. Pseudo-Narcissus var.

2. N. Bulbocodium var.

Flat-leaved.

I. N. Pseudo-Narcissus.—The type of this species is the common Daffodil of English meadows and orchards, and of this there are innumerable forms, ranging from the tiny N, minimus (fig. 78) up to N. maximus, which is the tallest and largest of its race. All the varieties have flat glaucous leaves.

Rush-leaved.

2. N. Bulbocodium. —The type of this species is N Bulbocodium, the "Rush-leaved" or "Hooped Petti-coat" Daffodil of Southern Europe. There are many varieties, all easily recognised by the expanded crinolinelike corona, narrow perianth-segments, declinate stamens, and green Rush-like leaves.

Group II .- Mediocoronatæ.

Crown half or rarely three-quarters as long as the perianth divisions.

MEGIUM CUPPED NARCISSUS.

Na	cissus 10comparabilis Macleaii dubius montanus	7. 8. 9.	Narcissus odorus ,, juncifolius ,, triandrus ,, calathious
**	montana	10.	,, Catalinous

Flat-leaved.

3. N. incomparabilis.-1-flowered. Leaf ½ inch broad,

glaucous.

4. N. Macleaii. — 1—2-flowered. Leaves broad, greenish; crown bright yellow, three-quarters as long as

greenist; crown origin years, three-quarters as on, as the spreading white perianth-segments (? hybrid).

5. N. dubius.—Many-flowered, with flattish, glaucous leaves. Perianth-segments 3—5 libes long. Cup 3 lines deep.

6. N. (montanus) poculiformis. — r—2-flowered, all white. Crown half as long as the perianth divisions. Flower "dog-eared," but 3 to 4 inches in diameter.

N. odorus (Campernelle Jonquii).—All yellow;
 5-flowered, with bright green Rush-like leaves.

8. N. juncifolius.—1-5 flowered, much smaller than N. odorus, with a flattish corona.

9. N. triandrus.—t-5 flowered; perianth divisions reflexed, like a Cyclamen flower.
10. N. calathirus.—t—2-flowered, with reflexed segments, like the last; perhaps only a geographical form

of it, having larger flowers.

Group III .- Parvicoronatæ.

Crown tess than half as long as the perianth divisions. SMALL-CROWNED NARCISSUS.

ī.	Na	rcissus Tazetta	17. 1	Varcissus intermed
		pachybolbus		" gracilis
3•	**	biflorus	19.	, Jooquilla
4.		poeticus	20.	, jonquilloides
5. 6.	**	Broussonetii	21.	,, viridiflorus
6.	**	canarieosis		,, elegans
			23.	serotinus

Flat-leaved.

11. N. Tazetta.-Many flowered, with flat glaucous leaves, very variable.

icaves, very variance.

12. N. pachybolbus.

13. N. biforus.—I—3-flowered, flowers like N poeticus, creamy-white, cup pure yellow.

14. N. poeticus.—I-flowered, white, with a purple or

red edge to the crown.

15. N. Broussonetii.—Crown nearly suppressed.

16. N. canariensis.

Rush-leaved.

17. N. intermedius.—A many-flowered yellow N Tazetta with Rush leaves.

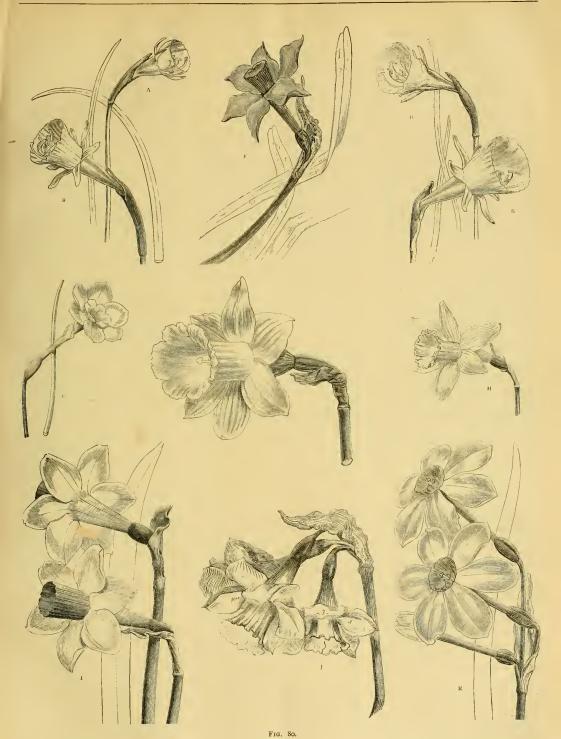
18. N. gracilis.—1—2-flowered; flowers pale yellow, as large as N. poeticus.
19. N. Jonquilla.—Many-flowered.
20. N. jonquilloides.—Flowers deep yellow, very

fragrant.

Autumn-flowering.

21. N. viridiflorus .- Many-flowered, perianth greenish.

22. N. elegans.—1—3-flowered, pure white.
23. N. serotinus.—Flowers after the leaves, very like the last, with broader perianth segments.



A, Narcissus (Bulbocodium) nivalis. B, N. Bulbocodium. C, The Tenby Daffodil (N. Pseudo-Narcissus var. obvallaris). D, N. (Bulbocodium) Graelsii. E, N. Bulbocodium a sulphur-coloured variety. F, A natural hybrid, flowers yellow. G, N. rupicola. H, N. (Pseudo-Narcissus) minor. I, N. Macleaii. J, N. tridymus x. K, N. gracilis.

Here is a list of all known type-hybrids, so far as we at present know them :-

were some conditions so favourable to the development of Daffodils that the singles became doubles

	Hybrid Narcissi.											
	Parents. Hybrids.											
Narc	Narcissus Pseudo-Narcissus × Narcissus poeticus × Narcissus incomparabilis											
11	11: 23			×	*	Jongu					×	,, odorus
33	Jonquilli			>		Tazett	а.				×	" Macleai
11	Jonquilla			×	11	11					×	,, gracilis and tenuior
	93 .			×	,	33					×	, intermedius and jooquilloides
	poeticus			X	11	Macle:					×	., Nelsoni in variety
9.1	1)			×	91	Pseud	0-N:	arcissus			×	,, Barrii in variety
, ,	. 21			×	11	11	**				×	,, Burbidgei in variety
22	incomparabi	115		×	71	11	21				×	,, Humei in variety
2.5	montanus			×		,,	,,				X	, Leedsii io variety
>>	incomparab	116		×	,,	**	- 11	moschatu	S.,		×	" Milieri in variety
39	poeticus			×	22	**	**	mulicus			×	Bernardi in variety
31	Macleaii	• •		×	19	11	19				×	" tridimus in variety
,,	Tazetta	• •		×	13	**	11	poculif.rn	nii		X	,, Mastersianus

DERIVATIVE HYBRIDS .- Some of these have again yielded seedlings, so that the variations now observable are of the most divergent and perplexing kind; so much so, indeed, that some have complained that there is too much sameness among the newer kinds of Narcissus. This much is true of Roses or Auriculasindeed, of nearly all florists' flowers; and after all it is easy to use one's eyes on a day like this, noting the most beautiful from one's own standpoint, and resolutely avoiding those which do not please our taste. To my mind the delicate chromatic scales, the subtleties of form and of colour, these new seedlings afford us, are most beautiful; and a garden tastefully planted with them would afford its owner beauty of a most satisfying kind, even if it did not prove a "joy

CULTURE .- The culture of all the Daffodils, and of nearly all the Narcissi, is not difficult. Most of them are robust enough to increase in beauty from year to year, if planted at the proper season in well tilled soil. Some of the dwarf and tender species, as N. triandrus, N. juncifolius, N. Bulbocodium (especially the paler forms), N. viridiflorus, N. elegans, and N. serotinus succeed best in pots in a cool house or frame. The white race of Daffodils also do best on a warm supply border, but the yellow or bicolor Daffo-dils, and nearly all the hybrid kinds, will luxuriate in the open-air borders almost anywhere. The proper time to transplant Narcissus generally is in June, July, or August. They may be dug up as soon as the soliage has withered away, and if replanted immediately in good well-drained soil they do not suffer much, if at all, by removal. It is a good plan to mulch well with rotten manure just before flowering time, and if you want very fine fresh flowers for show or decorative uses, cut them whilst they are in the bud stage and place them in water indoors to expand. If you post flowers to your friends pack them in the bud stage; you can thus send many buds, which will each and all open fresh and fair if placed in water immediately on their arrival.

DOUBLE DAFFODILS.

In my former notes (pp. 309, 376) the opinions were expressed that double Daffodils produced seeds, and that their increase was, in many cases, thereby, and not from root-growths only. I am now in a position to offer proof.

It has generally been assumed that in double Daffodils all the stamens and pistils were transformed into petals, and that as the reproductive organs were thus eliminated, there was no chance of seeding; consequently, upon this we had the theory put forth that single Daffodils became double by culture, rich soils, and favourable conditions, which fostered these "monstrosities" as they were called. Dean Herbert carried this idea so far asto lead him to remark (Amaryllidacca, p. 302), "I am informed that the Polyanthus Narcissus, in the vicinity of Naples, is oftener found in a wild state with double than with single flowers. Such plants, I think, must be the vestiges of ancient horticulture. The Dean evidently believed that doubles were only gardeners' productions, and not Nature's own varieties. If he had examined a few double Daffodils as I have been doing, by cutting them down through the centres, he would have found amongst the crowded petals, which fill the space usually vacant in the tube. the tripartite style, and the numerous anthers bearing pollen, and if he had sought for them later he might have found the actual seeds in the ovary.

This knowledge does not appear to have been acquired by Herbert, who confined his attention to single forms, all of which he dissected with the most minute care. The florists and botanists of our own day have held the like views, and believed that there under them. Our friend Mr. Wolley Dod was not convinced of this doctrine, and offered five pounds to any one who could produce a double from a single, and this reward he has persistently offered for some years without any such proof being brought forward.

When the Editor placed a query to my remarks (p. 309), that "double Daffodils come as seedlings may happen any year from any single plant, and "that it is possible that a double Daffodil is a species having the power of perpetuating its quality by seeds," I set to work to study the question with the view of adducing proof of my position. This proof I have now arrived at in several ways, but perhaps the simplest and clearest is taken from our wild Lent Lilies, N. Pseudo-Narcissus. It is well known that in some parts of Great Britain these occur, both single and double, in the same meadow. I therefore sent a competent person to such a locality to examine the flowers, and to send me examples of every variety of the Lent Lily, from single to double, and especially to note if the doubles produced seeds. and appeared to spread and increase by seeds, or by root growth alone.

The proof came as I expected, but I was not prepared for its completeness. The single and double forms were found growing in the same field. Whereever the doubles occurred there were also singles, but always in bunches, but there was every variety of doubling. To commence with, there was the ordinary single Lent Lily, and at the other extreme was the full double form of it, N. Pseudo-Narcissus fl.-pl., in which the tube was filled with petal growths. Between these was every stage of doubling; some had extra numbers of petals, others had a slight doubling low down in the tube, but in every case there were extra petals, only the pistil and stamens being always present; and there were two examples of the full double, where the flower was nearly over, and in these the ovary was plump and was filled with Here, then, is proof that the Lent Lily, in its double form, produces seeds and increases by these as with the single form,

My friend Mr. Archer Hind also bears testimony to the same effect in a letter, from which I extract the following:--"I have been reading your remarks about the seeding of double Daffodils. Of course I knew that double Stocks, &c., had been raised from the semi-double flowers, but it never occurred to me that the same might happen in the case of double Daffodils. In some cases I should imagine it next to impossible—e.g., in such as Queen Anne's Daffodil, N. capax, and Queen Anne's Jonquil; but I find that in some of the double flowers, both of the garden and wild Daffodil, there are retained amongst the petals what are apparently quite perfect stamina and pistils; and in a spot where I used to find the double wild Narcissus in some quantity, the groups of bulbs appeared to indicate that each group must have sprung from a separate seed, and that the several groups were not solely due to offsets. The groups were just at such a distance from each other as you would expect to find if they had sprung from seed. Whether these seeds were from the double plants I cannot say, but the probability seems to be that way. I think Mr. Archer Hind is right about N. capax, as I cannot find any traces of stamens or pistil in its centre, but in the double Jonquil they do exist, and the ovary is filled with seeds in an example I have just examined. Indeed all the double garden Narcissi except capax are furnished with the reproductive organs, however full the doubling, showing that there is no conversion of stamens and pistil into petals, as is usually supposed.

I am glad to note in the last Gardeners' Chronicle that my friend Mr. Wolley Dod agees with me in these views, and confirms them by the experience of others. William Brockbank, Brockhurst, Didsbury.

SINGLE WILD DAFFODIL TURNING TO LARGE SINGLE WILLD DAFFOOIL.—About ten years ago I wrote to the Gardeners' Chronicle asking whether it was generally known that the single wild Daffodil of our fields and copes would in cultivation turn to the large double Daffodil of gardens? Correspondents replied to this that the idea was absurd, because the double of the English wild Daffodil is a distinct flower; but other correspondents came forward and declared that in their experience the transformation I deciared that in their experience the transformation is had mentioned really took place. These statements were received with incredulity by the Editors, and set down to imperfect and intermittent observation. Knowing, however, that vegetable physiology abounds with facts more paradoxical than this, I resolved to try, but after five years gave up the attempt as hopeless, and became myself incredulous. I have continued since the to receive assurances noperess, and pecame myself intereducions. In have continued since then to receive assurances from different quarters that this change actually takes place, and I now write to say that I regret my former incredulity, and am converted to a belief that under certain unconstrained conditions of belief that under certain unconstrained conditions of soil and climate the single wild Daffodil becomes, without the intervention of seed, the large double Daffodil. I also apologise to all those who have taken the trouble from time to time to write on the subject, and whom I have told that "there must be some mistake." If they will write again to me on the some mistake." If they will write again to me on the subject. I shall be most grateful to them. I now send extracts from a letter received last week :- "I have extracts from a letter received last week:—"I have been much interested for the last two years by your letters about Daffodils, as you always doubt the single ones becoming double. We made a new garden four or five years ago, and put in it quantities of single Daffodils out of a wood in this neighbourhood. They all became double. I still doubted and planted more, with always the same result. I now send you roots and blooms, and would like to know your opinion. I have not more than twelve single-blooming plants left, and these only where they are storaged. in gplants left, and these only where they are starved in very poor soil. They hecome double in one year." Accompanying this letter were flowers which I ake to be typical single N. Pseudo-Narcissas and double N. Telamonius. It is possible, of course, that the wild Daffodil may have degenerated from flowers which were once double, but for all that in size and colour they exactly resemble the wild form. G. Wolley Dod, Llandudno, March 31.

— The plant mentioned at p. 418 from which the five Daffodii flowers were taken, was originally single-flowered; it has year by year been doubling, this is an undoubted fact. The same thing is happening with a somewhat similar Daffodil, growing under an Elm tree close by. The tendency of most flowers in this garden is to double. The Daffodils with the long-shaped cup, however, do not, if originally single, become double. This is my experience in a "Buckinghamshire Garden." May I be allowed to state, that the Narcissus with the long tube grows wild at Mentone, where it was pointed out to me under the name of Narcissus incomparabilis, by the late Mr. Moggridge. I remember well the little grassy orange-shaded ledge; above the stream in the Mentone valley, where it great above the stream in the Mentone valley, where it grew and I do not forget my disappointment in finding a "common Daffodil" instead of the real Narcissus of my lancy. The leaves and stalk were somewhat shorter than in the garden sort, as far as I remember, no other difference. E. V. B.

[The doubling of Daffodils arises, not from one, but

The doubing of Dataous arises, but from one, tait from several causes, treated on pretty fully in our columns in vol. iii., 1875, April 17 and April 24. In the former number we gave a figure of the true double Daffodil, referred to by Mr. Wolley Dod, and in the volume just referred to will be found numerous letters on the subject from various correspondents. The history of the so-called N. capax, or Eystettensis, together with an explanation of its peculiarities, is given in the Journal of the Linnean Society, vol. xw., p. 463, note. Ed.]

THEOBROMA CACAO, THE COCOA BEAN.— In the Royal Botanic Society's Garden, Regent's Park, there are now in one of the stoves two plants of this species bearing, one five fruits, and the other two—a fact that has rarely been observed in this country. The plant, which is a native of the Orinoco wo—a fact that has rarely been observed in this country. The plant, which is a native of the Orinoco region, blooms freely under warm-house culture, but seldom "sets," owing probably to the blooms requiring here artificial impregnation, in the absence of the particular insect or small bird that may assist at this operation in its tropical habitat. The flowers, which are produced abundantly in autumn and winter, expring directly out of the older bark of the stems and branches; these are small, whitish, and quite insignificant, rendering the plant, an evergreen with large green foliage, of bat small dccrative value. The fruit its 5 inches in length, and 2 inches in diameter in the middle; in shape a pointed oval, with a few well-defined longitudinal ribs running from the stalk to the apex of the fruit. Colour at the present time is green mottled with Colour at the present time is green mottled with



ODONTOGLOSSUM IOPLOCON, n. sp.*

I saw this as long ago as March, 1880, but with nothing but monstrous flowers. It has nearly the panicled flowers of Odontoglossum ramosissimum, but the sepals and petals are narrower, mauve, and wavy. The lip has at each side of the base a projecting blunt divaricate angle and the mid-lacinia is linear triangular. There is a peculiar system of orange calli at the base. Two large knobs stand parallel and contiguous at the Lase, having a small tooth on each side at the anterior side of the base, and three small teeth stand in front of the odd one in the middle. The flower is mauve, the apex of the mid-lacinia of lip Column bright mauve at the top, light green at the base, with two very small triangular wings at top. It was sent by Mr. W. Bull. If it be a mule, it might be derived from Odontoglossum Edwardi and ramosissimum, but it may as well be an independent species. H. G. Rehb. f.

LÆLIA ANCEPS LEEANA, Hort. Sand.

A curious thing, that can only be judged after having flowered repeatedly. Its flowers are smaller by one-fifth than usual. The sepals and petals by one-fifth than usual. The sepals and are white, the petals narrow and very acute. The lip is not so well cut as in all the flowers of anceps (alas ! too many !) seen till now. The side laciniæ are blunt, and grow in the very small tri-angular, wavy, anterior lacinia. The thick median ridge is well developed, and runs very far, nearly to the apex of the lip. The interior part of the sidelacinize is yellow, white outside. There are reddish stripes running obliquely over the yellow zones on both sides of the mid-line, two reddish-purple stripes on either side of the mid-line, and the small areas at the top of the side-laciniæ are fine light purple in colour. It has flowered with Mr. Sander only, and that gentleman expresses his satisfaction at having found in Mr. Lee a purchaser for this unique specimen by giving it the above garden name, H. G. Rchb. f.

DENDROBIUM NOBILE (Lind.) TOLLIANUM, n. var.

DENDROBUM NOBILE (LIMA) ACLUMNOS, Mr. This is a very fine variety. Mr. George Toll, Hullard Hall Nursery, and 358, Stretford Road, Manchester, "picked it up" at one of Mr. Stevens' sales five years ago, and has sent me flowers every year since March, 1882, and which, by-the-bye, improved very much. Mr. Toll may, however, be surprised to learn that Mr. William Lee, of Downside, Leatherhead, Surrey, sent me the same treasure. The bulbs was a Stringe shigh in 1882, and nendulou, The head, Surrey, sent me the same treasure. The bulbs were 18 inches high in 1882, and pendulou. The great feature is, that the petals have a very pretty border of purple, and some fine spots and streaks of purple on the disc and at the base. It is a common feature of Dendrobium nobile for the very base of the flower to have a certain development of epigynous disc. This is enlarged into a wide three-lobed body in our plant. The column is exceedingly thick, has a very small anther, scanty pollinia, and the cells of the tela conductrix appear not to form any mucous

Mr. Toll's last flowers show a certain tendency to become twisted, and if the plant is well taken care of it will no doubt produce surprises of many kinds, at least I hope and I suspect so. We must admit that the petals are assuming the character of the lip, and when the three lips are fully developed the fovea will disappear, and when the column is reduced there

disappear, and when the column is reduced these will appear a flost flems.

The flowers should be sent to Dr. Masters, who is eagerly expected to find leisure for a new edition of his Veyetable Teratology, the first one being said to be totally exhausted by our booksellers. A German translation would be acceptable. H. G.

ROYAL HORTICULTURAL SOCIETY OF ABER-DEEN.—It is reported that the Prince of Wales has presented to the Royal Horfuchural Society of Aberdeen a silver cup to be competed for at the exhibition of the Society in Aberdeen to be held during the visit of the British Association next year.

ROMAN HYACINTHS.

THE origin of the Roman Hyacinth (varieties of H. præcox and H. albulus), and of its introduction into cultivation, have been told in our columns by M. Krelage and others (p. 145, vol. xi.). But while some are interested in the history, many more are delighted with the beauty and fragrance of these varieties, and with the facilities they present for early forcing. Their use as border plauts is not so well known, yet if we may judge from some specimens sent us by Messrs, Hooper & Co., of Covent Garden, they ought to have a future before them. Messrs. Hooper send us from their trial grounds, where they have been grown without the slightest protection, the following varieties :-

WHITE ROMAN seems to be the ordinary form, but the flowers are rather larger than when forced-a little less than I inch in length, and pure white. The bracts at the base of the short flower-stalk are ovate acute. This is the earliest single white.

WHITE ITALIAN, with more numerous flowers to the raceme than in the preceding, while the individual flowers are rather larger, exceeding 1 inch, and of a creamy-white flushed with pale rose. The little bracts at the base of the flower-stalks are linear, This is a stronger grower than the White Roman, and

DOUBLE ROSE ITALIAN has numerous pale rose or cream coloured flowers, each about t inch long, with two flower-stalks shorter than in the two preceding, and short roundish shell-like bracts which gradually pass into mere threads in the case of the uppermost flowers; it follows the White Roman. The doubling is due to the appearance of a number of supernumerary segments, some of which bear imperfect anthers; the true stamens occupy their usual position, but the pistil is somewhat leafy. Messrs. Hooper speak of this as a good white, and so it may be in a fresh state, but unfortunately we were not able to examine it till the flowers had somewhat faded, when the blooms had a rose tint.

BLUE ROMAN.—In this the scape is deep purple-blue, the flower-stalks about ½ inch long, each spring-ing from the axil of a shallow cup-like bract; the individual flowers are rather less than t inch long, deep purplish-blue.

HOME GROWN ORANGES.

WE are indebted to Mr. Rivers for an excellent series of specimens illustrative of various kinds of Oranges, Lemons, &c., grown in his orchard-house at Sawbridgeworth. Amongst them are the following, all of which were juicy and well flavoured :-

Bergamot Lemon. - A robust-growing spineless shrub or tree, with shortly-stalked, oblong leaves, crenate-serrate, the largest ones measuring 4 to 5 inches in length by $2\frac{1}{2}$ in breadth. The flower-stalk is about $2\frac{1}{2}$ inches long, cylindrical, with a broad, circular, cup-shaped calyx. The fruits are about 3 inches in diameter, globose, strongly flattened at the top, rounded at the base, the rind pale yellow, smooth. At the top of the fruit is a slight circular depression, suggestive of the nipple-like prejection characteristic of ordinary Lemons.

Excelsior Orange.-Branches slender, leaves with a winged petiole about 4 inch long, the blades 3 by 11 inch, oblong, lanceolate, acuminate, wedge-shaped at the base, faintly sinuate at the margin, flowerstalks cylindrical, a inch long, slender; calyx flat, fruit $3\frac{1}{2}$ inches long by 3 inches broad, oblong, obtuse at both ends, slightly depressed at the base, still less so at the summit, bright orange, rugose and pitted on the surface.

The White Orange,-Branches slender, leaf-stalks scarcely winged, less than 1 inch long, blades 3 inches by I inch, lanceolate, acuminate, tapering towards the base, and very slightly undulated at the margin. Flower-stalk slender, cylindrical, & inch long. 27 by 21 inches, elongated, globose, depressed at the tip, and slightly so at the base, deep orange, rugose,

Silver Orange.-Branches slender, leaf-stalk & inch long, scarcely winged, leaves 32 inches by 14 inch, lanceolate, acuminate, slightly rounded at the base, margin undulate. Flower-stalk ½ inch loog, cyliodrical and slender. A very pretty globose fruit, 2½ inches in

diameter, orange, scarcely depressed either at the

diameter, orange, scarcely depressed either at the base or at the apex; rugose.

St. Michael's Orange,—Branches slender, leaf-stalk scarcely winged, \(\frac{1}{2}\) inch long; leaf lanceolate, acuminate, rather acute at the base, entire or faintly undulate at the margin. Flower-stalk less than \(\frac{1}{2}\) inch and \(\frac{1}{2}\) inch sacross, slightly depressed at the apex, scarcely so at the base, deep orange, coarsely rigose, uneven and pitted. The identity of this with the true St. Michael's Orange is open to question.

Long Orange.—Branches slender, leaf-stalk not winged, it inch long, leaves 4 inches by 14 inch, oblong,

winged, ½ inch'long, leaves 4 inches by 1½ inch, oblong, or oblong lanceolate, shortly acuminate, rounded or tapering at the base, undulate at the margin. Flowerstalk ½ inch thick, cylindrical. Fruit oblong, 3 by 2½ inches, slightly depressed at the base, less so at the top; bright orange, coarsely rugose, and pitted. Maltese Blood Ovange.—Branches slender, leaf-stalk slightly wioged, ½ inch long; blades 4½ inches by 1½ inch, lanceolate, broadly acuminate, obscurely simuste, dentate, taperiog at the base. Flower-stalk ½ inch thick, cylindrical. Fruit oblong, globose, 2½ by 2½ inches, slightly depressed at the base, less so at the apex; bright orange, rugose, pitted, perfume strong, flavour excellent. flavour excellent.

Egg Orange.—Branches slender, leaves broadly lance-shaped, acuminate, tapering at the base, faioily serrated. Flower-stalk 3½ inches thick, cylindrical, club-shaped, calyx shallow. Fruit depressed, globose, 2½ to 2½ inches long, depressed at the base and at the apex, marked more or less deeply by longitudinal furrows. Yellowish-orange, coarsety rugose, slightly aromatic.

Sweet Brazilian Lemon .- Branches slender, leafstalk ½ inch, not winged, leaves broadly lanceolare, acute, scarcely acuminate, creante, serrate. Flower-stalks, solitary axillary, erect, dilated at the upper end, calyx cup-shaped, ½ ioch deep, globose, shallow, triangular; petals five, nearly I inch long, oblong, trangular; petals nve, nearly I inch long, oblong, sub-acute, stamens very numerous, filaments free, styles confluent into a column, terminated by an oblong button-like projection. Fruit oblong, rounded, and furrowed at the base, with a projecting nipple at the apex, 2½ inches long by 2 inches broad, lemonyellow, coarsely rugose and pitted.

Bijout Lemon.—Branches slender, leaf-stalk \(\frac{1}{2}\) inches his total \(\frac{1}{2}\) inches his total \(\frac{1}{2}\) inches his total \(\frac{1}{2}\) inches his talk \(\frac{1}{2}\) inches h

not winged, 2 inches by 1½ inch, ovate, or obovate, acute, or slightly and abruptly acuminate, serrulate, slightly broader than long. Flower-stalk ½ inch, slerslightly broader than long. Ftower-stalk ½ inch, slerder, cylindrical, calyx a flattened cup with a five sided der, cymanical, caryx a natenero cap with a new slote border projecting into five short points. Fruit sub-globose, 1½ to 1 inch deep, rounded at the base, flat-tened at the top, smooth, with a small nipple-like promisence in the centre, pale primrose-yellow, fragrant.

veet Lime .- Fruit 1 inch long by 11 inch broad, slightly longer than broad, oblong, obscurely angular, scarcely depressed at the base, flattened at the top, with a central dome-like prominence; colour pale yellow; very fragrant, smooth.

About the same time we received from our ex-cellent correspondent, Dr. H. Bennett, an Orange, of which we give the description here, referring the reader for a fuller account to Dr. Bennett's letter in

St. Michael's Orange. - From Mentone. st. micnaets orange. — From Mentone. Calyx broad, cup-shaped, regularly 5-sided, with shap points. Fruit globose, 24 inch in diameter, rounded at the base, scarcely flattened at the apex, rugose, and pitted. Deep orange.

MESSRS, LAING'S BEGONIAS.

A VISIT paid to these nurseries during the month of March enables one to gain some idea of the popularity of this section of flowering Begonias. Not only are seedlings of the present year being pricked off by the thousand, but the work of potting off the tubers kept through the winter is also in course of performance. As inquiries are sometimes made as to the best mode of wintering the tubers, it may be stated that Messrs. J. Laiog & Co. plant out many thousands of seedlings during the summer, and as a matter of course the best of these that flower are marked for trial another year. At lifting time the bulbs of the selected seedlings are put singly into small pots filled with cocoa-fibre, and then piled up in layers with cocoa-fibre between them on the stage of a bouse to winter. A very small percentage indeed is found to decay. The remainder of the bulbs are stored away in boxes after the soil has been shaken from them, and they have dried somewhat, and cocoa-fibre in a dry state is mixed with them; a few of these decay, but the losses are very slight. The cocoa-fibre holds moisture enough to keep the tubers from shrivelling, while there is not sufficient to cause it to ferment and burry them into premature growth. On turning out the lubers it is found they are beginning to start into

Odouteglossum iophoon, n. sp.—Paniculatum, sepalis cuneato-laceolatis acunicatis undulati; tepalis subsequalibus, sepalis lateralibus divuntist is habel idanimis lateralibus divuntistis is habel idanimis lateralibus divuntistis in mediana lineari securita, con divuntisti unitati propositi della propositi di propositi della propositi di propositi della propositi di propositi della propositi de

growth, and they are at once potted in suitable soil, and stood in an airy greenhouse, and for a time somewhat sparingly sprinkled overhead with water. The visitor noticed that at the time of potting the tubers are quite covered with soil. Some of the tubers, being three and four or more years old, require good-sized pots, but it does not matter if they nearly touch the sides if they have adequate root-room beneath. The best tubers to make fine exhibition plants are those about two years old; and if skilfully handled these can be grown into specimens 2 to 3 feet through. Some tubers potted at Christmas are already coming into flower, for it is necessary to have a succession of blooming plants.

Just now the work of pricking off seedlings from the seed-pans is in full swing. The seeds are sown as thinly as possible in pans of light soil in the month of February, and when they put forth their third and fourth leaves they are pricked off into other pans. This is a very interesting process. The operator has a thin piece of lath, rounded, a foot or more in length, pointed at one end and with a cleft at the other end, forming a kind of fork. With the point a small hole is made in the soil of the pan to be filled; then by dexterously turning the stick the fork is placed under a tiny plant, removed from the soil, and dropped in the bole already made. Then by rapidly turning it again the soil is pressed about the tiny roots. A proficient transplants with wonderful quickness. Seed-lings are pricked off in this way two or three times, giving them more space each time, until they are strong enough to be potted off or planted out. matter of course it can scarcely be expected that seedling plants placed in the open ground would grow into great size the same year, but a great number of them at least will bloom, enabling the grower to select what is good and reject what is indifferent. Since the introduction of B. boliviensis and B. Veitchii, nearly twenty years ago, what a marvellous improvement has taken place in this class of plants, and how great the perfection to which they have been brought during the last three years ! R. D.

PROFITABLE GRAPE GROWING.

In growing Grapes for market the profitableness or otherwise of the crop will depend on the season at which it is sent to market. Growers in these [Channel] Islands have very great advantages in the matter of forcing, and where the vinery is well situated and the Vines well managed and gradually worked up to proper condition, it is not a very difficult matter to have ripe Grapes before May 1, and the small amount of forcing required to get them thus early would astonish many gardeners used to the practice in the neighbourhood of London or further north.

It must be confessed there are not many vineries worked so early, and considering the inducement of 122. or 155. per pound, this is a matter of some surprise to us, and shows that much more might be made than is now being done, except by a very few growers. Some growers are for ever crying out that the thing will be overdone—we don't believe it, as far as these islands are concerned; with all our advantages of soil and climate and cheap and rapid communication with London and all the large centres of population, there will always be a profitable market for all the Grapes we can supply, and none can drive us out of it. And it is consumers' own fault if their tables are not well supplied during the latter part of August, and all September with good Grapes, at 15. or 15. 3d. per pound, and that price would give the grower a fair profit if he conducts his business on a large scale.

Last season inferior samples fetched less than 6d, per pound, but we doubt if these were sold to the consumers at less than 1s. The average prices returned for Hamburghs during nine months are as follows:—April, 15s. per pound; May, 7s. 6d, per pound; June, 5s. per pound; May, 7s. 6d, per pound; August, 1s. 6d, per pound; September, 1s. 9er pound; October, 2s. 6d, per pound; November, 3s. per pound; October, 2s. 6d, per pound. Mosents, if good, will fetch more, yet these can be grown to the highest perfection in an unheated house, and therefore equally as cheap as Hamburghs. We inspected a vinery last season about 200 feet long, unheated, which contained a truly magnificent crop of well-ripened Muscats of Alexandria. They were ripe in August, but were not sent to market till October, and paid well for keeping. The Persey Gardener.

MR. JENSEN ON THE POTATO

PRACTICAL DEDUCTIONS.

In the communications upon the Potato disease which have recently appeared in the Gardener's Chronicle, many important and interesting observations have been given in detail, the interest of which is perhaps greater to the scientific botanist than to the Potato grower. The following remarks are principally confined to the practical deductions to be derived therefrom.

It will be remembered that certain objections of a theoretical character have been raised against the advantages of high-moulding, which I did my best to condute as they arose; my present object, however, is to explain what "high-moulding" is, why it protects the tubers from the disease, how and when it ought to be done. In order to do this intelligibly it is neces-



FIG. 81.-HIGH-MOULDING, WITH BRECT TOPS



Fig. 8z.-High-Moulding, with Bent Tops.



Fig. 83.—HIGH-MOULLING, WITH SLIGHTLY BENT TOPS, DONE EARLY.



Fig. 84—moulding as it is often done by the flough. (See F 447, c.)

sary to state first that the Potato disease is due to a parasitic fungus (i.e., a fungus which can only subsist upon living Potatos—foliage and tubers, and a few nearly allied plants, notably upon the Tomatol; that this fungus reproduces itself by means of spores—and not only reproduces itself with incalculable rapidity, but also spreads itself far and near by the same means—far in the sense of travelling from one plant to another, near in the sense of spreading from one part of the same plant to another; that although these bodies are produced in such enormous quantities, yet each individual spore has only a very limited duration of life, being easily destroyed (1) by heat at any temperature above 77° F.; (2) by dryness, being kept in dry air for a few hours; (3) by germinating upon any and every substance other than a living Potato plant or tuber.

Lastly, that the fungus spreads from the foliage to the tubers by the spores being carried by the rain, through the soil covering them, to the Potatos. Now while this is true, yet it is a matter of common observation that the disease travels down the stem to the tubers. The reason for this is obvious to the

most cursory observer. Naturally the rain, falling upon the foliage, is conveyed along the leaf-stalks to the stem, and by it to the underground stems and roots, on which point the Potato does not differ from any other plant. But in the case before us the foliage is that part of the plant where the disease-spores are produced, consequently the water conducted by the stem to the roots is, in this instance, charged with spores. Moreover, the constant oscillation of the stem by wind and weather * loosens the earth in contact with its base, so that in course of time a crater-like cavity is formed, from the centre of which the stem emerges. It has been shown that the earth covering the tubers, if it be of sufficient thickness, has the power of filtering out the spores and retaining them, bereby protecting the tubers from the disease; hence it follows that in any attempt at protecting the tubers by "high-moulding" this crater-like cavity at the base of the stems must be taken into account. If it be desired to grow Potatos in such a way as that none of the tubers shall be diseased, it can be done easily enough in the following manner:—About the middle of July, before any disease has appeared at all upon the foliage, bend the tops of those roots you wish to protect, well over to one side, so that instead of heing upright they hang over the adjoining furrow (fig. 82), and at the same time increase the height of the moulding, so that 5 inches of earth cover the most superficial tuber. Leave the plants thus treated with perfect confidence until the whole of the foliage and stems have been completely destroyed by the disease, and you will find the tubers perfectly healthy, and absolutely free from disease. If you have left a number of control Potatos grown in the ordinary way, you will find them more or less affected with the disease, according to the kind of Potato employed and the virulence of the outbreak. But you will also find another thing, namely, that although the high-moulded tubers are free from disease, yet they are inferior in point of size to those grown in the ordinary way. This arises, not from the high-moulding itself, but from the bending of the Mr. Jensen thinks it mainly due to the foliage being less exposed to the sunshine, for one-half of it is always thus in the shade. For my own part, I think it is also due to the injury necessarily done to the lower parts of the stems in the act of bending, whereby the free passage of the fluids between the roots and foliage is interfered with. It must also be remembered that, by bending the stem down, so that the foliage is close to the ground, the fungus spreads much more rapidly upon it, the atmosphere immediately around it being damper and more stagnant. Of course our object in the above experiment was to grow Potatos free from disease, and therefore was perhaps rather more theoretical in its purpose than practical. We learn, however, from it two things-first and mainly, that it is possible to combat the disease; and at any rate we have a clear and definite principle upon which to go; secondly, we learn that we must not be too rough in our treatment of the tops-we must not bend them too energetically. The great point gained, however, is to have learned the fact that it is in our power to control the ravages of the disease, to have a clear and defined principle upon which to act. There are many conditions under which this may be most valuable; for example, a severe outbreak of the disease may have taken place, by which it is obvious that the crop must be destroyed almost entirely. Up to the present time only two things have been done; either the crop has been lifted then and there, regardless of the fact that the tubers are immature, and that in the very act of lifting a great quantity of the tubers will become infected and destroyed by "after-sickness;" or else the tops have been cut off, to the great detriment of the tubers themselves, irrespective of its comparative inutility in arresting the spread of the disease.

We now know that instead of adopting either of these procedures, by protective moulding being applied to the crop we shall save whatever tubers have not already become infected, and also we shall be able to prevent the "after-sickness" by not lifting the tubers until the tops have been thoroughly destroyed.

Is it possible to apply the principle of protective moulding without diminishing the yield? This is naturally the question which every Potato grower will ask. Last year Mr. Hansen grew at Hverringe Kjorteminde, Denmark, the following three varieties, as under:—Four rows, 108 feet

^{*} Possibly aided by its revolving nutation—circumnutatory movements.

(Danish) long, were grown of each sort, with protective moulding and bent tops, while four other rows were grown in the ordinary manner. The results are given in Danish pounds ($101\frac{1}{2} = 112$ lb. avoirdupois):—

Protective Moulding - Bent Tops.

		Sound.	Diseased	Total.
Early Rose	 	1463	28	1491
Prima Donoa	 	1592	9	1601
Early Goodrich	 	1524	7	1531
		4579	44	4623

Ordinary Moulding.

		Sound.	Diseased.	Total.
Early Rose	 	961	389	1350
Prima Donna	 	1344	201	1545
Early Goodrich	 	1192	195	1387
		3497	785	4282

The soil was a strong clay, in good garden condition. The crop, obtained by the ordinary method of Potato culture, was equal to 640 cwt. per acre, while that obtained by the protective moulding, although the tops were bent, was equal to 693 cwt. per acre. Of course this was an exceptional crop in point of quantity. The common moulded rows were diseased to the extent of 117 cwt. per acre, the protective moulded rows only 7½ cwt. per acre.

The time at which the bending of the tops is done has a considerable influence upon the yield, as the following results obtained last year by Mr. Jensen will show: —

Protective Moulding with Bent Tops.

Moulding,		Date			Disease. Per Cent.		Earth cover- ing.		Average Pro- duce in lbs.	
				Early Late.		Early.	Late.	Early.	Late.	
High		July	_,	19	1.5	In.	In.	41 8	26.4	
,,		1,	15	00	0.4	41	5	318	22.6	
13	٠.	,,	23	03	0.9	41/2	5	34.1	22.7	
**	٠.	Aug.	16	0.2	0,0	43	5	45 I	26.0	
18		Sept.	I	69	22 3	42	5	45.2	30.2	
Common		July	ī	12.7	25 6	3	3	41.0	30.5	
Flat		June	20	29.5	49-5	1/2	1/2	44-0	27.2	

From the above it will be seen that there is a very marked diminution of the produce in those plants which had their tops beat on July 15 and 23, but this diminution did not take place when the bending was done either before or after those dates. The obvious conclusion is that this operation should not be done while the plants are flowering. In looking at the percentage of disease we see that this varied from 0.0 to 1.9 per cent, in those plants high-moulded between July 1 and August 16. On September 1 the disease was widely spread upon the leaves, hence the protection afforded was but slight as compared with the previous instances. It should be remarked that the ordinary moulding in this instance consisted of an earth cover of 3 inches, which is fully an inch more than is usually given to Potatos. By comparing the thickness of the earth cover in the three different kinds of mould-high, ordinary, and flat-in the above table, and the amount of disease, we see at a glance the increased protection that each additional inch affords.

Protective Moulding with Erect Tops.

Moulding.		Date.		Disease. Per Cent.		Earth	Cover.	Average Pro- duce to lbs.	
				Early.	Late.	Early	Late.	Early.	Late.
High	-	July	x	1.9	10.4	In. 4½	In. 41	37-9	25.0
.,		,,	15	1,0	10.4	41	41	38.4	25 9
,,			23	0.2	50	41/2	41	39-9	26.2
		Aug	1	2.5	10.4	41/2	41	36.4	24 0
Common		July	1	59	17.9	31/2	3	36.3	26.2
Flat		June	20	173	418	1 1	r 1/2	417	22.0

By the above table we see that the late variety got three-quarters of an inch less earth cover than the late variety did with the bent-tops experiment; hence the protection was less marked than it would have otherwise been. The interesting point, however, is to contrast the effect upon the yield. If we omit those plants which had their tops bent on July 15 and 23, we find that with *--

		Tops bent.	Tops erect
Protective moulding	 	Lb. 35 8	Lb. 3 ·7
Common moulding	 	35 8	31.2
Flat moulding	 	35.6	31.5

Some experiments were last year made in Scotland with protective moulding upon a pretty large scale,

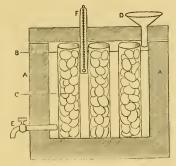


Fig. 85.—APPARATUS FOR DISINFECTING POTATOS BY WARM WATER.

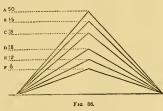
A, A, Double hox, packed with chaff or any other non-conducting material. B, Water, at 100 - 120 F. c, Cylinder coataining the Potatos to be disinfected. D, Opening in the lid for replenishing the water. B, Opening for letting out the cooled water. F, Thermometer.

extending over a quarter of an acre, the moulding being done with a plough. The drills were sixtyeight in number, 25 feet long, and the results obtained were as under:—

Results obtained by Messes. Shirr ff and Spiers in

	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,						
	Total Produce of each Drill in lba.						
Moulding.	Tops Bent.	Disease. Perceot.	Tops erect.	Disease. Percei t.			
High	32	11	35	14			
Ordinary	35	18	351/4	30			
Flat	3234	21	311/2	35			
High	27	4	231/2	6			
Ordinary	27	73/2	2334	131/2			
Fiat	25	29	221/2	321/2			
	Moulding. High Ordinary Flat High Ordinary	Total F	Moulding. Tops Bent. Disease. Percent. High Ordinary 32 11 Ordinary 35 18 Flat 32½ 21 High 27 4 4 Ordinary 27 7½	Moulding. Total Produce of each Dr. Tops Disease. Tops Perceot. erect. High 32 11 35 Ordinary 35 18 35% Flat 32% 21 31% High 27 4 23% Ordinary 27 7½ 23%			

One pound per drill is equal to 61 cwt. per acre. The high-moulding was done at different dates,



A, 50', Compact earth; B, 45', Well-drained clay; c, 38', Dry sand; D, 28', Vegetable mould; E, 22', Wet sand; F, 16', Wet clay.

between July and the middle of September. Mr. Shirriff says, in a communication to the East Lothian Farmers' Club:—"The results of these experiments show that hending over the stems lessens the percentage of the disease, but diminishes the produce, and the moulding with erect stems only very slightly diminishes the produce. The average results per

* As I understand Mr. Jensen, this includes both diseased and sound tubers.

drill between ordinary and protective moulding, both in the early and late varieties, gives exactly \$\frac{1}{4}\$ lb. per drill, or about 12 stones per acre of total produce in favour of ordinary moulding." The yield per acre of the early sorts was between 7 and 8 tons per acre, and that of the late sorts between 10 and 11 tons, compared with which 12 stones is a mere trifle compared to the quantity of tubers destroyed by the disease.

Mr. Shirriff further states that-

	3.1	o. of d	-ille	Yield per acre in hundredweights.				
	14	0, 01 0	riiis,	Moulded.	Uomoulded.			
14				 175	1752			
8				 172₹	155}			
16				 185 <u>11</u>	103			

The fact that high-moulding, per se, does, under certain circumstances dlminish the produce, be it ever so little, is one which deserves consideration. This seems to arise from the fact that io high-moulding the extent of surface is increased so that evaporation is augmented; heace, in dry summers, upon sandy soils, this diminution attains its maximum, while, upon the other hand, in stiff soils, and in damp situations, the reverse is the case, and under such circumstances an increase and not a decrease in the produce accrues from high moulding.

It is of course a well-known fact that sandy soils are better suited for Potato culture than clayey soils, but the cultivators of Potatos do not all happen to have the good fortune to dwell in districts of this description. In like manner we cannot predicate the amount of rainfall which we shall have in any given year, but we do know that certain parts of the United Kingdom have annually a much greater rainfall than others—Ireland for example, which country offers, for this reason, peculiar attractions for protective moulding. It may be suggested that only known disease-resisting varieties should be grown, but these are nearly all of inferior quality.

It should be remarked that there is a physical limit to which high-moulding can be carried. The natural slopes of various kinds of earth are well known to engineers, and the accompanying diagram (fig. 86), constructed from the data given in Molesworth's little book, shows these slopes graphically. is measured from the horizon. It will be observed that while compact earth will stand at 50°, dry sand only stands at 38°, but both these are liable to be washed down by long-continued rain; wet clay sinks as low as 16°, while well-drained clay stands at 45°. The angle which Mr. Jeosen recommends is about 35°, which will probably be about the average of various kinds of cultivated soils; but it is obvious that, in order to get the high-moulding of a ridge to be tolerably permanent, the drills must not be too close together. The accompanying diagram shows (fig. 81, p. 446) high-moulding with erect tops; fig. 82, high-moulding with bent tops, which gives the greatest degree, practically absolute protection to the tubers, but diminishes somewhat the produce; fig. 83 shows high moulding done early from one side: the tops were at first slightly heat, but soon recovered an erect position; fig. 84 shows a not very uncommon form of moulding seen in Potato fields where the operation has been carelessly performed by the plough. The earth thrown up from the furrow on either side the ridge has not been sufficient in quantity to meet on the top, so that instead of a sharp point to the ridge, a shallow groove is formed. I noticed this in several fields last year. It is simply an invitation to the conidia to attack the tubers. Besides the groove originally left, the stalks have in this diagram by oscillation worked for themselves a funnel-shaped hole leading directly to the

The subjoined rules have been drawn up by Mr. Iensen:—

1. The rows must be a least 30 inches apart.

2. High-mould from one side only, with a view to cover the uppermost tubers with at least 5 inches of loose mould. This covering will as a rule be obtained when, immediately after the moulding has been done, the ridges have a height of 11 or 12 inches measured perpendicularly from the bottom of the furrows.

3. High-mould as soon as the plants are high enough for it. The tops must not be bent more than is necessary for allowing the mould to enter and fill up the space between the stalks to the full height of

the ridge. The plants will in a few days reassume the erect position as nearly as possible.

4. If for any reason the high-moulding has not been given to the Potatos before they have commenced flowering and an attack of the disease necessitates a protective moulding, this had under these circumstances better be given from both sides without bending the tops.

AFTER-SICKNESS.-This most important subject must not be lost sight of. It ought to be borne in mind that the tubers are as easily infected by the spores falling upon them when they are first taken out of the ground as they are while still in it. Hence the obvious importance of not thinking about lifting a crop until the tops are thoroughly dead. Lifting should never be begun until at least a week after the leaves are all ground and well protected with a sufficient earth covering from the spores of the disease, but if they be uncovered in an atmosphere filled by countless myriads of spores, many tubers are sure to fall a prey to the destroying fungus. Fortunately, we know that although these spores are present in such enormous numbers, yet in a very short time they become harmless, either by the heat of the sun or the dryness of the air, or by germinating upon the damp ground.

DISINFECTION OF THE SEED POTATOS .- Ia a recent communication upon the Potato disease it was shown (1) that an early outbreak means a small crop, not only from the number of diseased tubers, but also from the relatively small size of the sound ones, due to the destruction of the foliage in an earlier state of the plant's life; (2) that the earliness of the outbreak is not wholly dependent upon the rainfall, but principally upon the number of diseased sets planted in spring. It follows, then, that if we can reduce the number of diseased sets planted we shall retard the general outbreak of the disease. It may be thought that the disease is so well known and so much dreaded that diseased sets are practically never planted, but a very small patch of mycelium may hybernate through winter, so inconspicuously as to be overlooked unless the Potato be washed, so as to remove the adherent dirt. Mr. Jensen has shown that a temperature of 77° F. kills both the mycelium and spores of the Peronospora, provided it be continued for a sufficiently long time, and that the germinating power of the Potato is not in any degree impaired by a considerably higher temperature than this. After a number of experimental investigations upon this point it has been proved that the exposure of tubers to a dry heat of about 100°-105° F. for four or five hours is the best and safest way of disinfecting them. On a large scale this may be done in a properly constructed oven where the temperature is carefully watched during the whole time. It is necessary that the heating procass be continued for some hours to ensure the deeper parts of the tubers being raised to the requisite temperature. On a small scale the most convenient apparatus is the following (see p. 447):—A double box is constructed capable of holding water in its interior: the space between the inner and the outer box being filled with some non-conductor of heat, chaff for instance. The inner box is filled with water at a temperature of 100°-120° F. Into this are placed tin or zinc cylinders about 5 inches in diameter, containing the tubers to be disinfected, where they are allowed to remain. By the employment of narrow cylinders like the above the Potatos are more readily heated than is the case if wider ones are used. A thermometer in the water is, of course, essential to ascertain its temperature. It may require an addition of warm water once or twice, according to the heat of the surrounding atmosphere and the efficacy of the nonconducting medium employed.

In my last communication upon the Potato disease two tables were given showing the rate of growth of the tubers from July to September. Now, as soon as the Peronospora destroys the foliage, it follows that this growth of the tubers ceases; hence it is obvious that any cause which shall retard this destruction of the foliage, even for a few days, will proportionately iocrease the produce. In this same communication I also gave Mr. Jensen's observations upon the rate at which the disease spread in his garden at Neuilly, Here the first diseased shoot, which was intentionally produced, appeared on May 29, and it took thirty-three days (i.e., till July 2) for the disease to spread 3 feet, and twelve more (July 14) before it was sufficiently advanced to be observable from a distance, but the disease was not general in the district until

July 29, that is to say, Mr. Jensen, by planting diseased sets, had the disease forty-five days before the general outbreak came. Hence it is obvious that one diseased set planted in a field is a powerful agent for evil to that field before the general outbreak comes.

It would appear that hy planting only such tubers as have been disinfected a gain of about fourteen days may be anticipated; this might be further augmented to perhaps double the time by allowing the disinfected tubers to sprout in a warm, dry, light place before they were planted. According to Köoig and Ham-merbacher's table, the young tubers on July 16 weighed 25.10 grammes, on July 30, 57.45; and on August 6, 84.13; so that if the disease could be staved off until July 30 they would be more than double the size than would be the case if they lost their foliage on July 16; and, further, if the disease could be staved off seven days longer, instead of weighing 57.45 lb. (or grammes, as the case may be), they would weigh 84.13 lb. Mr. Jensen proposes conducting further experiments during the coming season in this direction, the result of which will be anxiously looked for. Charles B. Plowright, 7, King Street, King's Lynn.

VALE ROYAL.

THE gardens at Lord Delamerc's Cheshire residence are always a treat to see. A new conservatory has recently been erected worthy of imitation, inasmuch as it is in every particular admirably adapted for the cultivation and exhibition of plants and flowers. How few conservatories there are connected with our great gardens in the country of which this can be said! Is it not a notorious fact that more than two-thirds of the conservatories in existence at the present time are quite unfit for the purpose for which they are erected-namely, to be the home for plants? Is it not a fact that, as a rule, these structures are unfit to put plants into? And why is this? Simply because the architect-who knows nothing about the requirements of plant life-is listened to before the gardener; or, in other words, the architect sacrifices everything for effect, regardless of the fact that his "effect" very often means death to the inmates of the building.

The building at Vale Royal is an exception to the rule, the reason being that practical men have had to deal with its erection. I have had the pleasure and privilege of seeing this house in all its glory during the last six months, and I have also seen most of the large establishments throughout the country, can safely say that I never saw two more lovely pictures than this house presented on the two occasions referred to. On the first occasion the main feature among the flowering plants was the Celosias. Among plants which have recently become popular these are not the least interesting; for whether considered in relation to their adaptability as single specimens, the elegance of their habit, or the desirableness of their rich masses of colour for conservatory decoration, they are certainly among the most useful tender annuals which has of late years been brought into notice. For rich colour there is nothing to surpass these feathery and plume-like Celosias. I saw about 150 splendidly grown plants judiciously distributed amongst other plants remarkable for brilliancy of colour or beauty of form, and, as I said before, the picture was one I shall not readily forget.

On the other occasion the main feature amongst the flowering plants consisted of some glorious examples of Calanthe Veitchii. Imagine about 200 grand spikes of this most lovely coloured flower scattered up and down, intermixed with Clivea miniata, small Palms, and Adiantums—and there also you have a picture of floral beauty not to be easily forgotten.

In the other departments (the fruit-houses and flower-garden) good cultivation is the rule; and Mr. Milne, the head-gardener, deserves great credit for the excellent keeping of the gardens, and it is gratifying to know that his services are highly appreciated by Lord and Lady Delamere. B. F.

CANISTRUM ROSEUM.—A Bromeliad with oblong leaves dilated at the base, acute at the apex, spinoso-dentate, dull green, with darker spots. The flower-stalk is shorter than the leaves, bearing pink bracts, the upper ones clustered around a head of small flowers. It is supposed to be a native of Brazil, and is figured in the Belgique Horticole, t. xiv., 1833,

Prchid Notes and Hleanings.

THE PICKRING LODGE ORCHIDS.—At the present time there is in Mr. Hardy's establishment a mass of Dendrobium Wardianum, consisting of twenty-three plants, bearing over 3000 flowers of extraordinary size and quality. These form a grand exhibition in themselves, but I would also mention that there is also to be seen here a marvellous plant of Aërides Veitchii carrying two spikes, one 3 feet long, with nine branches 10 inches long each; the other 18 inches to 2 feet long, with its branches 9 to 10 inches long. This plant will be grand in about a month's time. S. 9, Ascot.

DENDROBIUM LITUIFLORUM.—Now that many of these lovely Dendrobes are in bloom, we often come across one of this variety with flowers strongly suggestive of D. nobile, as well as seeing the high-coloured forms of D. nobile which come from the same locality, with a cast of countenance which immediately calls to mind D. lituiflorum. Possibly Nature has mingled the varieties by cross-fertilisation, for some of the forms of D, lituiflorum seem to be just what one might expect from D, transparens crossed with D, nobile. Mr. Cypher sends a three-flowered truss, which seems to illustrate the notion.

CATTLEYA TRIAN.E, POPAYAN VARS.—A pure white, with only an orange blotch in the throat, and one of the best of the high coloured varieties, with violet-crimson fringed labellum, both of the highest merit and possessing distinct features, come to us from Mr. Cypher, together with the most flattering account of his plants which have flowered out of Chesterton's collections, and also of those which have flowered in other establishments in the neighbourhood. We have seen several of this variety of Cattleya from different parts of the country, and all have been good.

DR. PATERSON, of the Bridge of Allan, sends some fine blooms of Lycaste Skinneri—probably the most generally valuable of winter and spring-flowering Orchids. A specimen of Cymbidium Lowii, with remarkably brightly coloured segments and spotted lip, comes from the same source, as well as spikes of the beautiful Chysis bractescens and Ceologyne ocellata maxima. Rodriguezia planicaule, though less showy than those just named, is interesting in having a dense pyramidal raceme of greenish flowers, with the lip in the normal position, that is, at the upper part of the flower. In most Orchids, owing to a twist in the flower-stalk or in the ovary, the lip gets twisted out of place, and occupies the lower part of the flower.

THUNIA MARSHALLIANA.—An Orchid of Reed like habit, but with deciduous oblong-acute leaves, from the axils of which proceed the large transversely oblong flowers, the sepals and petals spreading, lancolate, pure white, the lip convolute at the base round the column, the anterior disc of the lip roundish, somewhat spreading, marked with radiating orange lines, and with a narrow undulate white edge. The plant is a native of Moulmein. A coloured figure is given in the Orchid Album, 1. 130 (1884).

ODONTOGLOSSUM NEVADENSE.—A rare and beautiful species with ovate compressed smooth pseudobulbs, with a pair of narrow oblong acute leaves tapering the base. The raceme springs from the base of the pseudobulb, and bears 6—8 star-shaped flattish flowers; the sepals and petals lanceolate, rich chestnut-brown, with a narrow yellow edge; lip shorter than the segments, with two small broadly wedge-shaped white lobes, spotted with chestnut, the anterior lobe white, much larger, cuneate-obovate acuminate, the basal portion with three Pear-shaped purplish blotches, the edge deeply laciniate. The species is a native of New Grenada, and requires the same treatment as O. crispum (Alexandræ). Orchid Album, t. 131 (1854).

LELIA DAYANA.—A Brazilian species with short thick cylindric or clavate stems invested by leaf-sheaths; leaves oblong acute. Flowers one on a stalk, large, transversely oblong, sepals and petal, oblong, rosy-lilac with the ribs of a deeper colours lip rather larger than the other segments, convolute at the base, the disc rich magenta coloured with purple radiating streaks, and a white blotch in the throat. Figured in the Orchid Album, t. 132.

THE required stock of plants for filling the summer garden should now be complete and every means should be employed to thoroughly harden the plants by exposure, simply screening them from frost, so that when transplanted in May they will suffer no perceptible check; such plants, however, as Coleus, Alternanthera, and Iresine may still be propagated and kept growing, as they cannot with safety be planted out till the beginning of June, by which time the ground is generally sufficiently warmed to induce them to grow freely. In many establishments there is not sufficient pit and frame accommodation for the summer bedding plants, they are consequently too often crowded together in the vineries, Peach-houses, and other unsuitable structures through the spring months, where their constitution is so weakened by excessive heat and moisture as to make them quite unable to bear any sudden change of temperature, or even bright sunshine, after they are transplanted, without receiving great injury. Under such circumstances it is far better to place them out-of-doors now rather than continue to keep them in such unsuitable places. A warm corner of the garden should be selected where they can be placed on a dry bottom of ashes or gravel and hooped-over and carefully protected by stout mats or Frigi-Domo, and if kept moderately dry at the root they will soon become hardened and suffer no injury even should slight frosts occur.

Annuals,—This is a suitable time to sow seeds of the best kinds of hardy and half-hardy annuals. Many of these are now so popular, and the improved varieties are so beautiful, that no garden should be without them. To enamerate them here is not necessary, as accurate descriptions can be found in nearly every seedsman's catalogue. The tenderer kinds should be sown either in pans or boxes, and placed in gentle heat till they vegetate. When large enough they should be potted off or pricked out separately into frames; others less tender may be sown in cold frames at once, and in fine weather, when the soil is moderately dry, they may be sown in the open borders, simply placing a little fine soil over them, and as the plants appear above-ground they should be thinned to suitable distances, according to size and habit of growth.

HERBACEOUS PLANTS .- . As most of the plants are now making rapid growth, all fresh plantations should be completed as quickly as possible; some of the late kinds may yet be divided, but the sooner this work is finished the better. After planting they should receive water, and subsequently be well mulched with decayed manure or leaf-mould. Where the young shoots are very thick they are greatly improved by timely thinning, by which means not only are the blooms increased in size, but the plants are rendered less stiff and formal in outline. As the plants grow they should be kept tied, so as to prevent breakage by wind and storms. The surface between the plants should be loosened frequently, so as to clear away weeds, and at the same time secure a free passage to the roots for air and rain.

Gladioli, Persian Ranunculuses, Anemones, Tigridias, &c., may now be planted, for doing which a moderately day and mild day should be chosen; the ground also should, if possible, be in a rather dry con-dition, otherwise many of them may decay by suddenly absorbing too much wet. The most suitable soil for the first-named is a deep sandy loam, well enriched with thoroughly decayed manure. There is, perhaps, no plant more deserving of extensive cultivation, whether for summer or autumn decoration, than is this glorious flower. A flower garden without it is indeed shorn of one of its brighest gems. Whether planted in mixed borders either in groups or lines, it is very effective, but its real value is best seen when massed in distinct and separate colours. It can now be procured in these separate colours so cheaply that there no longer exists a reasonable excuse for not planting it largely. The Anemone, Ranunculus, and Tigridia also make very effective plants, whether mixed in the herbacenus borders or when planted in separate beds. The soil best suited to them is rich sandy loam; in planting a liberal dressing of sand should be given, and the soil should be pressed firmly round them during dry weather; when growing they should be occasionally watered, and when in bloom the Ranunculus should be shaded from bright sunshine. Bulbs now showing bloom should have their bloom-spikes carefully tied, otherwise the first heavy shower will break them off.

Roses.—These must now be pruned, as they have already made considerable growth. Many of the back buds, however, are still dormant, and if the shoots are cut back to these buds they will break freely, and although by leaving them nonpruned so long a portion of the strength is undoubtedly sacrificed, still it is better so than to lose all the buds, as if requently the case when early pruning is practised. Where grown as dwarfs, instead of pruning back so far, the ends only should be cut off; dead and useless shoots should then be taken out, and the remaining shoots pegged down. The young growths, as well as the buds, should also be thinned; these pegged Roses will then give earlier blooms, and equally as fine as those that are pruned back severely.

LAWN.—This will now require particular attention. To the labour devoted to it and upon its judicious management at this season depends, to a great extent, its after-beauty. All sticks and stones should be carefully removed, as should also Plantain and other coarse weeds, either by grubbing them up or by the application of vitriol. A mixture of the finest grass seeds should then be sown over it and a light dressing given of finely sifted wood-ashes, lime, or guano; the roller and mowing-machine should then be frequently employed to produce a firm and even surface. T. S. C.

The Pitchen Garden.

ASPARAGUS PLANTING .- The ground having been prepared as previously recommended, mark off the necessary number of beds 4 feet wide, with an alley 2 feet wide between each bed, then draw two drills about 4 inches deep at 9 inches from either side the centre of the bed space, and in these plant the roots, taking half of them in one hand and half in the other, with the crowns slightly raised, 18 inches apart in the row. Press the soil firmly about the roots with the hand; afterwards the plants should be tied to sticks, and the surface of the soil mulched with 'decayed manure, which will preserve the roots in a healthy growing state. For the supply of plants for forcing, plant in drills 15 inches apart, and the same distance from plant to plant in the row, and in such a way that those in the second row stand angle-wise to those in the first-this remark also applies to those in bedsas by so doing the plants have more room to grow than if planted opposite to each other. Those wishing to give the French system of growing Asparagus trial should open shallow trenches 5 feet wide, 9 inches deep, with 21 feet alleys between the trenches, and in these trenches make three rows of low hillocks, a couple of inches high and 3 feet apart, on which lay the roots of the plants, spreading them out equally in every direction, and then cover them with a few inches of soil, and subsequently with a little well decayed manure. In the meantime rows of Cauliflower or Cabbage can be planted between the trenches without in any way interfering with the growth of the Asparagus.

SEED SOWING, &c .- Sow the early crop of Beet (Pine-apple Short-top, when obtained true to name, is the best variety) in good open soil, in drills 15 inches apart. A sowing of French Beans should now be made out of doors in a warm border, in drills 2 feet asunder, where provision can be made for protecting them from late spring frosts. Slugs and grubs are often very destructive to freshly planted Cauliflower, Cabbage, and Lettuce plants, which should therefore be looked over every morning and evening with a view to destroying them, and filling up vacancies they may have made, which work must be attended to until the plants have established themselves, when they will be better able to resist the attacks of these pests. When the roots and stems of plants have been eaten away by the grub, the drooping leaves soon indicate the fact, and search should be made at the roots for the depredator before planting anew. To prevent the ravages of slugs on young seedling crops of Turnips, Cabbages, and small Lettuces, if the beds and drills are dusted over when the leaves are damp with a mixture of lime and new soot, it will not only effectually check the ravages of slugs, but, the application being persisted with when necessary, will entirely prevent their being interfered with by birds or the Turnip flea. Carrots and Turnips will require to be thinned-out to a couple of inches in the rows, and to be finally thinned-out a few weeks later, which, in case of mishap to the plants while young, will be the safer practice. Use the Dutch-hoe freely between the rows of young crops, as also between those of autumn-sown Onions, Spinach, Cauliflowers, Cabbages, and Broccoli, and in every place where weeds appear.

GLOBE ARTICHOKE.—Now that the plants have made sufficient growth to admit of offsets being taken to make good any vacancies that may have been occasioned during the winter, and also for making new plantations, it is a good plan to destroy a few rows of the oldest plants every year, and to plant an equal number of rows of young ones. These may be planted in clumps of three plants set triangularly, in rows of clumps 4 feet apart, and at the same distance from clump to clump. When planting, the soil should be made firm around each plant with the hands, after which they should be watered to settle the soil about the roots, and the ground between them should be afterwards mulched with a few inches thick of rotten dung. These plants will yield a good supply of Artichokes late in the autumn, and tong after those planted a year or two previously have ceased to bear. Any old mulch left on the surface from last year should now be forked in, the blanks, if any, having been previously filled. H. W. Ward, Longford Castle

The Bandy Hruit Garden.

THE MULBERRY is the latest of all our fruit trees to come into leaf, and does not generally put forth till the second week in May; therefore, if not pruned it may still be done, thinning out the branches where the tree is grown as a standard, which form is found to answer perfectly in southern localities. The tree is easily propagated by cuttings, but as it takes half a generation to make a good fruitful tree, it is the better plan to get them of a mature age from the nursery; as there is little or no difficulty in transplanting the trees. For the first year or two the ground around them may be cultivated, but directly the trees commence to bear it should be laid down in grass, as by so doing the falling fruit is saved from injury and kept clean.

STRAWBERRIES, —Pass the hoe once more through the plantation, to kill any weeds coming up. This is always advisable previous to mulching them down, which can be better dooe now than later on, and with less injury. For years we have used long litter from off the early Vine borders, the plan answering perfectly for the very early kinds on a south border which have run together in beds. We generally at this time spread the dung from old Mushroom beds over the ground, brushing it in with a broom; this provishes the plants and keeps the fruit clean.

over the ground, Dussing it in whith a profest, this noursiness the plants and keeps the fruit clean.

As fast as the fruit is cleared off plants in the forcing houses get them planted out in rows a yard apart and 18 inches apart in the rows, and be particular to reject all which proved unfertile; and as the plant has a tendency to raise itself from the ground deep planting is advisable when turned out of pots. The black slug is very partial to the Strawberry, and we know of no better plan than to keep a brood of young ducks in the kitchen garden for the destruction of these pests. Eggs hatched now will be in time for that purpose; the wild duck pintoned is best. We keep some in the garden, and hind them of great service.

FRUIT TRRES. — See that all the fruit tree stakes are sound, and that the espalier trees are securely fastened to their supports. In many localities grafting may still be done. In selecting scions for the purpose keep in view the late kinds as those that are very useful during the winter. Such kinds of Apples as Mère de Menage, Northern Greeniog, Winter Greeniog, Sturmer Pippin, Winter Queening (usually known in this county as Duck's-bill), are worth much more than the sorts ripe in October and November.

A bive or two of bees are most useful in the garden in helping to set the blossoms, therefore at once secure a stock and place them in a sheltered aspect—they will be a profitable investment. 9. Rust, Eridge Cattle, Sussex.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, April 8

Royal Horticultural Society: Meeting of Fruit and Floral Committees, at 11 A.M.; Sale of Orchids, its rothere & Morris' Sole of a Grand Collection of Orchids in Footbere & Morris' Thursday, April 19

Sale of a Grand Collection of Orchids in Flower, at Stevens Rooms of Flower, at Stevens Rooms of Flower, at Stevens Rooms, &c., at Prothero & Morris' Rooms. Sale of Imported Orchids, Stove and Greenhouse Flants, &c., at Stevens' Rooms of Flants, &c., at Stevens' Rooms.

WE are not in a position to report what the Daffodils conferred about, but at any rate we are constrained to say something as to DAFFODIL CONFERENCE, held in the Gardens of the Royal Horticultural Society on Tuesday last. This was, as it were, an extra meeting, not provided for in the ordinary programme, and in its inception and in the way it was carried out it was akin to the two evening meetings held last year. Like them, and like the Apple Congress, it may be chronicled as a success, and as a welcome indication of vitality in the Society, and of the interest taken in its proceedings by the general public. If it serve to obviate the formation of another special Society it will do good, as it certainly did in raising the tone of horticultural discussion. The ball was opened by a paper read by Mr. BURBIDGE, the historian and portrait painter of the genus. We give the substance of the paper in another column, and in order to add to the interest we reproduce several illustrations that we have given from time to time, and add some not hitherto published, from the pencil of Mr. FITCH.

The discussion was opened by Professor MICHAEL FOSTER, who set out with the condemnation of the common idea that "ignorance is the necessary setting of beauty." The remarks which followed from the various speakers were in keeping with this key-note, and may, indeed, be said to have covered wellingth the whole field of Daffodil fore from its legendary history to the discrimination of the various forms and the practical details relating to their culture. Our space will not allow us to give a verbatim report of what transpired, but we can at least give a general idea of the ground traversed.

Mr. Burbider's paper speaks for itself. We need only point to the practical suggestion which he, following Parkinson, threw out as to the classification, according as the leaves are flat or more or less cylindrical and Rush-like. These divisions are subordinated to the now generally adopted classification according to the relative length of the cup or corona—long, medium, or small, or, as it was wittily suggested by a visitor, long-nosed, short-nosed, and pugnosed Daffodils respectively.

Mr. SHIRLEY HIBEERD followed with a few remarks on classification, pointing out that "the weak points in Mr. Baker's classification are strong for the purpose of instruction." Mr. HIBEERD, mixing up Daffodils with Narcissus, proposes, instead of the twenty species recognised by Mr. Baker, to adopt five only as really distinct—the Basket Daffodils, represented by the Corbularia or Bulbocodium section; the Trumpet Daffodils, including the wild form of Pseudo-Narcissus and its allies; the Chalice Daffodils, comprising N. incomparabilis; the Cup Daffodils, represented by N. juncifolius, Tazetta, and Jonquilla; and, lastly, the Cymbal Daffodils, in which are included N. poeticus, N. serotinus, and others.

Mr. HIBBERD then proceeded to demolish his quiarry scheme by admitting that the distinctions between them are imaginary rather than real. It depends from what standpoint we look at the matter. If we go back to the original form, so far as we know it, of the Narcissus, we have no doubt Mr. HIBBERD is more correct in advocating consolidation than others are in supporting multiplicity of types. If, for instance, we consider the way in which the flowers of all

the Narcissi originate—a point overlooked by all the speakers—we shall find Mr. HIBBERD nearer the truth than the others who took part in the discussion.

If we go back to the very early form of the Daffodil—to the Daffodil in its baby state, when it is so young, and its parts so unformed, that none but a practised manipulator and accomplished botanist can hope to see them—though this stage, of course, is preceded by simpler ones still, to which we need not refer here—then we shall find, certainly in some, presumably in all, this state of affairs—six flower-segments without any corona at all, six stamens, and a three-parted ovary, which at this early period is not enclosed within the end of the flower-stalk. Then, as growth goes on, and the several parts become more distinctly mapped out, we find the ovary becoming gradually more and more embedded in the top of the flower-stalk, till at length it becomes completely sunk within it, producing the condition known as the

and in what manner they shall be defined. And in this matter we cannot, as it seems to us, do better than follow Mr. Baker, who has made a special study of the genus for this very purpose, and whose arrangement and definitions were published at length in these columns in 1869, and subsequently reproduced with numerous coloured illustrations by Mr. Bureidge in his book entitled, The Narcissus; its History and Culture.

Practically, Mr. ELWES, in his remarks on this subject, considers as species all those forms which are constant in a wild state in the countries where they grow; and this is as practical a test as we can find, though unfortunately it is, as Mr. ELWES himself admitted, a very insecure one, owing to the natural tendency to vary in all plants more or less, and particularly in those that are subject to cultivation. For it is a curious point, that those species which vary little are unsuited to cultivation, because, as we pointed out last week, not

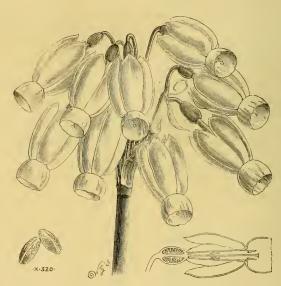


FIG. 87.—NARCISSUS TRIANDRUS VAR. PULCHELLUS. (SEE P. 442.)

inferior ovary and characteristic of the great order of Amaryllidaceæ, of which the group Narcissus forms but one genus.

The crown or cup which forms the most conspicuous feature of the adult flower, even in cases where it is small, is a late outgrowth from the tube of the flower, having little or no genetic importance, but of great physiological significance in relation to the fertilisation of the flower by insect agency. Structurally, then, the cup is of little moment, as it does not exist till a late period in the development of the flower, is not part and parcel of the typical flower, but is, as it were, an after-thought, a superadded outgrowth developed for a particular purpose. No matter, then, what may be the form that is ultimately assumed, we start from a six-parted flower of a regular type, like a Squill, and all Daffodils, all Narcissi, all Corbularias, Ajaxes, Telamonius, and all the rest of them, start in like manner and with this very simple structure. So far, then, Mr. HIBBERD is right. But, for purposes of practical convenience and discrimination we are compelled to adopt subdivisions, and the practical point is to settle how many there shall be

having the power to vary and accommodate themselves to circumstances, they prove rebelious in the cultivator's hands, and die out; while, on the other hand, those endowed with greater powers of adaptation are cultivated with readiness, and vary very widely. Rightly to judge, then, of the value of a species, properly to estimate its limitations, and effectually to circumscribe it for purposes of practical description, the aid of the cultivator must be combined with the observation and tact of the botanist, and the Conference will bave done some good if only it brings home to people's minds this important point, upon which we have been continually insisting since the Gardeners' Chronicle was established forty years ago and more — viz., the necessity for co-operation between the botanist and the cultivator.

Before passing from the subject of classification we must not omit to allude to the clever, energetic speech of Mr. BAKER, who took the point of view of the practical rather than of the speculative botanist, and insisted on the necessity of clear ideas as to the species, which he termed the unit, of the groups of species forming genera, tribes, and orders, in ascending series, and of the races, sub-species, and varieties in descending series, and which, instead of being groups of species or units, are fractions of that unit. Mr. Baker drove his conclusions home by the familiar illustration of the decimal point and the different value to be attached to figures according as the decimal point is placed to the left or to the right of them. All to the left of the decimal point are species or aggregate groups of species, of greater or less value the further you go to the left; all to the right of the point are fractions of species, smaller

of editorial eyes. There is a recognised code and order of precedence known to and acted on by botanists, laid down in books, discussed and re-discussed at congresses and societies, and which has been over and over again treated of at the Royal Horticultural Society and in the pages of the horticultural journals. If the Conference should have the happy result of enforcing uniformity in this matter, much future confusion may be saved, but we own we are not very sanguine.

Closely allied to this question is that of nomenclature, We all know the terrible state

adopted by florists, and not in the manner adopted by botahists."

A supplementary meeting was held on Wednesday to put this resolution into effect, the opportunity of so doing being exceptionally favourable. With the potent aid of Mr. Bakera a list of all the known names, garden and otherwise, of Narcissi, classified according to their botanical position, was framed and discussed at the adjourned meeting, and will shortly be made public. The principal novel feature of this list is the relegation of all the known or supposed hybrid or cross-fertilised forms in a



in proportion as they extend further to the right. Oh! that gardeners would but learn their botanic numeration-table, and act upon it; but they don't, and even after Mr. BAKER'S energetic protest, we heard subsequent speakers mixing up genera, species, families, and the like, with utter disregard of their real meaning. What would be said of one who in ordinary converse mixed up indiscriminately continents, countries, provinces, counties, cities, villages, parishes? And yet that is just what most people do when they talk of plants or animals, and if in the printed page this confusion is not always so apparent the reason must be sought for in the watchfulness

of garden nomenclature—some of us, at least, are familiar with the efforts that have been made to reform it. The course to be adopted is clear enough, it has been codified and recommended repeatedly, but in practice who but professed botanists stick to it? We cannot now afford space—and it ought surely to be unnecessary for us to do so—to explain the simple Linnean code and its method of application; it must suffice now for us to note one practical outcome of the Conference, in the shape of the following resolution:—

"That in the opinion of this Conference garden varieties of Narcissus, whether known hybrids or natural seedlings, should he named or numbered in the manner class by themselves. At present the register takes this shape, subject of course to final revision:—

	Genuine species.	Hybrids of orimany rank
Magnicoronatæ (True Daffodils, ¿	2	۰
Mediocoronatæ (medium cups)	5	6
Parvicoronatæ (small cups)	6	3
	13	9

Of the thirteen, five are practically out of court as garden plants, while, as we have said, in this enumeration no note is taken of the very numerous cross-bred mongrels, which will be dealt with in the revised list under a special heading.

Whether this scheme will be adhered to is another matter, and one we think, with our not inconsiderable experience, extremely doubtful, for others will do—as Mr. BARR confessed he did—what they think right in their own eyes. It is only fair to Mr. BARR—to whom the warmest thanks of Daffodil lovers were very properly tendered—to say that he does not adopt this course till he has consulted other authorities, and, finding them vain, has been compelled to act on his own judgment.

Mr. BARR, indeed, effectively replied to the attack made upon him as to this point by reminding the audience that when he substituted the vernacular for the classical he was abused by one set of folk, while he was vilified by the other when he adopted the converse process. However, the feeling of the meeting was entirely and unanimously in favour of giving vernacular names to what we may for brevity sake call garden varieties. This practice was recommended also by M. KRELAGE, the eminent Dutch horticulturist, who advocated it in an English speech of remarkable force and fluency. Practical man as he is, he further insisted on the necessity for having these names short. He pointed out that the trained eve of the cultivator sees distinctions which elude the vision of the ordinary botanists, and he claimed the right to give such varieties distinct names -garden names, that is; for, said he, if the distinctions prove insufficient, and the variety is worthless, it will surely disappear, while if it prove distinct and good every one will be pleased, And this is good sense, only we need not cumber botanical catalogues with such names, but confine them to the trade lists of the nurserymen. An excellent start in this direction was made on Wednesday, when the whole of the flowers exhibited were renamed in accordance with these principles. The only objection we see to the employment of vernacular names for garden varieties is the difficulty arising from the Babel of nationalities. Dutch, Flemish, Russian, Hungarian nurserymen, on Mr. KRELAGE'S plan, have the right to name their productions, but who will tell us Anglo-Saxons how to write them, or how to pronounce them ?- and how are we, in our turn, to render our Smiths and Llewellyns intelligible and pronounceable by those of other nationalities? A Latin epithet, if not too long, is from this point of view better for all

The other principal points in the discussion related to the mode of doubling of these flowers, to the discovery by Mr. BROCKBANK of seedcapsules of the large double form of Pseudo-Narcissus, to the geographical distribution of the species (a point on which Mr. ELWES brought out some highly interesting and valuable facts), to the mode of culture of certain cannot treat these matters as their importance species and varieties, and to the possible future of the Daffodils. It is obvious that we deserves in one article. We purpose, therefore, reverting to some of them on another occasion. reverting to some of them on another occasion. In the meantime we may safely venture to say that no more useful discussion, nor one of wider general interest, has been held at the Royal Horticultural Society; for if it be said, as it may by cut bono people, that the absolute value of a discussion on Daffodils is slight, we may remind those not over-intelligent folk that the great principles discussed apropos of things of such relatively small economic importance as Daffodils are just the same as those which should regulate the culture, discrimination, and nomenclature, not only of food plants, but of all those which serve in any way to contribute to the welfare of mankind.

— KALANCHOE FARINACEA,—One of Dr. BAY-LEY BALFOUR's discoveries in Socotra, and figured in tab. 1143 of the Gartenflora (1884). It is a succulent plant, about 10 inches in height, with opposite

spoon-shaped fleshy grey leaves and a terminal muchbranched cyme, the slender ultimate branches of which, about three-quarters of an inch in length, bear cylindrical scarlet-red flowers, divided at the border into five shallow ovate acute segments.

PRESENTATION TO MR. J. II, KRELAGE, OF HAARLEM.—The Haardem Society of Wholesale Builb Growers and Florists presented their President, Mr. J. II, KRELAGE, at a recent meeting, at which every firm connected with the Society was represented, with a magnificent centre-piece of silver and glass, bearing a suitable inscription. This testimonial was presented to Mr. KRELAGE in recognition of his efforts to secure the introduction of bulbous plants into Germany, and to promote the action of the Dutch Government in giving its adhesion to the Berne Phylloxera Convention. By these means the Dutch horticultural trade with Germany and other countries most seriously threatened has again been rendered possible.

- ANEMONES .- It is so much the fashion to refer to the large and very beautiful single Poppy Anemones as French, thus leading to the impression that the strain is entirely of French growth. It is true that large quantities of French flowers are sent over here and exhibited, but it is equally true that quite as fine flowers can be, and are, produced in this country, not from any particular Continental strain, but from such as some of our own growers have had in this country for years, and during that time have been carefully improving by selection. At the Bedfoot Seed-grounds a quantity of these very beautiful single Anemones has been in bloom for a long time, and recent sunny weather has brought up a display of flowers that are glorious to behold-so large, finely formed, and richly coloured are they. A curious impression prevails, that none of the Anemones of the coronaria section can equal the rich colouring of the fulgens; but that is a mistake. The truly superb scarlets and crimsons in the Poppy Anemones are beyond compare, and excite the warmest admiration. Whilst very rich in these glowing hues, purples, and almost blues, are, too, in great force, and exceedingly beautiful. Then the whites also are not less lovely; and between these decided hues come a score of others, and not a few blotched and striped flowers, the markings of which beggar description. Truly we can grow glorious Anemones in this country if we will, and it is to be deplored that so much apathy towards one of the grandest of early hardy flowers should result in seeing literally thousands of gardens without one within its borders. Raised from seed sown now, or even later, either in the open ground or in pans, and the seedlings presently dibbled out, the securing of a large stock of plants is simple enough.

- BERBERIS DARWINI. - What a beautiful shrub this is, and how much it would be missed were it to disappear from British gardens. Scarce a better plant could have been selected to bear the name of its discoverer, the most celebrated naturalist of recent times. If Messrs. VEITCH, who introduced the species (through their collector, THOMAS LOBE) from South Chili, had done nothing else towards beautifying our gardens, the introduction of this single species would be enough to earn them the gratitude of the gardening world, in England at any rate. It is somewhat surprising that a plant so widely grown should show so little tendency to sport into distinct varieties. Comparatively little has apparently been done by the hybridiser, and yet the result in one instance has been such that further efforts in this direction might have been expected. B. stenophylla, the result of a cross between the tiny B. empetrifolia and the larger vigorous growing B. Darwini, is certainly a very handsome garden plant, indeed it would be difficult to decide whether it or B. Darwini itself was the most beautiful.

SCHLUMBERGERA LINDENI, E. Morren,—
This is the Massangea Lindeni of ANDRE, in Illustration Horticole, April, 1879. It is a Peruvian Bromeliad,
with arching oblong strap-shaped channelled leaves,
of a greenish-yellow ground colour, marked with fine
transverse sinuous purplish lines approximate at the
base, arranged in bands separated by green intervals
towards the upper end; flowers clustered in the axis
of bracts, the clusters arranged along the sides of
elongated spikes,—Belgique Horticole, tt. x.—xi.
1882

CLIANTHUS PUNICEUS.—In the Isle of Wight, and in some other favoured spots in the British Isles, in the New Zealand "Flower of Glory" flourishes in the open air, and even in gardens round London where the roots are protected—say, by overhanging caves—against superfluous moisture during the winter months, it often braves the English winter, and produces a profusion of its handsome flowers and produces a profusion of its handsome flowers during spring and early summer. As a rafter plant for a cool conservatory there scarcely exists a more desirable plant. It seems somewhat strange that this species, which was discovered by Sir Joseph Banns in the interior of the northern island of New Zealand in 1769, and which is commonly cultivated round the houses of the natives, should never yet have been found truly wild either in that or in any other country.

- PANSIES IN BEDS .- It is surprising bow rapidly plants of Pansies that were put out in beds in autumn are putting up their flowers. open warm and sunny weather has greatly helped them, and, should it last a few days longer, the beds will be aglow with beautiful flowers. It is in early spring that the grower gets the fine yellow and white ground varieties in superb condition if only he culti-vates with care. The beds need now to be gone over, the surface - soil carefully loosened to the depth of I inch or so, and broken up finely, and especially round the plants, then a top-dressing applied of rich soil to the depth of 2 inches, placing it well about the necks of the plants. Then when rains come this will be carried down to the plants, and greatly assist their development, and the leading shoots should be pegged into position, fixing them securely. Without this, where sweeping March winds blow they are in great danger of being broken off or otherwise damaged. A few sprigs of Spruce Fir placed about the bed on the north and east sides will do wonders in affording shelter for the plants when the biting winds come; or effective protection may be provided in other ways, such as placing a low fence of tiffany, &c., around the bed. Any seedlings kept through the winter in cold frames or in store boxes should be planted out, giving them some light sandy soil to root into quickly, and pressing the plants firmly into the ground, securing them against wind at the same time if the position of the beds be at all exposed. It is decidedly best to keep the seedling-bed of the show varieties distinct from the fancy kinds, especially if it is desired to save seed. The disadvantage of growing both classes together is seen in the fact that many seedlings are intermediate between the two, and neither altogether one or the other, and there is a fear that the fine yellow grounds and white grounds with their rich margins are being less cared for than they should be. The bold and fantastic fancy varieties prove very attractive, and there is this point in their favour— that they will endure when the less vigorous show varieties fade away and perish.

—— BEGONIA LUBBERSI.—This is a Brazilian species, described in the Belgique Horticole, t. xiii., 1853. It is an undershrub, with peltate, lanceolate leaves, very oblique at the base, dark green above, mottled with white, the under-surface wine-red. The flowers are in loose panicles, white, each 2—3 inches across, the sepals of the male flowers broadly ovate acute, the petals linear-oblong, much smaller, stamens in tufts; in the female flower are five oblong petals.

--- FRUIT BLOOM,-- Happily after a week of heavy sky and easterly wind a change to brighter weather and softer air came in good time to relieve gardeners of anxiety with respect to the prospects of the bloom on wall trees, early Pears and Plums, and also the bloom itself from the ill-effects of that continuous low temperature, the which, if not so far accompanied by frost, at least was calculated, if much looger endured, to produce infertility. Whilst those timorous gardeners who dreaded frost were somewhat aggravating the evil by covering up the trees, others more confident found it wise to give their trees all possible light and air, so that any slight helps to fertilisation might not be hindered. So far Apricots seem to have set in great abundance, and there will be ample occupation for nimble fingers in thinning should all continue to go well. Peaches and Nectarines, too, are setting fast, the bloom showing size and endurance that is characteristic of healthy fertility. There will be little room this season, if no severer weather comes than we have yet encountered,

to hoast of crops saved by this form of protection or of that. Perhaps we shall by-and-bye have to chronicle of wall fruit, that the present year has been marked by one of the best crops known for many That we have so far had a wonderful season cannot be denied, but still some of our hopeful prospects are due to the beautiful ripening season which preceded the winter and created for us blooming wood and buds in an unwonted degree; indeed, a feature not common, but seen now largely, is the abundance of good healthy bloombuds both on Plums and Pears on the yearling growth, and in some cases the same thing may be seen on Apple trees, though with some kinds we know termical buds on young wood are the chief fruit producers. Another noteworthy feature is the large amount of prospective bloom on Apples in spite of the remarkable heavy crop of last year. On bushes the promise of bloom is of the best, and altogether indications are abundant that only bad weather can prevent the production of a wondrous fruit crop.

- CRANSTON'S NURSERY SICK FUND .- We are pleased to hear that the sick fund established last year by the employes of the Cranston Nursery Com-Hereford, has proved a great success. learn from the balance-sheet before us that the receipts from all sources were £40 12s, 10d. Of this sum £15 14s. 7d. were paid to sick members, £2 13s. were refunded to members on leaving the nursery, and 12s. 9d. were spent in expenses, leaving a balance in hand of £21 12s, 6d. For the information of employes in other establishments who may be inclined to organise a fund of a similar character, and who may be glad to have details, we may state that at the annual meeting, held on March 20, it was resolved, on the recommendation of the committee, having regard to the substantial balance in hand, to increase the weekly allowance from 5s. to 8s. for men, and from 2s. 6d. to 4s. for boys, for the first six weeks of their illness, and half that amount for the next six weeks should their illness extend over so long a period. In case of death the allowance is to be increased from £1 to £2 10s., the contributions to remain as before, viz., 2d. per week for those who are in receipt of Ios. and upwards per week, and 1d. for those receiving less than 10s, per week. These contributions are deducted in advance once to every three weeks out of the employes' wages, and to this arrangement all readily agree. After placing £7 10s. 71d. to the reserve fund a bonus was declared amounting to onehalf the amount of the contributions.

- FRUIT PROSPECTS IN THE MIDLAND DIS-TRICTS .- Should the spring prove favourable to the setting of the blossom, there is at present every prospect of an excellent fruit season. Apricots are flowering most abundantly, with a freedom not observed for years past. Peaches and Nectarines are following suit, and should injurious frost not occur, there should be a rare crop of wall fruit. Plums on walls and in the open are blooming most abundantly, and this seems general all over the country, and especially round London. Morello Cherries are full of bloom-buds, and other Cherries promise to be prolific of blossom also. All the Pears are flowering with remarkable freedom; trees are seen full of clusters of buds, and soon the landscape will be exceedingly gay with blossom. The Apples are full of blossom. In the case of a kitchen garden where there is a very extensive collection of bush trees as well as extensive orchards the branches are laden with flower-buds. Whether this luxuriant bloom is characteristic generally of the country remains to be seen. In regard to bush fruits it is too early to speak at present, but old gardeners say there will be heavy crops of fruit if the season prove favourable.

— THE NATIONAL ROSE SHOW: SALISBURY MEETING.—We are informed that it has been decided by the committee to give, in addition to the money prizes, two Silver Cups, value £5 each, in the premier nurserymen's and amateurs' classes. Liberal prizes are also oftered to local exhibitors residing within a radius of 10 miles of the city, as well as to others who reside outside of this and within 25 miles.

WREATHS,—There is no diminution in the number of wreaths, crosses, and other floral devices employed in funeral decorations, and the fashion rather grows than contracts. With this growth also may now be seen a tendency to break away from

the use of flowers that are white in colour or nearly so. Of course, as with the marriage rites, so with those of the grave side, those flowers which, from their snowy whiteness, are esteemed emblematic of purity and sweetness, will ever also be most largely in request. Still, flowers in season, such as Violets, Primroses, Daffodils, Camellias, and many others, give diverse and not unsuitable hues, and specially they help to give life and colour to the monotony consequent upon the very abundant use of pale blossoms. It is perhaps strange that, having regard to the common use of wreaths and other simple designs in flowers, holders of a kind that might facilitate construction, and also help to preserve the flowers, have not been introduced. Those made of zinc or tin, and painted externally, might somewhat resemble narrow troughs, the stems of the flowers and other dressing being fixed in these troughs with the aid of damp moss; there should be holes on either side, through which fine wire, or pins, or twine, could be run, and thus simply but effectively help the uninitiated to produce floral designs far more pleasing than is commonly seen. Perhaps the loading of coffins with a pile of floral mementos of love or good feeling is hardly in keeping with the solemnity associated with funeral obsequies. Any mere dis-play on such occasions is sadly out of keeping with the circumstances. It is true the flower growers profit by this fashion, but the burlesque of a beautiful custom may soon lead to its extinction.

we have received a few flowers of Gold-laced Polyanthuses, a very good strain of border flowers which seems to improve in quality year by year. In many of the blooms before us the lacing is pure and well defined, the hody colours, black and red, solid and good, and the centres very bright.

- SINGLE-FLOWERED CAMELLIAS AT KEW. -It is probably in but very few gardens that any of the single or semi-double Camellias are now grown. That they are highly ornamental plants—and, in the opinion of some ardent flower lovers, superior in beauty and general attractiveness to the more popular but more formal double forms-is incontestable. Some fine bushes planted-out in the beds in the Winter Garden at Kew, are now extremely handsome "I wonder what people want with double Camellias," was the remark of a practical horticulturist and a grower of Camellias into the bargain, on seeing the bushes just mentioned some time ago. long account of the early history and introduction of these almost forgotten varieties is given in vol. vii. of the Transactions of the Horticultural Society.

--- ANDROMEDA FLORIBUNDA.-There are not a few subjects coming under the denomination of common plants of great usefulness that, owing to some reason or the other, are not nearly so widely grown as they deserve to be. One of these is Audromeda floribunda. Quite large plantations of it can be seen io Messrs. VEITCH & SON'S Combe Wood Nursery, lying in the hollow formed by a portion of the nursery, and flowering abundantly-nice little bushes covered with panicles of white flowers. In growth it forms a dense leafy bush, spreading laterally more than upwards; and it is attractive at once in its flowers, its foliage, and its habit of growth. It may with truth be said to succeed best in a peaty soil, but it is not fastidious in this respect, and will do well in a fibry loam mixed with leaf-mould. In how many of the villa gardens that are daily being laid out round London will you find Andromeda floribunda planted? In but few, unfortunately; and really it would appear as if the refuse of nurseries was quite good enough for such places. This Andromeda is now regarded as being perfectly hardy, but in exposed places it is best to afford it any shelter in the way of buildings, other shrubs, &c., that can be made available for the

—— SENECIOS.—There is no doubt but that seedsmen would be found bearing an almost unanimous testimony to the fact that the Jacobeas that were warmly welcomed in gardens many years ago are in but little demand. More's the pity, for they are very pretty and aseful. They were unfortunately overborne by the bedding-out epidemic, and with many other good and useful things they had to retire into obscurity. Some have already come to the fore once more, and others are in course of doing so. The varieties

grouped under the head of S. elegans are of various shades, all double-flowered, and growing to a height of 15 inches or so, and they can be so easily raised from seeds, all that is required being that they be sown early in a moderate heat, and grown on liberally with care, hardened off, and bedded out in the proper time. Small beds of one colour, or beds of mixed colours, are equally attractive, and they might be made a groundwork for some taller plant rising above them. Some old gardeners used to grow specimens in pots for the decoration of their greenhouse, and make very nice examples of them. There is now a dwarf section, several inches shorter than the common type, that are better adapted for small beds than the taller varieties. But both have their uses, and are well worthy of a place in the garden.

- Pyrus sinensis .- Although it cannot claim to be in any way of value from a strictly utilitarian standpoint, the Sand Pear is certainly an ornamental tree, worthy of more general cultivation than is at present accorded to it. The rich bronzy-red of the young shoots and leaves in spring render this conspicuous amongst all the other members of the genus. A tree of P. sinensis is now in flower in the Kew Arboretum; indeed, it is the first of all the species to Following closely upon it comes open its blossoms. the narrow silky white-leaved P. salicifolia, a neat habited and small tree, which is thoroughly at home in the ordinary shrubbery. An illustration of the fruits and foliage of P. sinensis, drawn from specimens sent us from the Isleworth nurseries of Messrs. C. LEE & SON, appeared in our columns for 1875, vol. iv., p. 457.

- THE WEATHER,-General remarks on the temperature, rainfall, and duration of bright sunshine, for agricultural and sanitary purposes, during the week ending March 31, issued by the Meteorological Office, 116, Victoria Street, London, S.W.: -The weather has been very cloudy or dull in nearly all parts of the kingdom. Very little rain has, however, fallen over Scotland and the greater part of England, but in Ireland and the south-west of England some rather heavy falls of rain or sleet occurred towards the end of the period. The temperature has been below the mean in all districts except "Scotland, N.," the deficit ranging from 2° to 4°. The maxima, which were recorded on the 25th in Ireland and Scotland, and on the 31st at most of the English stations, varied from 50° in "England, N.E.," to 55° in "Scotland E.," and "England, E." The minima, which were registered on different days in the various parts of the country, ran from 26° in "England, E.," and 27° in "England, N.W.," to 32° in "England, S.W.," and 38° in the "Channel Islands." The rainfall has been slightly in excess of or about equal to the mean in Ireland and the south-west or Engenon, elsewhere, Bright sunshine shows an increase in duration in "Scotland, N.," but a considerable decrease in all other places. The percentages ranged from 7 in Ireland and the south-west of England, but less in all other places. The percentages raoged from 7 in "England, N.W.," and 9 in "England, N.E.," and "England, S.," to 31 in the "Channel Islands," and 35 in "Scotland, N." Depressions observed.— During nearly the whole of this period an area of high pressure has existed over Scandinavia, the North Sea, and the more northern parts of our islands, while the barometer has been relatively low in the south and south-west. Light or moderate breezes from between south-east and north-east, have consequently been general over England and Ireland, and southerly breezes the north of Scotland. Towards the close of the week, however, a depression appeared off our western coasts, the high pressure area at the same time receding north-eastward, so that the wind in our islands shifted to the southward and increased considerably in force. At some of our extreme western and northern stations a slight gale was experienced.

— GARDENING APPOINTMENTS. — Mr. II. MARKHAM, for the last three years Foreman in Longford Castle Gardens, Salisbury, as Gardener to Viscount FALMOUTH, Mereworth Castle, Maidstone, in succession to Mr. EVANS, who leaves to manage Sir HERNY HAWLEY'S gardens at Leybourne Grange, near Maidstone.—Mr. JOHN WYKE, formerly Gardener to J. P. KIDSTON, Esq., Barnet, as Gardener to Captain ALCOCK, Henby Grove, Westbury-on-Trym, Bristol.—Mr. J. ANNING, for upwards of five years Fruit Foreman at The Poles, Ware, as Gardener to W. S. BROWY, Esq., Digswell, Welwyn.

PARADE BEDS OF HYACINTHS.

In his Florists' Directory (1792) John Maddock begins his introduction with the following words:— "The finer flowers more particularly demanding our attention are the Hyacinth, the Tulip, the Ranunculus, the Anemone, the Auricula, the Carnation, the Pink, and the Polyaothus." This was the general opinion of the florists of the former century; so, for example, George Voorhelm, in his Treatise on the Hyacinth (the English edition was published in 1753), names as the favourites of the day the Hyacinth, the Tulip, the Auricula, the Carnation, the Ranunculus, and the Anemone. In the course of time many other flowers have become favourites for a shorter or longer period; some of the old flowers have been temporarily neglected, but with all these variations of taste the bulb growers of Haarlem and its vicinity have kept in honour the oldfashioned flowers, and yet at this moment their register is, at least partially, the same as it was in Voorhelm and Maddock's time, a century ago and hefore. Maddock's time, a century ago and before. At that time they say—"The fine flowers more par-ticularly demanding our attention are the Hyacinth and the Tulip." The fact that these flowers, being among the oldest introduced into European flower gardens, are always in fashion, and that their culture on an extensive scale is possible, gives the best proof how, by the exertions of the Dutch growers, these plants have been perpetuated in the lapse of time, so that in spite of the crowning of so many other new fine and elegant florists' flowers which have been introduced and cultivated since, they still form objects of interest and trade.

Although the way to treat these plants has taken in many instances a different direction from that which used to be the case in the eighteenth century, there are some good things which, temporarily neglected, are again found acceptable. return to what our forefathers have admired, so it has been the case with the parade beds of Hyacinths, of which we subjoin a figure (fig. 89). We find them already described by Maddock, and previously by George Voorhelm and the Marquis de Saint Simon, in 1768. They were at that time more moderately arranged than at present, but the general system was the same as now-a-days. In Holland such parade beds were popular, and in the first part of the present century they were found in every first-rate nursery at Haarlem. The last firm who used to plant them annually was that of Messrs. Krelage, who used to do so perhaps twenty years ago. Then the spring shows in Holland, where large collections of Hyacinths were required, gave another direction to the taste, and caused the temporary abandonment of parade heds. Five years ago some bulb growers combined to again arrange such a parade bed, and Mr. Krelage at the same time opened his heds at the Kleine Houtrey. This was in 1880, and since that time the parade beds have been planted and admired every year.

They are covered when in bloom by a large tent, which is in the middle about 14 feet high, at the sides 8 feet, and at the ground 32 feet wide. The length of the tent is 82 feet, that of the entrance pavilion 14 feet — together 96 feet. The length of the beds wherein the Hyacinths are planted in October is 50 feet; they are 4 feet broad, and about 6 inches above the level of the ground. Wooden frames are placed round the beds, I foot high, which can be made higher if necessary by a second frame of 5 inches high. The back part of these frames remains to give a good background for the examination of the Hyacinths. When the beds are in bloom the covering of the tent is rolled up during the night, and then the frames are put around the beds, and covered with mats.

In each bed there are planted 102 rows of Hyacinths, six bulbs in each row, in the former bed planted only with single blooming sorts of the medium season. In every row only one variety is planted, and the arrangement is such that, when in flower, the back rows show above the front ones, and that the whole bed forms a regular curved line, of which the highest point is in the middle. The succession of colour in the arrangement is red, white, and blue, but among the reds are found all gradations of that colour, as well as the shades of violet, mauve, and purple. With the whites are found the rosy-whites, yellows, and orange; and with the hlues all the shades of that colour, from the lightest lilac to the darkest black. It is quite obvious that this row-bed,

as it ought to be called, by translating the Dutch term, makes a splendid effect, and is the admiration of every visitor, especially as the plants are carefully arranged so as to flower all at the same time.

The other bed, which may be called the dressed bed—again using the expression popular in Holland—is more the delight of the true connisteur. Here the same number of bulbs is planted, but in pairs of the same variety, one next to the other, so that in the two neighbouring rows there are twelve plants in six varieties. Also here the same succession of colours is observed as in the other bed; but, by a different arrangement, the double lines of red, white, and blue, show themselves in a sloping direction, as is well represented in the figure. In this bed are planted the later single varieties as well as the best double ones. This bed is equally interesting, because here are to be found, besides many novelties of the establishment anot yet in the trade, all those new sorts which have been lately introduced for the first time, and others for trial, as far as it can be expected that they will do honour to the collections.

As in general no variety is planted twice in the beds, and the row bed containing all varieties different from those in the other, visitors can see in these heds at once about 400 of the hest varieties known, among them many at present not in general cultivation have such merits as will ensure them becoming favourites in future times. It is an extended field for study for the large number of Hyacinth growers of the neighbourhood of Haarlem, who, as well as the amateurs of fine flowers in general, visit regularly this flower show at the time it is opened, which is for foreigners every day from 10 to 12 o'clock in the forenoon, and from 2 to 4 o'clock in the afternoon, year the show, which is usually somewhat later than the general flowering in the open fields, will be opened during the whole month of April, and the best period for visiting it will probably be between April 6 and 20. For those who visit Holland this month it will be well worth while to pay a visit to these beds. A catalogue is published and obtainable by the visitors, giving the names of the Hyacinths planted in the beds, with the numbers, so as easily to find that of every variety. Such parade heds of Hyacinths are to be found in no other establishment, and the whole arrangement is more splendid than has been seen before under similar circumstances.



QUERCUS ILEX SERRATUS AND Q. I. AUSTRIACA SEMPERVIRENS.—These two beautiful varieties of a favourite tree, and one that does very well in the London district, look in beautiful health and vigour at Messrs. C. Lee's nursery at Isleworth. In the strong loam there the Q. Ilex seems quite at home, as they used to be at a distance yet nearer to town, at Messrs. Osborne's, at Fulham, the many trees once to be found there existing no longer. Both the abovenamed varieties have much larger foliage than the commoner Q. Ilex, but which, being hard and of considerable substance, remains uninjured by severe winds. Q. austriaca sempervirens possesses foliage of a very pleasing shade of green, and is rather the handsomer plant. M.

GREY-FOLIAGED SHRUBS AND TREES.—In the article on these (p. 411), the, to my mind, best of all silvery-greys has been omitted, Salix sericea, naturally grown, is a prostrate shrub; grafted on a stem it forms a distinct, irregular head. The medium-sized leaves are quite silvery. It comes into leaf early, and remains late in beauty. Planted in special positions—in rockwork, for instance—it is singularly beautiful, and associated with ordinary evergreen and other trees and shrubs, effects are produced which are quite unique. Pyrus salicifolia is also a first-rate silvery-grey-leaved small tree, much whiter than either of the subjects mentioned in the article in question, and is, moreover, when grafted high, one of the most graceful and distinct of weeping trees. T. Smith, Neury.

Home Correspondence.

Rhubarbs.—Following up your admirable summary of the Rhubarbs and their classification as growing now at Chiswick, I would like leave to take growing now at Uniswick, I would like leave to take exception to the appellation Johnston's St. Martin's being added to that of Linnæus, inasmuch as the latter, and doubtless the only correct name, was given to this Rhubarb I hardly know how many years since. I admit it is due to the firm whose name is associated with the St. Martin's that no stock seems to have gone to Chiswick from them, and if they feel aggreeved they have it in their power to remedy the error. If the St. Martin's Rhubarb really is distinct error. If the St. Martin's Rhubarb really is distinct from Linnaus we cannot know it too soon. There is another Rhubarb that has a reputation, but still has another Rhubarb that has a Paragon. It would not got to Chiswick-I mean Paragon. It would have added much interest to the collection shown at South Kensington the other day could that kind have been included. The very peculiar colouring of the Albert noted in the hollow sides of the stems should always mark that kind where any doubt exists, whilst anways mark that kind where any doubt exists, whilst the red hue of the back of the stems runs over and colours the edges of the inside; the hollow is of a beautiful clear pale green, very distinctly defined; the stems in each case in this kind were of even and moderate length, and of even size. In the stems of Linnaus, whilst the inner sides were less hollow, the Linnaeus, whilst the inner sides were less hollow, the colouring was more confused and irregular, and there was just a slight increase in length and diameter over those of the Albert. In other respects it was not a specially attractive form. Certainly of the dozen assumed kinds shown all were too exactly alike to admit of any doubt. But if in colouring Hawke's Champagne was a great beat upon either of the preceding kinds, so also was it materially longer than the stems of the Albert, so that the claim of the latter to be regarded as the explicit seems division. the stems of the Albert, so that the claim of the latter to be regarded as the earliest seems dubious, Still further, the peculiar characteristic of the Champagne is that the insides of the stems are not hollow in any sense, hut are distinctly flat, so that, given sticks of even size, that of the Champagne must weigh much heavier than that of any kind in which the stems are grooved or hollow. Judging by the samples staged at Kensington it did seem strange that Baldney's Scarlet Defiance (Osborn) should not have received the same award which fell to Hawke's Champagne (Bunyard), inasmuch as the Defiance was even deeper in colour than the latter, and apparently in even deeper in colour than the latter, and apparently in all other respects as handsome and good. Of course, there may be points in growth not known to the public, but only to the Fruit Committee; still, if I wanted a deep rich-coloured Rhubarb, I should prefer Defiance to others. Crimson Perfection (Carter) came near to Defiance, but lacked size; I observed, how-ever, one characteristic of the leaves of this kind that ever, one characteristic of the leaves of this kind that was seen only besides in those of Buck's Early Red—that they were somewhat glaucous, or presented a whitish of rosted appearance. That peculiarity may have been due to the youth of the leaves, or it may be due to sort. If the latter, then I think the two kinds named must be identical. In the case of the colouring matter in the stems of Scarlet Defance, I noted that it ran more densely into the ribs of the leaves than was seen in any other kind. Those fine leaves than was seen in any other kind. Those fine leaves than was seen in its useful condition beau. leaves than was seen in any other kind. Those fine late kinds, Victoria, in its useful condition beamtiful in the richness of its colouring, and Stott's Monarch, were too late to admit of useful comparison. Perhaps Mr. Barron will give us another Rhubarb exhibition later on, and it would be not less interesting were true samples of Johnston's St. Martin's—if those at Chiswick be not the real Simon Pure—to be sent up also by the raiser, and also samples of Paragon, and, indeed, of any assumed distinct kinds. There are many locally named kinds of Rhubarb about the country, samples of which it would be interesting to see also. A. D.

Rhubarb Paragon.—Mr. J. E. Ewing, comparing the earliness of different varieties of Rhubarb at p. 372, says that Paragon and Stott's Monarch were only one year planted, and all the others two years; this accounts for the lateness of Paragon with him. I planted a plot of it last year, and it is only now (March 27) just ready to pull, whilst from old-established plants I have been pulling in quantity for some time. The one-year planted is quite a fortnight later. I send a few sticks of Paragon pulled from a 3-acre field in a cold bigh situation without the slightest protection or even a hedge to shelter it, and here in this cold part of Yorkshire everything is much later than in the South. Charles Kershaw, Slead Syke Nurseries, Brighouse. [No exception can be taken to the specimens received, which were as large as any naturally grown Rhubarbs in the market. Ed.]

Spawning Mushroom Beds, — When this is done some gardeners let the workman make holes in the Mushroom bed with a dibber or a pointed stick. This is a very faulty way of doing a simple act, and is frequently answerable for poor crops, or none at all, as the case may be—a state of things which people

are only too ready to lay at the door of the spawn maker or purveyor, whoever he may be. If a hole is made round, and has besides a funnel-shaped bottom, it is quite sure a rectangular plug will not fit it, and as spawn bricks are usually broken up into suchlike morsels, there must be several portions of each that do not come in contact with the manure, and therefore as the mycelium in those parts has nothing in the shape of medium to which it can become attached it perishes, and that possibly the more readily as such air spaces in the holes are filled with ammoniacal seam. Only spawn in direct contact can grow, so that a hole scooped out with a trowel or the hand is a much better receptacle for the spawn. The depth of manure over the lump may vary from 2 to 4 inches, and this material should be made quite firm over it. M.

Anemones.—These are among the most valuable of our hardy spring flowers, as they are almost the first out, the varieties of A. coronaria being very early, especially if sown every year, which is a good way of managing and treating them, as they seed freely, and germinate readily at this season if the soil for the

water, when if stood anywhere in a light, warm room they will expand and last a long time in perfection. Some I have now before me have been in a glass over a fortnight and are still fresh, and look as if they would remain so several days yet to come. A. fulgens is a grand species and should be in every border, as its brilliant scarlet flowers, with their full middles, are very showy and striking, and look quite dazzling when the sun is upon them. Where the soil is light, dry, and suitable, it is best to leave the roots in the ground, but in cases of a reverse nature it is safer to take them up after the tops die away and bury them in damp sand, in which they keep plump till the time arrives for planting again. 3. S.

Our Native Ferns,—Mr. Druery's letter in your issue of March 29 to some extent obviates the necessity for my replying to Mr. Webster's communication which is published in same column. I feel also that Mr. Webster's theme, "price of Ferns," is a somewhat delicate subject for a nurseryman to touch upon in the columns of a public journal. I will, therefore, content myself with saying that Mr. Webster's com-

Webster's motive in writing is an excellent and laudable one, and if he can only persuade the public to take an interest in British Ferns he may depend upon it that "cost" will be no obstacle to their being enjoyed by the poorest as well as the wealthy. F. W. Stansfield, Sate, Cheshire.

Strawberry Marguerite.—In your last issue you notice this old Strawberry as being well adapted for early forcing. I fully endorse your remarks with respect to its merits for that purpose, having used it for my first batch for many years, generally gathering fruit from it the last week in February. It is a first-class cropper, of first size and good quality. Black Prince and Vicometesse Héricart de Thury—good Strawberries that they are—do not come near it in my estimation, and cannot be grown where fine fruit is required. I have gathered as fine fruit from Marguerite in February as any for the season indoors or out. One drawback to it is that it is not a good packer, but for home consumption it is not surpassed for early lorcing. I make use of it also for the first supply outside, and in the neighbourhood it is grown

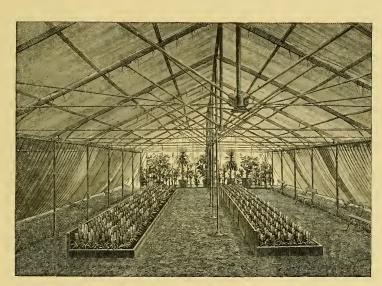


Fig. 89.—Show beds of hyacinths at messes. E. H. Krelage & son's nursery, haarlem. (see p. 454)

bed is light, and the situation chosen to grow them is warm and sunny, as it should be, as then they bloom the greater part of the winter. A few years ago we had a border of plants begin to flower in October, and he heads of the flowers were at times standing quite thick, peeping up through the snow, against which he scarlet and blue petals, when the sun drew them open, formed a great contrast. This border was a sloping one, facing south-east, with a high wall at the back, and the quantity of blooms we got from it was something enormous. This freedom and vigour with the plants does not seem to last after the first season, and the best plan is to dig up and sow gain, but in another place, where the ground should be prepared by working in plenty of rotten manure, leafmould and sand, and after being raked level the seed may be sown in drills I foot or so apart, and when the plants are up they should be singled out and left about the same distance asunder. Some sow thickly on a bed and transplant, but the removal of the plants, even if done very carefully, causes a check, from which they are some little time in recovering. What makes Anemones so valuable, in addition to their hardiness and decorative beauty outdoors, is their adaptability for cutting, as the flowers may be taken from the plants at nearly stage and put in

parison of the price of bardy Ferns with those of herbaceous and alpine plants is scarcely a fair one, considering the difference in their respective capability of propagation. Any ordinary Saxiftage or other free growing alpine, planted in suitable soil, may be easily divided into a dozen plants during one season, but there are few Ferns which do more than double their "crowns" during one season, and frequently a grower may have to wait for many years before he gets a single division. Again, in the case of seedlings, the patience, skill, and care required in the raising of Ferns is nut of all proportion to that required by the majority of herbaceous and alpine plants. Moreover, Ferns, to keep them always bright and fresh, require a certain amount of glass or other shelter which alpines do not. In place of Mr. Webster's example of Trichomanes radicaos as a "popular" Fern I would mention Adiantum cuneatum. I think I am quite within the mark in saying that for one plant of the former sold in the United Kingdom a thousand of the latter are sold. The consequence is that the "Maidenhair" is sold in the markets at the lowest rate at which it can possibly be produced, the grower knowing that every plant is sure to sell, and that consequently there is no risk of the stock being left upon his hands. I ne conclusion I am sure Mr.

by the acre by the market gardeners; being the earliest in the market it, of course, fetches the best price for the season. We have it opening its flowers by the hundred at the present time on a south border. Owing to its early blooming period it is often subjected to the cold changes of the weather, which occurse, very much deforms the fruit, otherwise it has a very handsome conical shape. Our early beds are well mulched with half-decayed manure, and wites are stretched horizontally about 18 inches from the plants, on which a cloth is placed at night as a protection from the early spring frosts, and which will repay us for the trouble. D. C. Powell, Powderham Castle, Devon.

Magnolia conspicus var. Soulangeana,—This beautiful early spring flowering shrub does not seem to be much grown. Why is this? There can scarcely be a grander sight in a garden in early spring than an established plant carrying some hundreds of its creamywhite flowers tinged with purple, that would worthily hold their own in an epergne or vase amongst the most choice flowers of our stoves or greenhouses. It is perfectly hardy, but flowering as it does so early in the season it requires protection from frost when in bloom. When space can be spared to grow it on a south

wall it will flower profusely, and can be more easily protected than when grown as a bush. Alex. Miller, Rood Ashton Gardens, Wilts.

Old-fashioned Flowers, - Flower Gentle is Amaranthus caudatus, and the name is also given to Amaranthus in general; Molly is Allium, Double Velvet Rose is Rosa holosericea flore-pleno, Virginian Silk is Periploca, Virgin Rose is Rosa alpina, Melan-choly Gentleman is Hesperis tristis, Garden Patience choly Gentleman is Hesperis tristis, Garden Patience is Rumex patienties, Monk's Rhubarb is Rumex alpinus, &c. Can Marble Rose be identical with Marble Flower? if so, it would be a form of Papaver somniferum. For the meaning of such old names may be consulted Nemnisch's Allgemeiner Polyglotten Lexicon der Naturgeschicht, Hamburg, 1793; Priot On the Popular Names of British Plants, 2d ed., London, 1870; Britten and Holland A Dictionary of English Plant Names (English Dialect Society, ser. c.), London, 1878, &c. J. H. Krelage, Haarlem, March 24.

Myosotis dissitiflora alba .- What I stated about Myosous dissilinora aira,—what is sacca anount bis plant at p. 316 appears to have amused "A, D.," who states that a sport appeared on an old plant about four years since with him and some others at about the same time. I was quite aware of this long ago from other correspondence, but at that time I had already a stock in hand both of seeds and plants, which from the first ware a distinct white in entire from the first were a distinct white in which from the first were a distinct white in entire plants that I grew from seed. This I mentioned in the Gardeners' Chronicle, at the same time asking the question if any one were in possession of a true white variety of disstiflora; if not, I should claim to be the raiser of that variety. To this no one replied; bad they have done so, it would have placed me on a different footing. From my stock seed was distributed. Will "A. D." say this is not being raised at all? Some time after Mr. Fish and Mr. Cannell, and others I knew, thought they had the same variety; the two former bad blooms from mine to compare, but neither came to the front, so I expect it was not the same. As I knew long ago, there are plenty of other white came to the front, so I expect it was not the same, As I knew long ago, there are plenty of other white kinds, so I thought it was not dissitifiora. I may state that I have this season a sport of quite a different kind on part of a plant of dissitifiora alba. The flowers are blue with white stripes, like a star. If I get seed from this which retains that character will that be raising a new variety or not? W. Divers, March 25. [Yes, provided no one has done it before, as they have done in the case of on allied species, ED.]

The Weather and Fruit Buds,-The Weather and Fruit Buds,—The coid north-easterly winds have greatly assisted in retarding the orening of the flower-buds. The Plum, which is grown extensively in this neighbourhood by the market gardeners, was fast assuming a snowy appearance, and I fear that those expanded have suffered much, as the wind rose nearly to a gale. Those buds which remained closely encased in their scales were remarked from opening and we true consent. prevented from opening, and we trust are preserved for weather more congenial for fructification to take for weather more congenial for fructification to take place, and that we may once more have a good crop, which has not been the case for many seasons. Early Cherries, Peaches and Nectarines, and Pears, Gooseberries and Currants, are now opening fast, the propects being most promising. Though the Apple crop was so great last year, there is every indication at present on most trees that we may have a good one this year if the weather, upon which so much depends, proves favourable. D. C. Powell.

Setting Peach Blossoms: Bees and their Relations to Fruits and Flowering Plants,—Your correspondent, Mr. J. Sheppard, has, I think, been wanting in respect to my friends the honey-bee. been wanting in respect to my friends the honey-bee, I should not care to place a bive of bees in a Peach-house; it would be, without doubt, good for the Peach blossom, but bad for the bees. It is generally admitted that bees play a very important part in the fructification of our fruit blossoms, for the special reason that many of them are protognous, that is, the stigma comes to maturity before the authers. Windfructified or anemophilous flowers are, as a rule, secantless, honeyless, and inconspicuous. I question much if the nectar was placed in the blossoms of flowers to nourisb the embryo fruit. Flowers that require the aid of insects must invite their visits, hence require the aid of insects must invite their visits, hence nectar—to be converted into boney—is offered, and the sweet perfume and bright colours of the flowers attract them, Regarding bees as only robbers obeying the laws of Nature and their own instincts to ling the laws of Nature and their own instincts to live is, to say the least, a very narrow-minded one.

"J. S." also grudges the pollen they take home; there is of this generally enough and to spare. Nature has providentially given breadstuffs with a liberal hand, and in many forms to suit all sorts and conditions of the animal creation.

"J. S." has made a misther Beas do not read-commentative hash made a mistake. Bees do not and cannot make comb from pollen—that has been proved from the time of Huber downwards; and I should have thought that educated gardeners knew better than that. From the time of Aristotle it has been noticed that a bee in gathering pollen confines herself to

the kind of blossom on which she begins, although the kind of blossom on which she begins, although from the same hive different bees may be gathering pollen from different flowers; for illustration, say at the present season, one may be gathering from Peach blossoms, another from the Wallflower, another from white Arabis. From this fact we see why the bees cause no intercrossing of species of plants; they only intermix the pollen of different plants of the same species. The Creator has stamped the seal of His infinity on all His works, so that it is inpossible, even in the minutest, "by searching to find out the Almighty to perfection." North Norfolk.

Hyacinthus orientalis var. Single Red Charles Hyacinthus orientalis var, Single Red Charles Dickens (the single red sport reverting to the original blue variety).—The single blue Hyacinth Charles Dickens is one of those varieties generally known and appreciated. It is cultivated in Holland on the largest scale, and not only tens of thousands, but hundreds of thousands of bulbs are sold anoually to foreign buyers. As is generally known in Holland, occasionally a single plant of Hyacinth will change its colour, although grown in the same way as others—a form of "atavism," or reversion to the colour of one of the parents, from which the variety was raised from seed. The usual alteration in colour, although others occur, is from blue to in colour, although others occur, is from blue to white or red. So among the plants of the blue variety Charles Dickens, plants here and there have been found which gradually or at once become red, and to this red variation, as is the custom in such instances generally—and a good custom, too—the same name is given as to the original variety, but qualified by a statement of the new colour—thus, "Single Red Charles Dickens." However, as this red sport of the blue Charles Dickens was found at the same time in more than one good name of the same time. the blue Charles Dickens was found at the same time in more than one garden, several different stocks of the single red Charles Dickens were grown and multiplied at the same time, the form and colour of the flowers of all of them being the same. After a time it became evident that the constancy of colour was different. In my nursery collection I possess these different stocks. There are among them some which have never changed, and of which all the offspring keep the pure red colour. But there is one among them which proves changeable, and in which some of the blooms are half-red, half-blue. Such variation was observed perhaps only in one bulb out of a hundred. It seems that these variations do not become fixed, as the balf-blue, balf-red flowers are sometimes totally red in the following year. For the future such specimens [?] will be cultivated separately for some years, to ascertain what their future behaviour may be, F. H. Kyelage, Haarlem, March 29, [The specimen was shown at the Royal Horticultural Society on Tuesday last, Ed.] Society on Tuesday last. ED.]

Asparagus Kale.-Of all the Kales, this, in my opinion, is the very best, as, besides being good in colour, it is of a hardy constitution, and delicious in flavour it is of a hardy constitution, and delicious in flavour when cooked. Besides these qualities, the habit of the plant is dwarf and branching, and therefore by careful picking of the sproats, when they are fit, the stalks continue to yield a long uninterrupted succession. To have this Kale strong, seed should be sown thinly at once in a well-prepared bed, and the plants pricked or planted out 2 feet apart in deep-dug or trenched land that has been heavily manured, as, like all the Brassica tribe, they are fond of good living, and if they get this it is surprising what a difference there is in the quality of the sprouts over those gathered from plants that are starved, the latter of which have more fibre, and are never so tender and which have more fibre, and are never so tender and

Potatos,—The following memoranda respecting some new Potatos may at this season of the year perhaps be of some interest to some of your readers. In the spring of 1882, 1 lb. each of the following varieties of Potatos was obtained, viz., Adirondack, Late Beauty of Hebron, Queen of the Valley, and White Elephant, and planted on April 24, in light loamy soil which for some years previously had been highly cultivated and manured with farmyard muck: the rows were placed 2½ feet, and the sets about 1 foot rows were placed 2½ feet, and the sets about 1 foot apart. The crop was not lifted till autumn, long after the tops had died down:—

1b. of Adirondack, cut into 35 sets, produced 5 stones 12 lb.
1b. of Late Beauty of Hebroo, cut into 55 sets, produced 6 stones a lb.
1b. of Queen of the Valley, cut into 34 sets, produced 3 stones 12/5 lb.
1b. of White Elephaat, less 1 tuber, cut into 33 sets, produced 4 stones 3 lb.

The one tuber taken from the 1 lb. of White Elephant was on April 8 cut into sixteen small sets, each set having a single eye, and placed in a greenhouse, each set in a separate thumb-pot. At the end of April these had made shoots from which sixteen cuttings were taken and each cutting inserted separately in a thumb-pot; thirteen of these grew, and were when well-rooted planted-out, on June 1. The sixteen sets were turned out of the pots into the open ground on May 4, and at lifting time produced 1 stone 13 lb. The thirteen cuttings planted out on June 1 grew fast, and made fine healthy vigorous tops, but partly on The one tuber taken from the 1 lb. of White Elephant

account of damage to the haulm when in a tender account of damage to the haulm when in a tender condition from quick growth received from high wind, and partly from disease, these turned out a failure. By the above trial Late Beauty of Hebron not only proved to be the most productive of the four sorts, but while the other three were of good quality when tested on the table, this kind was in every way super-excellent. According to my experience of it there is no Potato in existence of superior quality, and it is among the most productive. In 1833 four more single pounds were procured for trial, with results as follows:—

Brownell's Best, 1 lb. miaus 1 tuber, cut into 38 sets, produced

Browcell's Best, 1 lb. mious 1 tuber, cut into 38 sets, preduced 5 stones 4 lb.

"I tuber cut into 8 sets, started in heat and afterwards phated out, produced 5 lb.

"I tuber cut into 8 sets, started in heat and afterwards phated out, produced 1 lb.

"I tuber cut into 8 sets, started in heat and afterwards phated out, by oduced 1 lb.

"I tuber cut into 6 sets, started in heat and afterwards phated out, produced 4 lb.

"I tuber cut into 6 sets, started in heat and afterwards phated out, produced 4 lb.

"I tuber cut into 8 sets, started in heat and afterwards phated out, produced 6 lb.

"I tuber cut into 8 sets, started in heat and afterwards phated out, produced 2 lb.

"I tuber cut into 8 sets, started in heat and afterwards planted out, produced 2 lb.

"I tuber cut into 8 sets, started in heat and afterwards planted out, produced 2 lb.

"I tuber cut into 8 sets, started in heat and afterwards planted out, produced 6 lb.

Total from 1 lb. of seed, 12 stones 2 lb. (i.e., produced 7 stones, "I tuber cut into 8 sets, started in heat and afterwards planted out, produced 6 lb.

Total from 1 lb. of seed, 1 stones 1 lb.

"I tuber cut into 9 sets, started in heat and afterwards planted out, produced 9 lb.

"I tuber cut into 9 sets, started in heat and afterwards planted out, produced 9 lb.

"I tuber cut into 9 sets, started in heat and afterwards planted out, produced 1 lb.

"I tuber cut into 8 sets, started in heat and afterwards planted out, produced 1 lb.

"I tuber cut into 9 sets, started lin heat and afterwards planted out, produced 1 lb.

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"I tuber cut into 9 sets, started lin heat and af

So far my experiments with Potatos in light, dry, but So far my experiments with Potatos in light, dry, but highly cultivated soil, tend to show that as improvement in Potatos goes oo, the whole crop of tubers may in future (if not now) be consumed by men and animals, with the exception only of a small quantity of peelings, which will be all that will be necessary to reserve for seed purposes. I am also rather inclined to consider that peelings from large, well-formed tubers are superior for seed purposes to entire but under-sized tubers. That much-needed personage, the horticultural chemist, must be much more freunder-sized tubers. That much-needed personage, the horticultural chemist, must be much more frequently before the public ere we are fully able to judge which is really "all round" the best Potato. Surely there is a great demand for horticultural analytical chemists; i fear, however, that the demand is to a great extent latent at present; perhaps when it wakes into life an adequate supply will be forthcoming. J. E. Ewing, Eaton, Norwich.

Sprouting Broccoli.—Sprouting Broccoli are not half so much grown as they deserve to be, as there is nothing in the whole range of vegetables that affords so many dishes from the one plant, for when well grown the yield is something enormous, and one may pick and come again and again to the same plant and still find the sprouts pushing out in spite of the plucking or weather; and its habit of turning induring the winter or very early spring makes it doubly value. the winter or very early spring makes it doubly valu-able, as then green vegetables are generally scarce and dear to the consumer. Like the Asparagus Kale, Sprouting Broccoli should be sown at once, and in the same way, but instead of planting it out in rows the same way, but instead of planting it out in rows at 2 feet apart it is better to give it 4 feet or more, and to plant Potatos between, by doing which the plants attain a much larger size, and, being stronger, yield a great number of sprouts. Another advantage in growing these and other of the Brassicas in the same way is, that the stems become not only stouter, but more woody and hardy, and are therefore in a condition to bear hard frost, which often kills those drawn up and made tender through being planted so closely tocether. Y. S. closely together. J. S.

ACACIA PULCHELLA. - In the conservatory at ACACIA PULCHELLA. — In the conservatory at Kew a fine specimen of this wonderfully pretty West Australian species is now in bloom. It is very distinct with its twiggy branches beset with spines and clothed with tiny pinnate leaves, and a profusion of globular heads of orange-yellow flowers. Very different in general appearance but equally effective as a cool conservatory decorative plant, especially when planted out, or where its roots are allowed plenty of space, is the lemon-yellow flowered A, verticullata, a native of Tasmania as well as of Australia. plenty of space, is the lemon-yellow flowered A, ver-ticillata, a native of Tasmania as well as of Australia. From the former country this species was one of the very first plants to find its way to British gardens, having been introduced in 1780. Large pyramidal bushes of A. verticillata with their dark green linear Gorse-like phyllodia, and the numberless spikes of lemon-yellow flower beads, are amongst the most attractive of all the plants now blooming in the Winter Garden at Kew.

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Foreign Correspondence.

ORANGE TREES ON THE GENOESE RIVIERA.— In a recent number of the Gardeners' Chronicle a correspondent, Mr. J. Douglas, writes in favour "of a high temperature to bring up the flavour of the Orange during the ripening period," My experience on the Genoese Riviera (Mentone) may be of some use in elucidating this question.

The Oranges usually grown and sold on the Riviera are not very good, to say the least, and their deficiency in flavour and sweetness is generally attributed to the climate-to the heat thereof not being sufficiently great. My experience proves that such is not the se, and that the poor quality of the fruit is owing to inferior sorts being grown, and to defective cultivation. About fifteen years ago I planted seeds from an Orange tree at Monaco, no longer in existence, which was justly reputed to grow better fruit than any other in the district, as also seeds from a St. Michael's Orange purchased by a friend at Covent Garden. These seeds came up, formed nice young plants, were carefully grown, and planted out in the open ground, more as ornamental trees than with the view to fruit. I accepted the generally received opinion that good Oranges could not be grown in this region, because the climate was not warm enough in winter. Three years ago, when the trees were probably about twelve years old, they began to flower. I have read that this is generally the case with seedling fruit trees—that they do not flower and fruit until they have attained about a mature age, unless grafted. Left to themselves they have to attain maturity, like animals, before they begin to reproduce themselves. Such, certainly, was the case with my Orange trees. The first two years only a few sparse flowers and fruit were produced, but this last year they produced a full crop of beau tiful Oranges, large in size, perfect in sweetness and flavour-several hundred on each tree. The St. Michael's are exactly like the best we buy in Covent Garden, smooth and thin-skinned, sweet and Three years ago I grafted a number of ordinary seedlings with grafts from the St. Michael's tree, which have done well, and promise to flower and fruit this summer. I thus hope to have introduced the St. Michael's Orange into this part of the world. The Orange trees here flower in April and May, set and grow their fruit during the heat of the summerand ripen during the winter with a rather low temperature. When I arrived here, at the end of October, the Oranges were beginning to turn colour, but were still greenish. By the middle of December they attained their golden hue, but were still quite sour. They remained so until the beginning of March, when they became eatable, and now (24th) they are quite sweet and good. Thus the ripening process has taken place under our winter temperature, which is rather low for a tropical fruit like the Orange. According to my meteorological observations, taken during a period of above twenty years at Mentone, the November minimum is 49°.2, maximum, 60°.1; the minima and maxima for December are 44°.2 and 55°.1; those for January are 42°.8 and 53°, those for February are 43°.5 and 55°.7; those for March are 45°.3 and 59°.3. It must be remembered, however, that these are porth shade temperatures, that the sky in winter is generally clear, and the sun radiant and very warm. The Orange trees are all grown in full sunshine, and sheltered from all winds, so that they are exposed to great sun-heat all but constantly from 8 A.M. to 4 P.M., certainly five days out of six.

It is a notable fact that the Orange free cannot bear wind from any quarter whatever; even from the south it must be sheltered. Wherever it is found thriving there shelter from wind exists. In the Balearic Islands all the Orange groves are in crater-like depressions, or in clefts in the rocks. In Spain, near Valentia, the Orange trees are grown as bushes, not more than 12 or 15 feet in height, sheltered from the sea winds by groves, forests of Carouba and Olivetees. In my garden at Mentone, which is on the mountain side facing the south-west sea, they do well if protected by the Olive trees; but if I cut down the latter, the Orange trees they protected begin to fing and to suffer. I have just cut down a fine, previously healthy, young tree, fifteen years old, which drooped and faded ever since it lost its shelter some four years ago. Its roots are quite healthy, but the branches were turning, from the sea wind which caught it, and dying one after the other. All over the Mediterranean islands and shores Orange trees,

healthy and in full bearing, are seen growing in courtyards behind walls (Cordova, Seville, Malta, &c), but then the surrounding buildings must not be too high to prevent the suo's rays reaching them summer and winter. Our summers at Mentone, and in the Mediterranean generally, are very warm day and night for four months, which has probably much to do with the winter maturing of the fruit.

Such a tree, courting, as it were, confinement, ought, one would think, to do well anywhere under glass with artificial heat, but probably it would require more heat in summer, when growing its fruit, than in winter, when merely ripening it. Heat in winter would no doubt hasten the process, as in Grenada. Henry Bennet, M.D., Torre di Grimaldi, Mentone.

FORESTRY.

PLANTING .- General forest planting should now be brought to a close for the season, although the transplanting of evergreens and young nursery stock may be successfully pursued until the end of the month. In removing plants during the present month great care must be taken to prevent the roots being exposed longer than is avoidable to the dry cutting winds usually experienced at this season; indeed, as the month advances the risk from continuous dry weather after planting increases, so that quick removal and a thorough puddling of the roots of all transplants can alone insure safety and success in the operation. When removing large trees and shrubs to a new site nothing succeeds equal to a copious supply of water used not only at the root, but syringed over the foliage as well; and this operation repeated at intervals during dry weather, until the tree shows signs of having got established io its new abode.

NURSERY WORK should now proceed in earnest, seed-beds being prepared, coniferous tree seeds sown, and deciduous seedlings of all kinds transplanted into lines. As the month advances seedling evergreens, such as Holly, Yew, Privet, and Firs, may also be planted out into soil previously dug and well broken up. Give ample room between both lines and plants, so that long fibrous roots and a strong bushy habit may be induced. Close planting is injurious, and should never be tolerated. The ground intended for seed-beds should be deeply dug over some time previous to sowing, and all lumps or hard clods broken over and the whole made smooth and fine with a rake. Mark off the beds 4 feet in width, and leave an alley 12 inches wide between each for convenience in weed ing, and keeping them in proper order. The seeds should be sown thinly and evenly over the beds, and covered according to their size with finely riddled soil. Any plots or borders not required for re-filling should be heavily manured or enriched by leaf-mould, lime, or nursery refuse, and dug roughly over previous to cropping with Turnips or Potatos.

THINNING .- The general thinning of plantations will now be completed, and any timber, firewood, or branches should be cleared out at once, and either lotted for sale or disposed of to the best advantage. Proceed with the marking of Oak, as owing to present mild weather we have every prospect of an early spring, so that bark-stripping will, in most districts, soon commence. Every preparation ought to be made beforehand, so that the work may proceed without interruption when once begun. Owing to the stormy nature of the weather during the past few months there must have been considerable damage done to woods and plantations throughout the country by the uprooting of trees and breaking of branches. All available hands should now be employed in having such trees and branches removed. The handiest and most simple method for disposing of the roots of upturned trees is to dig a hole of suffi cient size immediately behind these, into which they will fall when severed from the trunk. The hole should be made large enough to allow a covering of at least 12 inches of soil on the root. Where, however, it is intended to substitute other trees for those blown down all the soil adhering to the root should be removed with a pick or spade, and the root carted to some convenient out-of-the-way place usually reserved for such rubbish. All broken and twisted branches should at once be removed, as such work cannot be performed without damage after the buds begin to expand. Dress neatly the wounds caused by

amputation, and in such a manner as to avoid the lodgment of water.

FENCING.—If possible all new iron, wire, and wooden lences should now be erected before the ground gets bard, after which the placing of uprights will be both difficult and expensive. To prevent trespass, the hedges and fences of woods adjoining pasture-land should be examined and put in a good state of repair previous to cattle being turned out. Where young and unfenced plantations are exposed to the depredations of hares and rabbits, it may be found necessary to wash those parts of the stem and branches within their reach with Davidson's Compost, which generally proves efficacious if properly applied during dry weather. Attend to the staking, tying, and fencing of newly transplanted trees and shrubs.

TREE-GUARDS in paddocks will require frequent examinations, to see that all is right, as when left in a dilapidated condition they are not only unsightly but expose the trees to the gnawing propensity of young horses. A good tree-guard or hurdle that will fit close to the tree may be made from Larch rails 5 feet in length, held together by two bands of boop-iron or wood. These, when well made, are not in the least unsightly, and will last for many years.

ROADS AND WALKS.—This is a good time to edge drives and walks, as the sharp outline made by the edging-fron is soon hidden by the spring growth of grass along the margins. Gravel or other material for binding should now be laid on thinly, and a heavy roller passed over the surface, which will greatly tend to consolidate it. This is best done after a heavy shower of rain. Such plaotation drives as have been cut up by heavy traffic during winter, and that are not likely to be much used in summer, may now be put in order and well rolled down. Grass seed will soon vegetate if sown on bare spots along the margins of such roads, the ground being previously prepared by a slight raking. As time permits ground-work operations, such as levelling, road and walk making, excavating, &c., may now be proceeded with and carried on during favourable weather.

DRAINAGE.—The excessively heavy rainfall of the past winter, although beneficial to newly transplanted trees and shrubs, has necessitated a more than ordinary amount of care and attention being bestowed on drains and culverts. The banks of streams and rivers that have been damaged should be put in repair, and all closed drains examined and the obstructions, if any, removed. Clean and repair woodland watercourses where this cannot be left until warmer weather and when the flow of water is at the lowest ebb,

GENERAL WORK.—Bind faggots in the woodland and have them carted home and stacked during dry weather. Branches for this purpose should be lotted alongside the margins of plantations or woodland drives as the work of thinning proceeds, and after becoming dry may be bound ready for use. It is well to have a large shed for the storing of faggots when dry, and from which they can be carted to the mansion as required. Larch branches alone are used for making small faggots for fire-lighting, but those of larger size and intended for oven-heating may be made of any wood that will burn well. Those about to make charcoal by the old method of kiln-burning should make all preparatory arrangements, so that the work may be commenced during next month. We have enjoyed, during the latter part of March, weather of phenomenal mildness for the season of the year, but the question is, Will it endure long? the general remark in reply to which is "It's too good to last," which is a pretty accurate prognostication to make in a changeable climate like that of ours. A. D. Webster, Penryhn Castle, North Walcs.

FORESTSANDWASTE LANDS (IRELAND).—Amongst the Parliamentary papers recently issued is a preliminary report on the re-afforesting of Ireland, by M. D. Hewitz, forest conservator, of Copenhagen. This is the result of an actual survey which leads M. Hewitz to the conclusion that at least 5,000,000 acres are well suited for forest cultivation. "Many hundreds of thousands of acres," says he, "do not pay an interest of 6d." a year, and the greatest part of the 5,000,000 of acres are waste ground, and pay not 1d. There is much grassland and many fenced paddocks on the ranges where the Heather and Brake is in uch force, and where tocks, stones, &c., cover the

ground to such an extent that the actual gain per acre is not more than 1s. to 2s. Would it not be better to cultivate these vast areas, so eminently suited for forest, and to obtain a yearly rental of at least & r per acre instead? The calculation is easily made, and without entering into details, which would be out of place here. Cultivation, including cost of nurseries, purchase of seed, preparation of ground, purchase of tools and buildings, fencing, labour, and superintendence, should for, say, 100,000 acres, he about £4 per acre, or £400,000. This first cost, calculated with 4 per cent. interest for thirty years, £17 per acre; add to this expense for superintendence, roadmaking and repairing, maintenance of fences and drains, as well as all incidental expenses, made up as follows :- First cost after thirty years, £1,700,000; one superintendent at £500 a year, fifty forest-rangers at £50 to £75 a year, and repairs of buildings, tools, &c., at £300, £125,000; road-making and repairing, and fences, drains, and incidental expenses, £35,000; total, £1,860,000. And to put the expenses with a round sum at two millions, the cost per acre will be, at thirty years of age £20, this allowing for the highest wages, and I firmly believe that the expenses will be 25 per cent. less." He thinks the Lough Neagh catchment should be cultivated first; at the same time plans should be prepared for the cultivation of the Shannon, and other basins; and also a number of smaller trial plantations should be commenced in the more difficult highlands and coast areas of Donegal, Leitrim, Sligo, Mayo, Galway, Clare, and Henry. After setting out how nurseries may be made to supply the great plantations, the report proceeds to explain how the whole scheme of re-afforesting should be put into operation, and closes with an assurance that the work would be profitable in every direction. appendix is a list of forest trees suitable for cultivation, with remarks on their character, habits, utilisation, and cultivation.

The Kosery.

Noisette Rose Cloth of Gold.—This has been well described as a truly magnificent Rose when brought to perfection. The important point is how to do this. It is a particularly tender Rose, and one of the most reticent in producing flowers; at the same time it is of so vigorous a habit that, under good treatment, it will make shoots from 10 to 15 feet long in one season. This very vigour of development has induced some cultivators to rush to the conclusion that a repressing or starving system of treatment should be adopted, with a view to forcing it into bloom. All such attempts have failed more or less. What is required is good cultivation, and the encouragement of a vigorous and healthy growth; in a few years, when such wood becomes well ripened, then flowers may be looked for. A few years ago one of our then leading Rose growers recommended that the border in which it is planted should be well drained. and the soil made of good condition; there should be an ample top-dressing of turfy loam and well decomposed manure, it scarcely matters how strong. This dressing should be repeated annually, and copious waterings of weak liquid manure be given immediately after the blooming season. In the case of this Rose close pruning should not be resorted to, the knife should be called into requisition only for the purpose of removing small and over-crowded branches, and such unripe shoots as might be produced late in the season. "A shoot ought never to be shortened, but rather encouraged to grow to its utmost extent; if it overtops the wall before it has attained its full length, it may be twined and trained downwards, as fruitful buds are, for the most part, produced at or near the ends of these vigorous shoots." Of late years we have witnessed the introduction of fine yellow Tea and Noisette Roses, but Cloth of Gold, because of its superb colour, regal beauty and doubleness, will remain a favourite for years to come: what is needed is that its proper management be clearly understood.

REFORM IN PRUNING ROSES .- It has always seemed to me that much valuable time is wasted in gardens over Rose-pruning. A Scotch friend lately told me he should have no time next week for other gardening work, as he should be pruning his Roses, I recommended him to adopt my plan of pruning them with hedging-shears—a plan by which 200 or

300 may be pruned in an afternoon, and since the adoption of which I have found them flower quite as well as when each shoot was pruned separately with a knife. He wrote to say that he had adopted my recommendation, which reminded him of the follow ing local anecdote. A Scotch minister, fond of his garden, could never persuade his old-fashioned gar-dener to understand hybrid perpetuals; much time was wasted every year in pruning, but the flowering was indifferent. One year, just before pruning time, the minister's donkey got into the garden, and finding these new-fashioned Thistles to his liking, ate them off nearly to the ground. That year they flowered splendidly, and on a friend congratulating him on his fine Roses the minister drily remarked "Formerly I had a gardener who was an ass, but now I have found an ass who is a gardener." [Oh!] C. Wolley Dod, Llandudno, March 28.

Keports of Societies.

The Daffodill Congress.—It was no slight pleasure that was reserved to the frequenters of the Royal Horticultural Society's Gardens on Tuesday last, and no less a great gratification to those who dwell habitually in the country, to have had such an interesting and beautiful show of Narcissus. To one one well acquainted with these pretty spring flowers, and to one who knows but few beside the flower of his childhood, the old-fashinoned Daffodil, or Daffodowndilly, these many varieties were a pleasant surprise. These are seen in most woods and meadows in England, growing up uncared for usually, as wild flowers do, among the grass and low herbage. The conservatory in the Society's gardens had a glow of warm yellow on either side of the middle area, differing very much from the parti-coloured scene witnessed at other floral displays there. Flowers for cutting are so much the fashion at the present time, we must be excused if our first visit was paid to the cut flowers and bouquets. We all like to see the possibilities of any flower when used in the ret steeper recores. The Daffodill Congress.-It was no slight pleaand bouquets. We all like to see the possibilities of any flower when used in the cut state for our rooms, and although we knew the effect to be got from the common form of Daffodil, it was an agreeable surcommon form of I Antodil, it was an agreeable sur-prise to note what pretty arrangements were made with the less known kinds. Miss Jekyll's arrangement with these, which she had intermingled with much ever-green foliage of Ivy, evergreen Oak, Berberis Aqui-folium (the rich warm purple of which contrasted admirably with the deep yellow of the Irish maximus). Howeving sprays of Laurustines Puseus sections, and admirably with the deep yellow of the Irish maximus), flowering sprays of Laurustinus, Ruscus racemosus, and others, seemed negligic and good of its kind, and suitable for a sombre-hued apartment or a front hall; but to our taste it was too roughly devised and carried out to fit harmoniously into the decorations and appointments of a pleasantly furnished living room. Some bouquets from Messrs, Hooper & Co., of Covent Some bouquets from Messrs. Hooper & Co., of Covent Garden, were also not precisely the most pleasing in design, nor were Mr. Dickson's or Mr. Margam's. The basket of Daffodils, with an Ivy-covered handle, and a large bouquet, lightly put up, both by Mr. Aldons, of South Kensington, were well done, and perhaps he had performed as good a piece of work as could be with not the most promising of materials, for with all our liking for the flower in its many forms and varied hues, it will not lend itself to the bouquet with so much grace as many other flowers do.

hues, it will not lend itself to the bouquet with so much grace as many other flowers do.

Our Dutch friends, to whom so much is owing in bulb culture and bulb raising, were represented by Mr. Krelage, of Haarlem. This gentleman, we noticed, had the sorts N. lobularis plenus rugilobus and Tazetta, gold and sulphur in double varieties. Mr. Moore, of the Glasnevin Botanic Gardens, had several pretty varieties—Eyenstettensis, a starry bloom, small, and primrose-yellow in tinge; and the Tenby Daffodil, N. obvallaris.

Contrary perhaps to the usual practice, we reserved our inspection of those we had heard were the finest collections at the show till we had inspected the

our inspection of those we had heard were the finest collections at the show till we had inspected the flowers shown by others. It must be allowed that Mr. Walker, a grower of cut flowers for the market, quite distanced every other exhibitor. The blooms were cut and shown with prodigality, which must prove an impossibility to any one not having great resources, and not only so, but they were so attractively arranged in fan-like bunches; that every beauty was visible from the front; and the flowers themselves appeared to be the prefection of good culture. selves appeared to be the perfection of good culture, selves appeared to be the perfection of good culture, and had been in nearly every instance cut just at the right moment, so as to show the purest white or the proper yellow tint. Mr. Walker evidently could teach us many useful lessons about his flowers, not only how to grow them, but when to cut them, and how and where to place the flowers to get them to expand. The kinds which Mr. Walker brought to the show were so numerous that we cannot hope to give their names within the limits of this notice; but

we cannot forhear touching on a few that seemed to be but little known by any one out of the select circle of Narcissophiles. Shirley Hibberd, a yellow sort that is large and distinct; the white N. cernous, of a that is large and distinct; the white N. cernuus, of a pleasing silvery-white; and the double N. cernuus plenus, also white; and N. cernuus pulcher, a white with a pale yellow trumpet which turns to white; bicolor Horsfieldi, Corhularia conspicua, or Hoop Petticoat, a pretty low-growing, early flowering bulb; Cambricus, of a sulphury-white and yellow trumpet. It was almost too late for this and some more of this It was almost too late for this and some more of this section. A very distinct one is William Goldring, a white, with a trumpet of primrose. N. lorifolius and N. l. Emperor are fine grand blooms, the colours of gold and primrose. Of Narcissus with chalice-shaped crowns were N. odorus, of a deep golden tint, having a deeply lobed corona; N. Leedsi argentea, having a white crown—a very distinct flower in its class. a white crown—a very distinct llower in its cuas-many N. incomparabilis sub-varieties were seen in Mr. Walker's collection, many of them being dis-tinctly beautiful, and ranging in colour from deep orange to white—of this last colour being the early blooming N. i. Stella; N. Minoine Hume, white, but having a golden crown; N. i. pallidus. Princess Mary of Cambridge is a fine large flower of a pale printrose. The true Narcissus, so well known in its form, of N. poeticus, was shown in this collection by N. poeticus ornatus, pure white, with an orange-scarlet margined corona; N. poeticus tripodalis, similar but rather more stellate than the first-named; N. Butbidgei minor, a sulphur-white blossom, with an N. Burbidgei minor, a sulphur-white blossom, with an orange crown; and a still more lovely tinted one in N. Burbidgei sulphureus stellata, in which the crown

N. Burbidgei sulphureus stellata, in which the crown is margined with scarlet, while the perianth is sulphur. Next in beauty to this collection, but far larger in quantity, we must place that of Messrs. Barr & Son, of Covent Garden, an exhibitor than whom in love for this class of plants none stands higher. He seems verily to have made them his, and the numerous examples which he can place on view prove that he thoroughly understands their culture, and is in possession of a great number of varieties. Here he had arranged them in the groups as they are found in his arranged them in the groups as they are found in his list: these were formed on mossy hills with the list; these were formed on mossy hills with the dividing valleys between, so that the uninitiated could discern which were Hoop Petticoats, bicolors, and N. incompatabilis, and which were those of the N. poeticus type. Among the more noteworthy of Mr. Barr's collection were Rebecca Syme, a form with pale yellow flowers, with a delicious fragrance, Leeds' hybrids and forms of the incomparabilis section were shown in quantities, remarkable mostly for the contrast between the pale segments and the golden or orange-coloured and red-edged cups. He also had the Queen Anne's Jonquil, a pretty, small-growing kind. In the N. poeticus varieties this collection was noted as being particularly rich, as also in the N. Burbidgei section. The same, and other kinds, Mr. Barr had placed in bottles, and arranged them as is usually done, and thus had appropriated the major

usually done, and thus had appropriated the major share of space for his exhibits. The collection that Messrs. Veitch & Sons, of the Chelsea Nurseries, placed on view was greatly to be admired, and as this firm had been as free with their blooms as Mr. Walker was with his, although the arrangement differed from his they had produced a fine colour effect in the mass, and the individual flowers were particularly good and fresh; they numbered about thirty kinds. Mr. Ware, of the Hale Farm, Tottenham, had also a collection of kinds of great beauty, amongst them being flowers of N. bicolor hervifolius, a sulphur-white, with a golden-coloured crown; N. bicolor longifolius, N. Flumei concolor. Smaller lots of cut blooms were seen, such as the so-called Welsh forms of Narcissus, which J. D. Lleweilcalled Welsh forms of Narcissus, which J. D. Lieweilyn, Esq., of Penllergare, Swansea, had sent up : seven
bunches sent from the gardens of the Earl of Essex, at
Cassiobury, and some from the garden of G. F.
Wilson, at Weybridge, these last being several varieties
of Hoop Petticoats, N. integratus fi.-pl. of HarpurCrewe, and a variety of N. Vincenti, N. princeps, and
a few others. There were thirty varieties exhibited by
the New Plant and Bulb Company, Colchester, but
being mostly the same as those seen in the collections
of others we mention no names. Cantain Nelson's of others we mention no names. Captain Nelson's flowers were remarkable for their purity and refine-ment, although not showing evidence of such careful cultivation as was seen in some cases. His "Gem" cultivation as was seen in some cases. His "Gem" was a very lovely form, white, and almost like a Eucharis. Minnie Hume was also a lovely flower, with white segments and a "primrose-coloured cup Volutus, one of the true Daffodlis, is remarkable for its very large hold cup and twisted perianth-segments. Mrs. Vivian, Singleton, Swansea; E. G. Loder, Esq., of Floore, Weedon, complete the list of those who sent their contributions of Narcissi to that which turned out a very successful floral file.

Shropshire Floral and Horticultural.—The fifth annual spring exhibition of the above Society was beld in the Music Hall, Shrewsbury, on the 27th ult., when the place was well filled with a wealth of flowers excelling the results of other years in the abundance of bloom. Numeroug entries were made in most of the classes, and although not so spirited a competition as

could be desired existed yet there were not wanting those kindly evidences of rivalry which go a long way to make our exhibitions what they really are. Most of the exhibits were creditable, and some of them of the first order, especially the trained Azaleas. For this show the committee depend largely upon the support of the local nurserynea, who are evidently in harmony with the former, and materially assisted to afford a treat to the good people of Stirewsbury, who evidently were not slow to appreciate it, for during the greater portion of the day the place was comfortably filled, and at times crowded with people; hence the efforts of the committee were met with a hearty response.

Azaleas.—The premier position for six (distinct) was

mittee were met with a hearty response.

Azaleas,—The premier position for six (distinct) was gained by Mr. Thurtle, gr. to Mrs. R. S. Burton, and a similar award for six trained specimens (distinct) was given to Mr. H. Purser, gr. to J. Watson, Esq., the specimens being nicely trained and well flowered. Criterion was especially fine. These classes were open, In the amateurs' class the 1st prize for two untrained specimens was awarded to E. Pond, Esq., Newport House. Hyacinths,—In the open class for eighteen varieties (distinct), pots not to exceed 6 inches, there were four comectiors, the premier position being rained varieties (distinct), pots not to exceed 6 inches, there were four competitors, the premier position being gained by Messrs, Jones & Son, Coton Hill Nursery, Shrewsbury. In the class for twelve (furserymen excluded) by Messrs, Jones & Son, Coton Hill Nursery, Shrewsbury, In the class for twelve (furserymen excluded) to Miss Bannerman (gr., Mr., J. Sheppard) with a very nice lost. Miscellaneous plants in flower, pots not to exceed 70 inches, there were four entires, the leading position being secured by Messrs. Pritchard & Son, Frankwell Nurseries, Shrewsbury, in whose collection was a very fine variety of Civia miniata, with large richy coloured flowers in a compact umbel; Rhododendrons, Azalea mollis, forming a very conspicuous display. The other batches staged were also very creditable. For six Cyclamens in flower there were three entries, the last exhibitor being again 1st, with excellent plants, grand flowers and colours. Six Cinerarias, distinct, pots not o exceed 8 inches,—1st, Miss Bannerman, whose plants were not sa compact as the others; but the flowers were very fine. Six Roses in pots,—1st, James Watson, Esq., very fine. Six Roses in pots.—1st, James Watson, Esq., with very nice specimens. Twelve pots of Tulips, in which there was close competition, each lot being very which there was close competition, each lot being very even and well grown; but the premier position was gained by Messrs. Pritchard & Son. A collection of bulls in flower, fifty post, the pois not to exceed 6 inches, two lots were staged, and constituted a most interesting display—rst, Messrs. Pritchard & Son, whose collection included nice posts of Trilliam grandifform, Amarylises, Narcissus, Scillas, Tulips, &c.; while the ad collection contained specimens of the charming old Lilium candidum. Collection of twenty-four spring-flowering hardy plants. The same exhibitor again took the 1st prize with a fine lot of Ghent and Mollis Azaleas, Rhododendrons, Deutzia graculis, &c., forming a very bright and attractive group, the hardy Azaleas being especially well grows.

grown.

Miscellaneous Exhibits. — Messrs. James Dickson & Sons, of Chester, staged two dozen Auriculas in flower, which were greatly admired. Amongst the batch were good trusses of Spalding's Mary Grey, Taylor's Glory, Read's Aeme, Simonite's Frank Simonite, Campell's Pizarro, &c. The same firm also staged a collection of those charming Japanese Maples, very rich in foliage, and most atturactive. A Special Certificate of Merit was awarded both these lots. Mr. A. Myers staged magnificent trays of zonal Pelargoniums, and the Roses arranged with Maidenhair Fern, to which a special prize was given. Mr. Maunton (one of the Hon. Secs.) exhibited a nice tray of Maréchal Niel; and James Watson, Esq., also staged a tray of Roses, amongst which were some good flowers. (*Correspondent.*)

Torquay Horticultural: March 20.—The spring exhibition of this Society was held in the Bath Saloon, and was a very successful one—horticulturally considered. and was a very successful one—horticulturally considered. The nurserymen of the town and surrounding district united to make the exhibition attractive, and their efforces qualified to make the exhibition attractive, and their efforces equalled in that part of the country. The contributions of both nurserymen and amateurs in the various classes open for competition showed superior cultivation all round, and gave the judges plenty of work. The leading prize-winners were Mr. H. Yelland, gr. to Coloned Campbell; Mr. Hunt, gr. to P. B. Drinkwater, Esq.; Mr. Tucker, gr. to J. Price, Esq.; Mr. Sloman, gr. to Captain Fane Tucker; Mr. Cole, gr. to W. B. Fortescue, Esq.; and Mr. Griff, gr. to Grant Norris, Esq. The nurserymen who cootributed were Mr. Small and Messrs, Phillips, Messrs. Veitch & Son, and Messrs. Lucombel; and Mr. Burridge, of Paignton; and nice collections of Orchids, &e., came from the gardens of the Earl of Kinnoul and Moreton Sparks, Esq.

Variorum.

COFFEE TREE IN FRUIT AT KEW .-- One of the most interesting plants now in the Palm-house at Kew-one at least which would probably attract a larger number of untravelled Englishmen than any other in that huge structure-is a fine healthy tree of Coffea arabica bearing hundreds of its large Cherry-like fruits. The plant in question is growing in the corner of a bed in the central transept, and the symmetrical habit, the dark glossy leaves, and scarlet berries form a combination which cannot fail

to please any one who has any perception of beauty When in flower the rich aromatic fragrance exhaled by the Jasmine-like flowers is very noticeable; indeed all that part of the Palm-house in which the plant is growing is suffused with the delicate and pleasing perfume. Little more than two centuries and a quarter have elapsed since Coffee was first used in Britain, and it has now become one of the most important household articles in many European countries. It is believed that Coffee was first used in Arabia about 1450, and in a century its use had spread to Egypt and other parts of the Turkish empire. For two centuries from its introduction into Arabia the use of Coffee seems to have been confined to the Mahomedan nations of Western Asia; and, considering its rapid spread and popularity among the European nations, it seems remarkable that it has not, like Tobacco, extended to the Hindus, the Hindu-Chinese, the Japanese, or the tribes of the Indian Archipelago, who no more use it than the Europeans do the Betel preparation.

TOBACCO IN PUERTO RICO,-The Tobacco crop of Puerto Rico for 1882 is reported to have been a very good one. Part of the produce, it is further stated, goes to Cuba, where it is manufactured, and passes in Europe as Havana weed; the remainder is purchased by the Government monopoly for consumption in Spain. Tenders are invited yearly for the supply to Government of from 800 to 1000 tons of Tobacco, growth of the island. Some 945 tons of Tobacco, value 308,046 dols., were exported in 1882 for Cuba; and 1015 tons, value 330,914 dols., for Spain. Some of the best qualities of Tobacco, when properly dressed and turned into a well-shaped cigar, surpass, perhaps, in flavour the choicest Havanas. A Tohacco manufactory has been established in Puerto Rico under the name of "Las Dos Antillas," where superior qualities of cigars are sold which can vie with the best Havanas, and at one-third less price.

Obituary.

WE regret to have to record the death, on March 26, at Dulwich Wood, Norwood, of Mr. EDWARD MILNER, the eminent landscape gardener. Edward Milner was born at Darley, in Derbyshire, of a good old family, his ancestors having owned land there since 1600. He was well educated at Bakewell Grammar School, and apprenticed to Sir Joseph Paxton, then steward and head gardener to the Duke of Devonshire. After his apprenticeship he went to Paris to study for four years, chiefly at the Jardin des Plantes, and with the Professors attached to that then flourishing institution. After travelling through Europe he returned to England, where he visited and reported on many of the principal gardens for Dr. Lindley, then Editor of the Gardeners' Chronicle. In 1844 Sir Joseph Paxton entrusted to him the work of superintending the laying-out of the Prince's Park, Liverpool, the first park made with the view of increasing the selling value of the surrounding land, This work was most successful, and was the heginning of Mr. Milner's professional work. When the Crystal Palace at Sydenham was decided on Sir Joseph Paxton gave over to Mr. Milner the carrying out of the extensive garden works connected with it. Since their completion Mr. Milner has most successfully practised himself, His works, artistic samples of the natural style, were not confined to this country, but are well known in France, Belgium, the Rhine Provinces, Denmark, and Sweden. Among his many works in England are the public parks at Preston, Halifax, and Buxton; Ashwicke Park, Bath; Wroxall Abbey, Warwick; Fenton Park and Longridge Park, Berwick; Manley Hall, Manchester; Bodnant and Bryn-y-Neuadd, North Wales; Osmaston Manor Stancliffe Hall, Derbyshire; Oakley Park, Basingstoke; Singleton Park, Lancashire; Range-more Park, Burton-on-Trent; Gibbstown Park, Ireland; Highbury, Birmingham; Iwerne Minster Park, Dorsetshire; and Ashstead Park, Epsom.

In 1881 the Crystal Palace Company organised a School of Gardening, of which Mr. Milner was asked to be the Principal. He undertook the work in connection with his son, Mr. Henry Milner, who, having been his principal assistant for several years, was now taken into partnership. Mr. Milner's teaching must leave a stamp on the coming younger members who have received their landscape gardening training in the school.

The Meather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON,

FOR THE WEEK ENDING WEDNESDAY, APRIL 2, 1884.												
b DAY.	BARON	ieter.	т	EMPI TI	ERAT HE A	URE JR.	OF	duc fr Glai Tabl	rome- l De- tions om sher's es 6th ition.	WIND.	-1	
MONTH AND DAY.	Mean Reading Reduced to 32° Fahr.	Departure from Average of 18 years.	Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 50 years.	Dew Point.	Degree of Humidity. Sat. = 100.	Average Direction.	RAINFALL	
Mar.	In,	In.	-								In.	
27	29 97	+0.20	42.0	37.0	5.0	38.9	- 38	33 3	82	E.N.E.	0.00	
28	29.92	+0.15	43 0	36.1	6.9	39.7	— 3·3	35-4	84 {	N.E.: E N.E.	0.00	
20	20,81	+0.06	17.5	38.0		41 ·S		36 6	83	N.E.	0.03	
30	29.62						+ 0.6	1		N E.	0.03	
			1						8s {	S. : S.S.E.	0 02	
April	29.37						+ 3.0				1	
1	29 47						+ 6.8		82	S.	0.00	
2	29.44	— a 3a	69.0	45.5	23 5	56.7	+ 12.3	47.6	72 {	S. : S.S.E.	0.02	
Mean	29.65	-0.10	52.4	39.9	12 4	45 6	+ 2.0	40.3	82	Vari'ble	0.07	

March 27.—Fine cold day and night.

28.—Fine cold day and night.

29.—Dull day and night.

30.—Little sun in morning. Dull day and night. Slight

- 30.—Interestal in normal.

- 3rain in evening.

- 3rt.—Slight rain in morning. Dull day and night.

- 3rt.—Fine bright day and night.

- 2.—Fine bright day averast at times. Lightning alf the evening. Slight rain at midnight.

LONDON: Atmospheric Pressure, — During the week ending March 29, the reading of the barometer at the level of the sea increased from 30.05 inches at at the legisling of the week to 30.12 inches by 9 A.M., and decreased to 30.10 inches by 9 A.M., on the 23d, increased to 30.17 inches by 9 A.M. on the 24th, decreased to 30.14 inches by 9 A.M. on the 24th, decreased to 30.14 inches by 9 A.M. increased to 30.15 inches by midnight on the same day, decreased 30.18 inches by midnight on the same day, decreased to 30.14 inches by 3 P.M. and increased to 30.15 inches by midnight on the 25th, decreased to 30.15 inches by 9 A.M. on the 25th, increased to 30.05 inches by 9 A.M. on the 25th, increased to 30.05 inches by 3 P.M. on the 25th, increased to 30.10 inches by midnight on the same day, and was 29.97 inches by the end of the week.

The mean reading of the barometer for the week at the level of the sea was 30.11 inches, being 0.08 inch higher than last week, and 0.16 inch above the average of the week.

Temperature. — The highest temperature in the shade in the week was 53°, on the 23d; the highest reached on the 27th was 42°. The mean of the

reached off the 2/th was 42. The mean of the seven high day temperatures was 46°.9

The lowest temperature was 35°, on the 25th; on the 23th the lowest temperature was 40°.5

The mean of the seven low night temperatures was 37°.3.

The greatest range of temperature in one day was $14^{\circ}.2$, on the 24th; the smallest was 5° , on the 27th. The mean of the seven daily ranges was $9^{\circ}.6$. The mean temperatures were—on the 3d, $45^{\circ}.3$;

27(ii. The mean of the seven usiny ranges was 9.0. The mean temperatures were—on the 3d, 45°,3; on the 24th, 42°.8; on the 25th, 40°.2; on the 26th, 40°,4; on the 27th, 38°,9; on the 28th, 39°,7; and on the 29th, 41°,5; of these the first two were above their averages by 3°,3 and 0°,7, and the rest were below by 2°.1, 2°.1, 3°.8, 3°.3, and 1°.8 respectively.

tively.

The mean temperature was 41°.3, being 7°.9 lower than last week, and 1°.3 below the average of

lower than last week, and 1°,3 below the average of the week.

The highest reading of a thermometer with blackened bulb in vacuo placed in the full rays of the sun was 103°,5, on the 24th. The mean of the seven readings was 76°.6.

The lowest reading of a thermometer with its bulb placed on grass was 25°, on the 24th and 25th. The mean of the seven readings was 29°.4.

Rain.—Rain fell on the 25th to the amount of 0.03 inch.

ENGLAND: Temperature,—During the week ending March 29 the highest temperatures were 59°, at Truro, 56°,2 at Plymouth, 54°,2 at Bristol; the highest at Sunderland was 48°,9, at Bolton 49°,1, and at Sheffield 50°. The general mean was 52°,5. The lowest temperatures in the week were 26°,8 at Cambridge, 27° at Hull, 28°,4 at Wolverhampton; the lowest at Blackheath was 35°, at Bradford 34°,8, and at Leeds and Sunderland 34°. The general mean was 32°,5.

was 31°.5.

The greatest ranges were 29° at Truro, 26°.6 at Cambridge, 24°.t at Nottingham; the smallest ranges were 14°.9 at Sunderland, 17°.4 at Bradford, and 18° at Blackheath and Leeds. The general mean was 2t°.

The mean of the seven high day temperatures was The mean of the seven high day temperatures was highest at Turto, 51°.3, at Plymouth 50°.2, and at Nottingham 49°; and was lowest at Bolton, 42°.8, at Sheffield 44°, and at Sunderland 44°.6. The general mean was 47°.1.

The mean of the seven low night temperatures was highest at Plymouth, 38°, at Brighton 37°.9, at Blackheath 37°.3; and was lowest at Hull, 31°.3, at Wolverhampton 32°.3, and at Bolton 33°.2. The general mean was 35°.3.

The mean daily range of temperature was greatest at Hull, 16°.6, at Nottingham 15°.1, Cambridge 14°.7; and was least at Liverpool, 8°.5, at Sunderland 9°., and at Brighton and Blackheath 9°.6. The general mean was 11°.8.

mean was 11°,8.

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The mean temperature was highest at Truro and Plymouth, 42°.9, at Brighton 41°.5; and was lowest at Bolton, 37°.3, at Sheffield 37°.7; and at Wolverhampton 37°.9. The general mean was 40°.

Kain.—The largest fall was 0.12 inch at Preston, 0.09 inch at Sunderland, 0.03 inch at Blackheath; the smallest fall was 0.01 inch at Nottingham and Bradford. No rain fell at Truro, Plymouth, Bristol, Leicester, Cambridge, Wolverhampton, Sheffield, Liverpool, Bolton, or Leeds. The general mean fall was 0.02 inch. fall was 0.02 inch.

Scotland: Temperature,—During the week ending March 29, the highest temperature was 56°.3, at Edinhurgh; at Aherdeen the highest was 49°.7. The general mean was 53°.

The lowest temperature in the week was 28°, at Perth; at Greenock the lowest temperature was 34°.5. The general mean was 31°.1.

The mean temperature was highest at Glasgow and Edinburgh, 41°.4; and lowest at Perth, 39°.3. The general mean was 40°.6.

Rain.—The largest fall was 0.09 inch, at Greenock, and the smallest fall was 0.01 inch, at Edinburgh. The general mean fall was 0.01 inch, at Greenock and the smallest fall was 0.01 inch, at Greenock Glasgow, Dundee, Leith, or Paisley.

Glasgow, Dundee, Leith, or Paisley.

JAMES GLAISHER, F.R.S.

Enquiries.

"He that questioneth much shall learn much,"-BACON.

TOBACCO CULTIVATION. — Can any of your readers give me the title of a work on the cultivation of Tobacco in South America? C. H.

Answers to Correspondents.

BOOKS: J. H. J. Published at about 10s., by Van Voorst, Paternoster Row.

GHENT SCHOOL OF HORTICULTURE: 7. Rowe. Write to Prof. Kickx, Director of the School of Horticulture, Botanic Garden, Gheut.

LAZED FLOWER-POTS: T. Hewitt & Co. Try Messrs. Doulton & Co., Albert Embankment, Lambeth, S.E.

Doulton & Co., Albert Embankment, Lambeth, S.E.

Melons and Peaches: Subscriber. To have Melons
ripe early in September, you must sow the first week
in June, and in the case of very large varieties even
earlier than that. The weather will exercise much influence in forwarding or retarding the maturing of the
crop, and a constant and regular bottom-heat of 85
must be maintained from first to last. Peach trees
under glass require regular attention as to watering.
Soak thoroughly when started, see that they are well
watered previous to the flowers opening; water again
when the fruit is thinned, and at intervals, when required up to the colouring period. Well made porous
borders for the Peach want frequent watering, stift,
adhesive, ill-drained borders much less; and do not let
a border get dry in autumn and winter.

NAMSS of PLANTS: *F.E.* The Red Cedar Unit.

adhesive, ill-drained borders much less; and do not let a border get dry in autumn and winter.

NAMES OF PLANTS: T. F. E. The Red Cedar (Juniperus virginiana).—G. Batten. Your Rhododendron appears to be a hybrid between R. ciliatum and R. formosum, and we cannot say if it has been aamed.—A. P., Tembury. Astrantia maxima.—C. P. Catt. Trachystemon orientalis, an escape from gardens. It was figured in our vol. kiv., p. 17.—S. T. M. I. Not recognised; 2, Iberis coriilolia; 3, Pelargonium, probably Rollisson's Unique; 4, Ionopsidium acaule.— Yohn Leman. Ornithogalum umbellatum.—W. Craik. I. Deudrobium imbriatum oculatum; 2, Ccologyue Cummingii; 3, Leptotes bicolor.—Y. Earl. Lycaste Skinueri, Vanda tricolor, and V. tricolor insignis, are correctly named; the Mexican plant is Maxillaria uniflora.—H. M. H. I., Dendrobium nobile; 2, D. nobile, probably the Burmese variety; 3, D. Linawianum.—T. Catark. Doronicum columnæ and Eranthemum auro-creticulatum.—H. C. I., Vriesia pisttacina; 2, Antirrhirum assarina; 3, Eabiana stricta; 4, Cotyledon retusa?; 5, Abulion vexillarium; 6, Erica carnea; 7, E. carnea vat. mediterranea.—H. H. K. I., Asclepias curassavica; 7, Philanthus nivosus; 3, Erica vernix.—L. S. A. I., Gasteria verrucosa; 2, Manillaria pusilla?; 3, Cercus serpentinus; 4, Aloc frutescens; 5, Salvia hybrid?; 6, no fruit.—G. H. I., Fuchsia splendens; 2, Mousoa incias; 3, Nephrodium velutiamu.—I. Fatteriospora ericoides of gardens; 2, S. E. Wangeriana of gardens, a state of Thuia occidentalis.—E. F. A. Adiantum cuneatum; 2, Anthurium leuconeurum; 3, Sclagianella, no fruit; 4, Trichopilia suavis.—S. E. C.

Narcissus incomparabilis albus plenus sulphureus, of Mr. Barr, the "Codlings and Cream" of the old authors, Sulphur Crown of the Dutch florists, and Sulphur Phoenix of some English growers.— $W.\mathcal{F}$. Arcrissus Pseudo Narcissus var. Hudbras.

NAMES OF FRUIT: W. Foster. Cluster, or Twin-cluster Golden Pippin.—J. Day. Pear: Catillac. Apples: 1, Beauty of Kent. The other varieties were too much bruised for identification.

NARCISSUS: C. M. O. We do not quite understand your question. We see no tufts on the tips of the perianth segments.

PLANTS IN FLOWER: A. M. C. 7. C. Many thanks; but we regret we have not room.

POTATO: E. Fox. A very good example of the kind, showing how new growth takes place at the expense of the food materials stored up in the old tuber. Although new growth has taken place, there is, of course, no increase in weight, as there is no means of the new growth obtaining supplies of food other than those supplied in the old tuber.

WELLINGTONIA: James Hope. Fungus was, no doubt, the cause of death. In the bark sent there is plenty of spawn, probably of some species of Polyporus, and very likely derived from the old Elm roots, which should have been removed.

WHITE ARUM: G. C. Maynard. Double-spathed Arum are not at all uncommon now-a-days, try to fix it. You should

** All communications intended for publication should be addressed to the "Editor," and not to the Publisher or to any member of the staff personally. The Editor would also be obliged by such communications being uritten on en side only of the paper and sent as early in the week as possible. Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

**FOREIGN SUBSCRIBERS sending Post-Office Orders are requested to send them to the Publisher of this journal, 41, Wellington Street, Covent Garden, and to make them payable to William Richards, at the Post Office, Druy Lane, London, W.C.

CATALOGUES RECEIVED.

KEYNES, WILLIAMS & Co., Salisbury — Dahlias, Verbenas, New Roses, &c.
W. J. EFFS, Knigwood, Hants—Sclected Peat,
PRINGLE & HORSPORD, Charlotte, Vermont, U.S.A.—
North American Perennials, Tree Sceds, &c.

COMMUNICATIONS RECRIVED.—F. T.—G. LAWSOO.—J. S.—W. B. E.—G. H.—J. V. & S.—H. W.—J. T. R.—H. E.—R. D.—J. J. W.—W. H.—T. C.—Kelway & Son.—J. G. D.—P. Joseph-Lafosse (next week).—Dr. Paterson.—W. E.—A. Van Geert (many thanks)—H. J. V.—W. B. H. (under consideration).—J. Rust (many thanks. Io the hands of the engraver).—Lechertier Barbe et Cie.—C. P.—E. M.—C. W. D.,—A. Cole,

Markets.

COVENT GARDEN, April 3.

[This subjoined reports are furtished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list weekly, and are responsible for the quotations. It must be remembered that these quotations are averages for the week preceding the date of our report. The prices fluctuate, not only from day to day, but often several times in one day, and therefore the prices que day averages for the past week must not be taken as indicating the price at any particular date, still less can they be taken as guides to the price in the coming week. Eo.]

THERE is no alteration to quote, the market being dull, with heavy supplies. New Grapes are to hand, but meet with little demand, the old samples being still good. James Webber, Wholesale Apple Market.

FRUIT .-- AVERAGE WHOLESALE PRICES.

FRUIT.—AVERAGE WINDESALE FRUES.

5. d. 5. d.

Apples, ½-sieve . 10 - 5 o

Cobs, per 100 lb..125 0.150 o

— St. Michael's, each 2 o - 8 o

Grapes, per lb. . 8 0 - 10 o

Strawberries, per lb. 4 0-12 o

Lemons, per case. . 10 0 - 14 o

VEGETABLES. — AVERAGE RETAIL PRICES.									
Articheles	Garlie, per lb								
Endive, French, per	- New 1 3								

ATOS.—Kent Magnums, 8os. to 100s. per ton; do., Regents, 8os. to 100s.; Champious, 5os. to 65s.—New: Jersey, 15, lb.; French, 6d lb.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

s. d. s. d.	s, d, s. d.
Aralia Sieboldi, doz. 12 0-24 0	Ferns, in variety, per
Arbor-vitæ (golden),	dozen 4 o-18 o
per dozen 6 o-18 o	Ficus elastica, each i 6- 7 0
- (common), dozen 6 0-12 0	Falson District, each 1 04 7 B
Avera Lilias Janes 0	Foliage Plants, vari-
Arum Lilies, dozen 8 0-12 0	ous, each 2 o-10 o
Azaleas, each 2 6-5 D	Geoista, per dozen o o-18 o
Begonias, per doz 6 c-12 D	Hyacinths, per doz. 6 p- 9 o
Bouvardias, doz12 o-18 o	Lily of the Val., pot 1 0- 1 6
Cinerarias, per doz. 8 p-12 p	Marguerite Daisy,
Cyclamen, per doz 12 0-30 0	per dozeu12 0-18 o
- Extra size, each 5 o-10 p	Manual
	Myrtles, per doz 6 c-12 o
Cyperus, per dozen 6 o-12 o	Narcissus, per dozen 9 c-12 0
Dracæoa term. doz30 0-60 0	Palms in var., each 2 6-21 o
- viridis, per doz 12 0-24 0	Pelargoniums (show)
Erica, various, doz. 9 0-24 0	per dozen 12 0-24 0
Euonymus, various,	- scarlet, per doz 4 o zz o
per dozen 9 p-18 o	Deinvole minute man
Evergreess in	Primula, single, per
Evergreens, in var.,	dozen 40-60
per doze 6 0-24 0	Tulips, per dozen 6 0- 9 0

CUT FLOWERS .- AVERAGE WHOLESALE PRICES.

.* These prices cannot be relied on for Easter week.

SEEDS.

SEEDS.

London: April 2..—The attendance of buyers on to-day's market was somewhat thin, and the business doing small. For Clower seeds there is a steady request at unchanged rates. The feeling for Alsike shows some improvement, some seed having been reshipped to Hamburg. Trefols continue exceedingly cheap. There is a better sale for both perennial and Italian Rye-grasses. Spring Tares realise fall values. There is no alteration this week in bird seeds. Scarlet Runner Beans are offering on very low terms. Yohn Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.

CORN.

CORN.

At Mark Lane on Monday English Wheat barely supported the previous Monday's prices, and where sales of foreign were effected they showed 1s. decline. Flour also was saleable only on easier terms for buyers. Malting Barley was inactive and unchanged in value. Grinding descriptions were barely so well supported as recently. Beans were steady in value, with a moderate demand Peas were rather scaree, and 1st. dearer. Oats, with moderate receipts, were rather firmer, and Maize was very slack, and fully 6d. lower. On Wednesday there was little or no demand, and prices were nominal, but to have effected sales of either Wheat or flour lower rates must have been taken. Barley was flat. Beans and Peas were unaltered in value. For Maize prices were drooping. Oats were quiet, and receipts moderate. Average prices of corn for the week ending March 20; —Wheat, 30s. 1d.; Barley, 31s. 3d.; Oats, 19s. 1od. For the corresponding week last year: —Wheat, 42s.; Barley, 33s. 1d.; Oats, 21s. 9d.

CATTLE,

CATTLE.

At Copenhapen Fields on Monday very little chauge was observable in the beast market. Sales progressed slowly, at about previous rates to rather under. In foreign Danish realised 4s. 6d. to 5s. 4d.; and Swedish were quoted 4s. to 4s. 6d. Sheep sold rather unevenly, but mostly rather worse than on Thursday last. Lambs sold at 8s. to 8s. 8d. English calves brought about late rates; Danish and Swedish showed prices in favour of buyers. Pigs met little or no demand. Quotations:—Beasts, 4s. to 5s. 2d., and 5s. to 6s. 8d.; calves, 5s. to 6s. 1od.; sheep, 5s. to 5s. 6d., and 6s. to 6s. 8d.; calves, 5s. to 6s. 1od.; sheep, 5s. to 5s. 6d., and 6s. to 6s. 8d.; calves as were difficult to move at Monday's prices. Sheep were quiet, and lambs sold less freely, whilst calves and pigs were about the same.

HAY.

HAY.

Tuesday's Whitechapel Market report states that supplies were large, and best qualities of hay and Clover in demand. Quotations:—Frime old Clover, 955, to 1075.; inferior, 605, to 755.; prime second cut, 905, to 1055.; best meadow hay, 805, to 875, inferior, 405, to 655, and straw, 285, to 375, per load.—On Thursday three same same moderate supply. The trade was quiet at Tuesday's rates.—Cumberland Market quotations:—Superior meadow hay, 845, to 924, inferior, 605, to 7445; superior Clover, 1055, to 1145, inferior, 705, to 845, ; and straw, 345, to 385, per load.

POTATOS.

The average prices during the week have been:— Magnum Bonums, 60s. to 90s.; Champions, 40s. to 65s.; Roses, 60s. per ton; and Snowflakes (foreign), 4s. do. to 5s. 6d. per bag.—The imports into London last week consisted of 10 bags from Hamburg, 10 bags from Boulogne, and 298 sacks from St. Nazaire.

NATIVE

GUANO.

Extracts from the Eighth Annual Collection of Testimonials from persons who have used this Manure for Farm and Garden Crops:-

VEGETABLES, VINES, FRUIT,

KITCHEN GARDEN CROPS.

a. F. BARRON, Repat Hart cultural Society, Chiswick, De ember 12, 1833 - "Used for Cabbages, Celeny, Timatols, and other green Vegetables, also on Lawn Grass. Results - V-vy favourable, manifest improvement wherever used, the foliace assuming a much deeper colour, and growth extended. Without doubt a very valuable manure, and one easy of application."

HY. CLARK, Ilead Gardener to His Grace the Duke of Marlborough, Elenheim Palace Gardens, Woodstock, December 14, 183.—" Used for Plantgrowing, Frunt-growing, Jas for Vegetables. Results:—Very satisfactory. For cheapness and general use your manure is invaluable."

general use your manure is invaluable."

JAMES DART, Gardener to the Right Hon. Lerd Carlingford, K.P., The Priory, Chewton Mentify, Eath, Detember 17, One to, Best, Peas, Pease, Celery, and many other things. I used no other manure but yours, and could tell to a foot where it was used, for or wet. I grow many kinds of Petatos, and my garren is very poor ground. Last spring I bought 12 lb, of White Elephatt Potato Seed, and when they were up 8 inches high I sprinkled some of your Course of the towns, the high I sprinkled some of your Course of the Petatos as one could with for. I lave been the late Courses Waldegrave's and Lord Calingford's Head Gardener at Strawsberry Hill, Twickersham, and here at The Priory for just twerty-eight years, and in that time I have used many kinds of artificial manures, but none has given me the satisfaction your Native Ginano has, and I intend to have more later on."

THOS. CARLITON, Gardners to Six, C. H. Mills, Bart, Wildeness Fask Gardens, Sevenada, February 4, 1834.
Wildeness Fask Gardens, Sevenada, February 4, 1834.
Wildeness Fask Gardens, Sevenada, February 4, 1834.
For some years until last spring, when I applied two dressings of presented teelf, and the fruit was much larger in burnch and berry than had been the case for some few years. I attribute these good results to the Native Manure. I have also used it for Cauliflowers, Peas, &c., and have no hesitation in saying that the result was viry apparent in all cases where applied."

ALEXANDER BISSET, Gardener to Str J. Whittaker Ellis, Bart, Epfret, December 19, 1883,—"Used for Grape Vines, Orchard House Culture, and Katchen Garden Crowner, Orchard House Culture, and Katchen Garden Crowner, or the strength of the str

EDWARD PEARS, Gardener to Mrs. Jerone, Holland House, Sutton Coldfield, December 14, 1883.—"Used for Potatos, Onions, Celery, Cucumbers, Melons, Grape Vines, and Pot Plants. For Potatos and Onions I used, on the average, 5 ceth, per acre: not bawing need your Native Guano before, 1 was afraid to give too much. Results:—Potatos and Onious, avery good crop indeed; Celery, very fine, gave it a little ach time of earthing up; Cucumbers and Melons, I find your Guano unit those first-rate; it does not burn the roots, no one need four using it. I had some splendid well-finished fruit. Grape Garden up of the commerce of the control of t

SWEDES, MANGELS, &c.

JAS. DAVENPORT, Meaford Hall Farm, near Stone, December 13, 1833—" Used for Swede Turnips at the rate of octu, per acre. Kesults: "About 25 tons of good sound roots to the sere. My roots were sounder than some in another field, with farmyard manure applied at time of sowing. Farmyard with farmyard in a form of the sowing to the sere. Should say it is a useful manure, and cheap."

RICHARD FOWLER, Broughton, Aylesbury, December 12, 1883 - Used for Swedes, at the rate of 5 cwt. per acre. Results:-Very good."

JOHN BETTLEY, Described Farm, Barton, Oxford, December 18, 1833.— "Used for Turnips and Swedes, at the rate of 3 cut. per acre. Results: -Excellen, giving every satisfaction. I think your Native Gnano a capital mixture, and quite recommend it, more especially when mixed with a little superrecommen phosphate

CHARLES FEESON, Glovy Farm, Pentt, Amersham, Bucks, December 16, 1883.—"Used for Swedes and Mangel Wurzel, at the rate of 4 cwt. per acre for Swedes, with bursals, and 6 cwt. for Mangels, with ditto. Results:—Swedes very fine crop and large rosts; Mangels very good plant and large roots. I have used Native Guano for years, and have been every successful in taking prizes with roots grown where I applied it. I have taken Five First Prizes this year, 1883, being first in all the classes I showed in."

JAMES KITLEV, Farm Steward to the Rt. Hoo. the Earl of Derby, Wittley Park, Haslemere, Surrey, December 14, 1882.—"Used for Tares, at the rate of 4 to 6 evt. per acre. Results:—Very good; could see to an inch where the land was not sown. No other manure was used, The Native Guano was harrowed in with the seed, and I am well satisfied with the results,"

GEORGE STONE, Cashio Bridge Farm, Watford, Sanuary 1, 1884.—'' Used for Swedes. Results:—I was well sanuarished with the Native Guano. I used 5 to 6 ewt. to the acre; my Swedes were very good indeed. Send me 3 tons more; I shall give it another trial.''

GEO. STRATTON, Princes Risborough, December 13, 1883;—"Used for Mangels, at the tate of 3 cwt. per acre. Results:—A very good crop. I have always had a good crop of Mangels after using the Aylesbury Native Gunno."

H. WYATT, Walton Grange, Aylesbury, December 14, 1883
—"At the Royal and Central Fucks Agricultural Show, held at
Great Marlow in September 18st, I was awarded the First Prize,
value £10, for the best general crop of roots of not less than 10
acres. And at the same show I was also awarded the First
Prize, value £5, for the best crop of roots of not less than 5;
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Area of the Best crop of roots of not less than 5;

JOHN COX, Combi Farm, Highenden, December 18, 183, -- "Used for Mangel Wursel and Swedes, at the rate of 5 cut. per acre. Result: --One-fourth extra produce. I consider the builts were much finer, and cleaner growth, and generally sound:"

JOSEPH HUTCHINGS, Kerest Farm, Hanslope, December 20, 1883.—" Used for a crop of Swedes, at the rate of 5 cwt, per ance. "Ten to twelve loads of yard-manuer, sown broadcast. Results:—The Native Guano, where sown, has given me great satisfaction. I hope to be a customer bext season."

GRAIN, GRASS, POTATOS, &c.

AUSTIN BUTLIN, The Woodlands, Shipton, Lee, December 18, 1881.—"Used for Mangels, drilled under the seed on the flat. The land was manured from the farmyard in the antumn. Oats with Clover-seeds top-dressed at the rate of 4 cwt. per acre. Results:—Oats and Mangels, good. I never had a more promising crop of young Clover. I think it a good manure at the price."

ROBT. KEENE, Emmington, Telsworth, December 1, 1883.—"Used for Mangels and Uats, at the rate of 7 cwt per acre. Results:—Both crops remarkably good."

Rev. C. SOAMES, Mildenhall, December 14, 1883.—
"Used for Oats, Mangel Wurzel, Potatos. Results:—Uats very good, Mangel ditto."

D. T. and W. H. BYFORD, Carshallon, Surrey, January 5, 1834.—"Used for Oats at the rate of 8 ew, per acre. See the second of the

L. T. HAVNES, Upper Heylord Fanuary 15, 1884— Upper Heylord for Oats, Wheat, and Potatos, at the rate of 4 cwt. per acceptable per per per service. Wheat, and act statistics with the manure on the Oat cropped with the manure on the Oat cropped.

GEO. COOPER, Kingswood Lane Farm, near Aylesbury, January 2, 1884.—" Used for Wheat at the rate of 5 cwt. per acre. Results:—Had a very good crop of Wheat."

C. B. SELL, Leighton Buzzard, December 18, 1883—
"Used for Barley at the rate of about 4 cwt, per acre. Results, and Good. Your Native Cuano 1 believe good for top-dressing, and only requires a trial amongst our market gardeners to come into general use. The difficult is persuading people to give it a trial. You must give each gardener a bag and ask them to try it and give you their opinion.

J. SIMMS, Wellington Terrace, Avlesbury, December 17, 183—"Used for grass at the tate of 5 cost, per acre, Results 7 cost, and the state of 5 cost, per acre, Results 7 cost, and the state of 5 cos

JOSEPH FRANKLIN, Scottgrove, Thame, December 27, 1883 — "Used on old pasture at the rate of 6 cwt per acre. Results:—A good crop of hay. I consider the A B C Manure, if applied on grass land early in the spring, a good manure and showing good results."

JOHN COLLEDGE, Palsher!, Hill Form, December 21, 883,—"Used for grass and Pot-ar, and garden produce generally, at the rate of 6 owt, per acres and garden produce Protatos, Results:—Grass, fair crop; Potatos and Onions, good. The early part of the season was not favourable for artificial manures, dry east winds prevailing."

At the Birmingham Show TWO SILVER CUPS and NINETEEN PRIZES were taken by EXHIBITORS who use NATIVE GUANO.

Price, £3 10s. per Ton, in Bags, at the Railway Station, Aylesbury.

Pamphlets of Testimonials and all other particulars may be obtained on application to the SECRETARY,

COMPANY, GUANO LIMITED. 29. NEW BRIDGE STREET, BLACKFRIARS, LONDON, E.C.

THE THAMES BANK IRON COMPANY.

UPPER GROUND STREET, LONDON,

Have the Largest and most Complete Stock in the Trade.

Silver Medals

Awarded May 22, 1883.

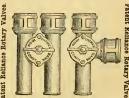
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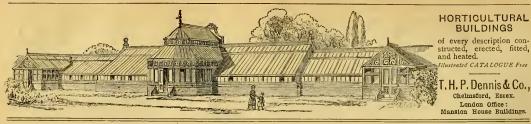
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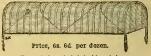
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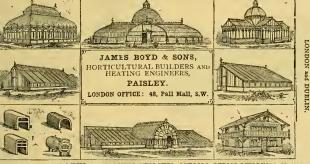
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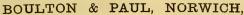
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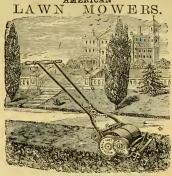
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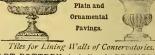
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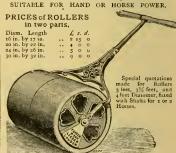
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The Valuable FREEHOLD PROPERTY, known as the YICTORIA NURSERY, Dyke Road, Brighton—The Property of the State of the Polyage of the Property Station, and has a frontage of 120 feet to the Dyke Road, with numerons Glasshouses, Forcing-Pits, Two-stall Stable and Caachhouse, and an Office and Store-room erected thereon. The purchaser will have the opion of taking the begiven on completion of the purchase. Possession will be given on completion of the purchase. Some of the purchase of the State
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THE LIVERPOOL HORTICULTURAL CO. (JOHN COWAN). Limited, owing to the great increase in the other beauties, are prepared to LEASE their whose the content of their business, are prepared to LEASE their whose the content of their business, are prepared to LEASE their whose the content of their business, are prepared to LEASE their whose the content of their business. For expression of the Horizoultural Building and Heating Business. Machinery and Stock to be taken at valuation. This affords an excellent opportunity for any one who may be inclined to emburk in this business. Full particulars on application to the MANAGER, The Vineyard, Garston, Liverpool.

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The above has been worked for the past ten years by a Market

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The Buildings are all new, and consist of an excellent Residence, Two Uottages, Large Onion and Seed Sheds, with Stables, Cart Sheds, &c.
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Five large houses and various frames in our nursery contain a fine collection of the most useful and showy plants in cultivation of these classes. CATALOGUES free for stamps.

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Reliable always. M. a. Dickson I key. The Queen's Seedsmen, CHESTER.

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PLANTS, ALPINES, &c, 100 sorts, selections at 21s,

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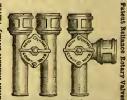
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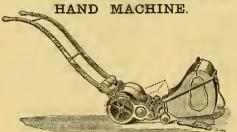


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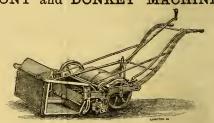
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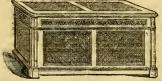
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seed, or does it indicate some effect of climate still existing, or which did once exist, and by virtue of which growth was stimulated at this unusual period? In any case it is a marked character of the plant, which owes its state-liness to this peculiarity; and it is one, moreover, that is sometimes enhanced by repetition. Miller mentions some dozen or more varieties, but we doubt whether we could find as many now, though we still have deep and pale coloured varieties, from pale yellow to deep redvarieties with variegated leaves, besides those before-mentioned. Assuredly it is a grand plant, but for reasons we need not repeat it will not do for cutting, and, therefore, is not likely to find favour with modern gardeners or their employers. The best method of culture is to lift the bulbs when the leaves are withered in summer, leave them to dry, and replant in autumn in light but rich well-drained soil.



CALANTHE PROBOSCIDEA, n. sp.*

A NEW Calanthe, imported from the Sunda Islands, by Messrs. J. Veitch & Sons. It stands nearest C. fur cata, Bat., but its great feature is, that the anterior part of column is bent down in a curve, like the snout of certain insects. The very short nail of the lip descends, and the great blade of the lip stands under a right angle with it, having four laciniæ, the superior ones being a little narrower, all contiguous at the sides. The anterior ones are separate by a deep sinus in the middle. A system of calli stands at the base, very like that of Calanthe furcata, but they are looser in front where they are broken up into papular bodies. The hairy spur is curved, and nearly equal to the hairy Its apex is sometimes oblique, sometimes a little bilobed, and usually with lobes of unequal length. The flowers of the present edition are a very little smaller than those of Cattleya furcata. Their colour is white, changing to lightest ochre. The calli are fine vermilion; there is a vermilion borse-shoe-like mark painted at the place of calli outside. Whether it is constant for the lip's blade to be bent upwards I of course do not know. H. G. Rehb, f.

CYPRIPEDIUM PORPHYROCHLAMYS, n. hyb. Art.

To me this is a very nice flower. It is one of the innumerable horticultural children of Mr. Seden, and was kindly sent me by Mr. H. Veitch. It is raised from Cypripedium barbatum biflorum and birsutissimum. Leaf linear ligulate, very acute. sepal transverse, blunt, elliptical, very shining as petals, with much projecting nerves, reddish-purple with white borders. The latteral sepals are a triangular greenish body, not equal in length to the lip. Petals descending, broad, ligulate, blunt acute, with some small undulations at the base outside and inside, yellowish at the base, with innumerable small freckles of purest mauve-purple (far superior to that of the upper sepal) on exterior half. Lip of C. barbatum, but colour better. Staminode nearly of C. barbatum.

I regard this a very good thing. It offers a good deal of the charms of Cypripedium hirsutissimum, though it has much more of its colours than of its forms. As to Cypripedium hirsutissimum I would, indeed, nuch like one or a few fresh flowers, I never having sketched it myself. Mr. Day alone supplied me with wild materials. My seventeen garden flowers would be regarded signs of an alarming superficiality by some who are now in the trade. At least three new species, which some might name in their own honour with their own on ame, might be established. Luckily the Cypripedium hirsultisamum may reappear upon the market when the imminent protest against the application of names of individuals for indifferent varieties may have some transitions. varieties may have swept away numerous superfluous names and the propensity for such ephemeral creations. II. G. Rchb. t

a Clanthe probecidea, u. sp.—Aff. C. furcata, Bat. Labelli LacCailantie probecidea, u. sp.—Aff. C. furcata, Bat. Labelli LacCailantie quaternis lateraliter contiguis, superioribus angustionic contiguis and contiguistic probecides and participated probability and probecides and probability columna actice proboscideo deflexa; u. participated probability and probabil

HYBRID CAPE GLADIOLI.

DURING the past winter I have been busily engaged in working out the characters of the Cape Iridaceæ for Mr. Thiselton Dyer's continuation of Harvey and Sonder's Flora Capensis-a task which I am glad to say is now finished. I am wishful to devote about a page to defining briefly the names which have been given in Latin to the hybrid types of Cape Gladioli, but I have so little practical acquaintance with them that I am greatly afraid of blundering. Would you, therefore, oblige me by printing the rough draft I have sketched out, with a view of asking the criticism of specialists upon it before it is put into book form?

The hybrid types of primary importance which have originated from Cape species, to which Latin names have been given, are the following :-

1. G. gandavensis (figured Flore des Serres, tome 2, liv. 3, t. 1, in which the psittacinus element strongly predominates). - The flower is just the shape and size of that of psittacinus, but the red is purer and brighter, instead of heing mixed with yellow, in fine lines and dots. (I want a short definition to explain how brenchles ensis may be distinguished from psittacinus.)

 G. citrinus (figured Flore des Serres, tab. 539).
 Flower the shape of that of psittacinus, but bright yellow. (How has this originated?) There is also a plant called gandavensis albus, with a white flower.

3. G. Wilmoreanus (figured Flore des Serres, tab. 639).—Said to be a hybrid between gaodavensis and oppositisforus, an idea which its characters support. Flower the shape of that of psittacinus, white with radiating streaks of pink.

4. G. ramosus (figured Paxton's Magazine, vol. vi., p. 99).—A type in which the blandus element pre-dominates; said to be a hybrid between cardinalis and oppositiflorus. Flower pink, with dark blotches at the base of the three lower segments. A closely allied type is G. Spofforthianus, raised by Herbert

by crossing cardinalis with blandus.
5. G. pudibundus (figured Faxton's Magazine, vol. ii., p. 97).—A type allied to G. floribuodus, Jacq., with erect pink-white flowers, with obovate segments, with a faint darker blotch at the base of the three lower.

6. G. Colvilles (figured in Sweet, Brit. Flow, Gard., 155).—Raised from seeds of tristis var. concolor, fertilised with the pollen of cardinalis. bright scarlet, with oblong acute segments, with a lanceolate blotch of bright yellow at the throat of the three lower ones.

The following are hybrid types, of much smaller horticultural importance, to which Latin pames have been given, viz. :-

7. G. Mitchamensis .- Hybrid between tristis and hirsutus; figured by Herbert in the Transactions of the Horticultural Society, vol. iv., t. 2.

8. G. rigidus .- Hybrid between tristis and blandus; figured in the same plate as the last.

9. G. propinquus. - Between floribundus and blandus, which are two species very closely allied to

begin with begin with fragrans.—Between recurvus and tristis, 10. G. fragrans.—Between recurvus and tristis, which are also very closely allied.

Parlackianus and delicatus.**—Between recurvus and tristis.**

tween recurvus and blandus. 13. G. Herbertianus .- Between tristis and Spof-

fortbianus. 14. G. odoratus. - Between birsutus and Spof-

forthianus. 15 and 16. G. candidus and incarnatus.-Between blandus and cardinalis.

Into some of the hybrids of recent origin I believe

G. cruentus and Saundersii enter.

The plates in the Floral Magazine that represent hybrid Gladioli are as follows, viz. :-Old series-36, 77, 123, 171, 184, 222, 266, 315, 363, 364, 405, 419, 463, 464, 507, 508, 556. New series—43, 102, 295, 296. J. G. Baker.

GARDENERS AND FORESTRY. - Forestry is at last beginning to obtain the attention in England that it deserves; but at present it has no recognition in the ordinary exhibitions connected with the culture of the ground. Neither agricultural societies nor horticultural societies, as a rule, offer prizes in arboriculture. The subject seems to belong to the horticultural societies, as arboriculture is certainly, in many cases, a part of a gardener's duty. Bedfordshine

BELRATH BURY.

ABOUT 11 mile from Kells, in Co. Meath, stands Belrath Bury, the commodious residence of C. A. Nicholson, Esq. It is a fine substantial dwelling, recently built by its present owner, who (since he became possessor) has done so much in improving the estate generally. From the principal entrance on the Kells road is a winding carriage-drive, on each side of which are planted choice Coniferæ, Rhododendrons in variety, the latter in fine condition, and literally covered with flower-buds, and intermixed with them are fine examples of forest trees The mansion is oblong in form, and the principal entrance is from the north, in front of which, on a rising piece of ground, is the flower garden, laid out in good-sized beds, and interspersed with gravel paths, which does not show off the colours so well as if grass had been employed; but the beds being large, and immense masses of separate colours used, the effect in a short time will doubtless be very fine. More than 70,000 spring bedding plants were put out last autumn, and the winter having been so mild, very lew of them have succumbed. Most noticeable now is a large bed of Valeriana Phu aurea, the bright yellow foliage of which is very effective; Erica carnea is also very showy, and Webb's Giant Primroses and Polyanthuses have been in bloom all the winter. Other plants in use for spriog effect are Blood-red and Bel-voir Castle Wallflowers, Primroses (double and single), Sedums, Saxifrages, Alyssum saxatile, Doronicums, Violas of sorts, Ajugas, &c., the whole being arranged so as to give fine masses of colour in their respective varieties.

The kitchen garden, about 3 acres in extent, lies to the north and east of the flower garden, and is in two divisions, the upper one containing the glassbouses, pits, &c., which consist of a large show-house, T-shaped, 55 feet long, and of proportionate width, and 30 feet high, filled with a general collection of fine-foliaged and flowering plants both in pots and planted Noticeable among the pot-plants are some nice half-specimen Azaleas, well bloomed, and in good condition; fine plants of a good variety of the popular Clivia (Imantophyllum) miniatum, finely bloomed; Epacris, Cytisus, Arums, Cinerarias, Deutzias, Epacris, Cytisus, Arums, Cinerarias, Deutzias, Spiraeas, Primulas, Begonias, &c. In the centre of this house is planted out a magnificent specimen of Camellia alba plena, 14 feet high and 15 feet through, which this season carried upwards of a thousand blooms, and four times that number of buds were thinned from it. On either side of this is a red Camellia, each about 10 feet bigh, and well furnished. A great variety of creepers adorn the roof and supporting pillars of this capacious structure, some being in bloom at the time of our last visit (March 14), and included Clematis indivisa lobata, which hanging from the roof gives the appearance of wreaths of Paris Daisies; Habrothamous elegans (very fine), Acacia Riceana, A. Chandleri, Lasiandra macrantha, Bignonias of sorts, Hibbertia dentata, Clianthus puniceus, C. magnificus, Tacsonia exoniensis, T. Van Volxemi, Lapagerias (red and white), Chorozemas, and Mandevilla snaveolens, as well as a selection of climbing Tea Roses, &c.

No. 2 is a range of plant-houses, stove, intermediate-house, and greenhouse, all filled with healthy young plants, including a good strain of Cyclamen persicum, some of the plants in 6-inch pots carrying upwards of three dozen fine blooms. A collection of Orchids is also being formed, and although growing in houses along with other plants they seem quite at home with the treatment given them by Mr. Kettlewell.

No. 3 is a forcing-house, filled at present with Gardenias, Ixoras, Amaryllis, &c., while against the back wall are some Fig trees, planted in a prepared border, which annually give a good yield of frult. The remaining houses consist of vineries, Peachhouse, and fernery, and a greenhouse, the roof of which is covered with a fine Marechal Niel Rose in good condition. Planted out in a heated pit is a fine batch of white Arums, from which dozens of very large blooms are being cut, and, judging from the healthy appearance of the plants, they will continue to throw up their spathes for some considerable time. In another of these pits were a fine healthy lot of cool Orchids, including Disa grandiflora, Odontoglossums, &c.

In the kitchen garden is a fine plot of Read's new hearting Borecole, which is bighly spoken of by Mr. Kettlewell, and gives great satisfaction when cooked.

Passing through the kitchen garden we come to the new pleasure grounds, 3 acres in extent, which have been made during the last three years, and are made up of beds and borders of various sizes and shapes, each planted with shrubs and plants in variety. The collection of herbaceous subjects consists of close upon 500 species and varieties, all named, the labels used being those manufactured by Mr. Smith, of Stratfordon-Avon, and which, besides being imperishable, have a neat appearance. Noticeable in bloom at present are Lithospermum prostratum, very effective on rockwork, Iris stylosa, I. reticulata, several Helleborus, Primula rosea, spring Snowflake, Grape Hyacinths, Anemone apennina (blue), A. palmata (yellow), A. coronaria, various Narcissi, Omphatodes verna, Doronicums, Aubrietias, Scilla sibirica, S. taurica, Primroses; and among shrubs are Andromeda floribunda, Daphne Mezereum and the variety alba, Cytisus sempervireus, Polygala chamæbuxus, The gravel paths throughout this delightful

buds. Instead of returning through the kitchen garden we pass along a shady walk, the banks of which are now very pretty with Anemones, Daffodils, Crocus, and various other hardy plants, naturalised, and which have a charming effect. We cross the carriage drive to the south front, where again Snowdrops, Crocus, Daffodils, &c., are planted in the grass with fine effect, and here are large breadths of Ghent Azaleas, St. John's Wort, hardy Heaths, &c., while further down is the little church, against the side of which was a plant of Coronilla glauca in bloom, which had been out-of-doors about two years. Many other tender plants are also left outside, including Choisya ternata, Woodwardia radicans, &c.; but during severe weather these, as well as Tree Pæonias, Dicentra spectabilis, &c., are protected either with woollen nets or branches of Fir trees. A short distance across the deer park is the wild garden, planted with tall growing herbaceous plants, hardy Ferns, shrubs, &c. Altogether this extensive gardenment Act, 1866, at a cost, including expense of formation, of £310,000. The annual cost of maintenance of the parks (together with £9000 interest) It is believed that the parks amounts to £19,250. have contributed to the health of the neighbourhood. They are situated between one and two miles from the centre of the town, in easterly, westerly, and southerly directions. From the facts cited in the report alluded to, we find that the proportionate acreage of open space (park area) to town area in Glasgow is 1 in 13; the proportion in relation to population may be expressed by saying that there is 1 acre of park to 1293 persons, the total population being estimated at 578,156; and if we were to tack on the adjoining burghs, which are reaping all the benefits of open air enjoyment and promenade, it would swell up to 120,000 souls more. These burghs-namely, Govan, Partick, Kinning Park, Maryhill, Govan Hill, Pollokshaws, Hillhead, Pollokshiels and Pollokshiels East, and Cross Hill, have each a munici-



FIG. 90 .- THE GARDENER'S COTTAGE AT BELRATH BURY.

piece of ground are in our opinion much too narrow, being only 4 feet in width, but the more we wander about in them the more there appears to be seen, large beds of choice Rhododendrons, rockeries filled with alpines, hardy Orchids, &c., extensive borders of herbaccous plants, Rose heds—now a mixed shrubbery, then we look on a healthy young Wellingtonia or Picca, beds of Spirca Lindleyana and Deutzia Fortunei, golden Elder, which during the summer has a fine effect; and in a quiet corner stands the head gardener's house—and what a house it is !—not a miserable shed such as, I am sorry to say, a great many gardener's houses are, particularly on this side of the Channel, but a well built, comfortable, and substantial domicile (see fig. 90), having every convenience, besides being very pleasantly situated. It was recently built by the present owner of Belrath Bury.

Leaving this picturesque cottage we again pass on towards the kitchen garden, and leave a fine bank of Azalea mollis on the right; this bank is 100 yards long and 6 yards wide, and the plants, though young, are in a thriving condition, and well set with flowering establishment is kept in good order by Mr. Kettlewell, who has had charge of it for about three years. It may also be remarked that both Mr. aod Mrs. Nicholson take a great interest in their garden, and it must be satisfactory to them to know that their treasures are presided over by a practical and persevering man, thoroughly master of his profession. W. J. Ireland, Headfort Gardens.

THE GLASGOW PARKS.

REVERTING to our notes on the amount of open space available to the citizens of our large towns, we find that, according to the Fortieth Annual Report of the Registrar-General, Glasgow contains 6033 acres, and an estimated population in 1879 of 578,156. It has four parks, covering an area of 447 acres, about one-fourth of which is planted with trees, shrubs, and flowers. The parks were purchased by the Town Council of Glasgow as trustees under the Glasgow Public Parks Act, 1859, and the Glasgow Improve-

pality of their own, and are attached to the city proper as much as one street is to another, and each avails itself of the enjoyment of park promenading, to the no small discontent of the city taxpayers. The parks themselves are pretty equally divided, having the Glasgow Green in what might be called the east centre of the city, the Queen's Park in the south, Kelvin Grove Park in the west, and Alexandra Park in the extreme east. If there were to be any additional park it would fall to be made in the north side of the city, and although some proposals of this kind have been made, the municipality has not seen its way to carry out the scheme. All these parks, it may be said, have been created during the rangership of present respected superintendent, Mr. Duncan McLellan, which counts now thirty years. The Green was a large open space without any attempt to make it amenable to the landscape gardener's art until Mr. McLellan took it in hand, and Kelvin Grove and the Queen's Park have been mainly, if not altogether, laid out under his personal supervision. The Alexandra Park is of modern date, and the squares and disused graveyards have been improved consistently with the modern ideas of what these things ought to be.

The GLASGOW GREEN covers an area of 136 imperial acres, and is bounded by the Clyde on the one side and surrounded by the thick of the business of the city in the shape of public works, business places, and so on, on the three other sides. This is the Hyde Park of Glasgow, wherein the people can air their grievances, and although about 100,000 people passed into this park on Sunday, July 9, 1883, and a corresponding number every other good day of rest, the lawn has been kept in very good order. There are certain byelaws which prevent the uniform use of all this acreage for games, and consequently the amenity of the park and its trees, shrubs, and flowers has been more particularly conserved. Considering the vast amount of smoke and dirt that rests upon tree and plant life here, there is a fair show of selected deciduous trees. The common Elm, the common white and Russel's Willow, Thorns, Ashes, Elders, Alders, and Laburnums do much better than other hard-wood trees. There is no better field for testing their endurance than this central park, and Mr. McLellan has found almost every other description of hard-wood, even the Occidental Plane, succumb and die. Among evergreens the Aucuba japonica and the hybrid seedlings of Rhododendron catawbiense do much the best. A great attraction is supplied in the spring and summer bedding, and although the groundwork for this sort of work is situated alongside of the public drying ground there is little or no inclination to Vandalism; indeed, we were told that the East-enders, which comprise mainly the working bees, do not destroy or pilfer the growing plants.

THE QUEEN'S PARK comprises an area of 141 imperial acres, of which there is feuable, or, in other words, let or lotted for building purposes, some 42 acres, so that practically the park is about 100 acres in extent. This divides the burgh of Crosshill from the city, and lying as it does on an elevated position, and comparatively free from influence of smoke, it is better adapted for showing trees, plants, and flowers to' advantage than any of the other parks. The main portion, looking citywards, is laid out in terraces, and double lines of trees, boulevard fashion, guard the spacious walk on either side of the central avenue. Moreover, being a portion of rural landscape before the city extended there are many large trees which, of course, have been preserved intact, and which add very much to the other attractions. Here we find almost every description of tree, and few showing any symptoms of giving way. The evergreens comprise some as good specimens of Hex maderiense and Hodgin's Holly as one can see anywhere for their size; and then the grass-the green grass, unlimited in breadth -gives a hue to rank vegetable life. Added to this are the summer attractions of abundance of flowers and excellent designs in carpet hedding. We understand that more strangers visit this park than any other round about; and this is not to be woodered at, when we look at the great variety of plants that are disposed over its surface. In this park there are several glass-houses for storing and propagating work. About 40,000 people visited this park on Sunday, July 2, of last year, abundantly showing how the parks are appreciated. well to note here, for the information of strangers, that from the heights of this park the best "bird'seye" view of the city is to be had.

KELVIN GROVE PARK is probably the most fashionable and best frequented park, excepting, of course, the Green, about the city. It has for its adjuncts Glasgow University and the Western Infirmary, with the ornamental grounds about and around them, which swells the breathing space in that direction to the extent of about 30 acres. Kelvin Grove Park proper covers an area of 81 acres, of which about 8 acres are feued for building. From the proximity of this park to the city only certain species of trees will thrive. As the Superintendent says in his report, "Time and smoke are making great ravages in this park as in the Green. Among the oldest and finest trees which give both a character and name to the Park, Chestnuts, Limes, and Beeches appear to suffer most, as they are susceptible to the effects of a smoky atmosphere impregnated with chemicals. Each year suitable trees and shrubs are being planted in the room of those which had to be removed." G'asgow, like most large cities, is pressing westward, consequently any large trees that have been dotted down in the rural landscape have been preserved and utilised where brick and mortar have not ruthlessly compelled their ren. val. The Elm is the only very large bulky tree that bids fair to eke out a respectable existence among smoke, smut, and other hostile drawbacks to tree life, and there are some really excellent examples of this tree on the banks of the Kelvin. This was once a pure stream, flowing in the midst of green fields; it is now more or less impregnated with sewage, although the City authorities have done much to keep it pure by intercepting and conveying it in a culvert 5 feet in diameter, to be discharged lower down the reaches of the stream. The river itself has been recently widened and a more artistic turn given to its windings, while the slopes have been planted with such trees as Elms, Poplars, Willows, Thorns, &c., the groundwork brightened up with groups of Aucuba japonica, which luxuriates best of all among its compeers, although Rhododendrons, particularly of the Catawbiense breed, do exceedingly well-much better, in fact, than ponticum or any of the other breeds. The drives here are laid out, full advantage being taken to suit the undulating ground through which they are formed. What about ten years ago was an ugly "coup" between the recreation grounds at Clayslaps and Gilmorehill has been transformed into a beautiful breadth of lawn, and that at a profit, too, some 83,000 carts of rubbish from foundries, &c., having been deposited and a charge of 4d. per cart made for the privilege. A new bridge and carriage drive have also been made in connection with this, which gives increased facilities for promenading, and adds to the attractions of, considering its position, a highly ornamental and judiciously arranged park. ding out and carpet bedding here are remarkably well done-as the Superintendent says, "all classes continue to take a great interest in them, the carpet bedding, as usual, receiving a large share of attention. On July 2, 48,611 persons were enumerated as passing in by the several entrances; and during the usual weekly musical performances there was an average attendance of about 8000.

The ALEXANDRA PARK is the youngest of the batch, and farthest from the city proper. It has been made for the working classes living in the east end of the city, which, by the way, is crowded with public works, and consequently the artisan element preponderates more in this than in any other section of the This park covers an area of 85 acres, 16 of which have been retained for feuing purposes, although, like the Alexandra Park of London, slow in being taken up. The site is good, and the arrangement of the park shows the usual good judgment of Mr. McLellao. A spacious drive, with a suitable entrance, leads into it; and the drive is continued round to its loftiest peak. It is a pity that the Blocharn Works are so near its boundary, as the smoke from them must play havoc with almost every description of tree life. However, the plantations forming an irregular sort of belting here and there being thickly studded, one plant nurses the other, and the whole are benefited. As should be the case in all large parks, there is a great breadth of lawn, on the soft green of which the hard-toiling multitudes can rest the eye with infinite pleasure. and walks are numerous and well made, and the drainage provided for in the most efficient manner. The cesspools, which are used for running off the water into the drains and catching the sediment, are about the best that have come within our cognisance. They are made of fire-clay, so that a grating can be fitted on the top, and being made all in one piece they make a much handier job than if they were built of brick. The large flat panel opposite the retiring-rooms is formed into a geometrical garden, and is a telling piece of work when suitably adorned in About 20,000 people visited the park in summer. one of the census days, when the number is taken of all who pass within the gates. The music is always a great attraction, and it is discoursed by bands every saturday during the four snmmer mooths, and commands an audience of over 30,000 persons. Aswimming pond is provided for the multitude, and about 20,000 availed themselves of it during four summer months. The public taste is being educated quietly but surely, and in the autuma some 5000 plants are given away, some for their front plots, and some, as the late Dr. Guthrie said, for the broken tea-pots along the window-sill, which was always evidence of a happier, more contented home.

THE SQUARES have recently undergone considerable alterations and improvements. In addition to good roads substantially railed off there have been the thinnings of the Alexandra Park and other of the parks, chiefly Willows and Alders, which, along with the base of grass, now in an unusual tone of greenness, make them look like the living places of mannot the homes of the dead. Cathedral Square, near the famous Barony, and overlooked by the Necropolis, with its piles of monuments to the dead as varied in design as they are conspicuous in appearance, has been very much improved, and will form a continuation of the Alexandra Parade, which in time may become a boulevard to and passing the well-known Cathedral. George's Square is quite picturesque, and large numbers of the old and Infirm take advantage of the seats provided to see the bustle and stir of an intensely occupied city.

THE DISUSED BURIAL GROUNDS, instead of the grim-looking patchy things of yore, have been beautified by trees, shrubs, and flowers. To this day there stands in some of them the square watch-house where relatives, or other people employed by them, were accustomed to look after the safety of the dead bodies until the watching became unnecessary. In one particular graveyard, named the Ramshorn, quite in the centre of the business part of the city, the lairs -and they will number hundreds-are enclosed with cast-iron rails, like cages for lions and tigers, some 12 feet aboveground, and nearly as much, we were informed, under the surface-all this because of the body-snatching of Burke and Hare-a fear which took hold of the people at the beginning of the century, but which is now, in process of civilisation, dispelled; and thank goodness, if it were for nothing else than to get rid of these hideous cages!

VIOLETS.

WEE and modest as these are, there are no flowers held in greater esteem, either by rich or poor, being about the first with which most of us become acquainted in our rambles by the hedgerows. It is not the wild variety, however, that I wish just now attention to, but the cultivated sorts, of which there are many, and all of them are more or less desirable, according to the convenience for growing them or the purposes to which they are put. The hest for market are the Czar and Queen Victoria, which are remarkably free blooming, robust, hardy kinds; and as the individual blossoms are supported on long stout stems, they can be gathered and bunched up quickly, and so rendered ready for sale in the market. The prices realised may not seem much, but the aggregate profit on an acre of plants must be something enormous, as the yield of flowers, when they are well cultivated and the season is favourable, is prodigious.

To get as much out of the plants as they are capable of producing the land must be in good heart, and the aspect and shelter such that they receive plenty of sun, and are out of reach of cold cutting winds. A border under a wall or fence, facing south, or a piece of ground sloping in the same direction, suits best, as the solar rays soon bring them into bloom in the early spring, when they are of the greatest money value. The ground where they are to be grown need not necessarily be entirely occupied by the Violets, as they do remarkably well between fruit trees or bushes, the shade from which during summer is very congenial to them, and makes the conditions much the same as those the plants get in their natural home on the banks, with other vegetation above to shield them from the blaze of the sun. In the first part of the season, when they require the aid of this luminary, foliage is absent, and they thus get all they require to stimulate them into fresh life, and induce them to push forth their blossoms.

It will be seen from this that many bare spots about gardens may be turned to very profitable account, and that spaces under Apple trees, or between Gooseberry and Currant bushes, may be made to yield something of more value than weeds; but those who would have the Violets must soon be up and doing, as it is getting time for them to be planted if they are to be afforded a long season to grow and get well hold of the ground. The quickest and readiest way to form new plantations is to dig up any old roots, and divide the plants into as many as there are separate crowns, which may then be dibbled in in rows or beds at about 9 inches apart. This should be done, if possible, during

showery weather, as then the plants sustain less check, and start away quickly, and become re-estab-

Besides being grown in the situations described, Violets form admirable edgings to walks, a striking instance of which I have just seen, where along the two sides bounding the centre path of a garden long broad rows are now quite crowded with blossoms, These same edgings have stood for years, and have given no trouble, as all the attention they have had is a little trimming with the spade to prevent any further extension; but as they are getting very crowded they are to be divided, and after manure has been dug in planted afresh.

The sweetest and best of the double kinds is the Marie Louise, which has flowers quite as large as the old Neapolitan, and of a richer, darker hue, and the

plants are also hardier, although, like the Neapolitan, they are only adapted for frames, where, if protected by lights, any one may have them in the greatest per-fection. To get them in this desirable state they must be well treated now, as next season's display of flowers depends entirely on the crowns or hearts the plants form, as the blossoms that are to come must be all centred there before autumn sets in. The first ners; and to encourage these the plants should have a little fine leaf-mould scattered among them, and be a little fine leaf-mould scattered among them, and be kept a trille close and warm, which will not only aid the formation of runners, but assist them to root. As soon as they have done this it will be necessary to select a nice shady border on which to make the beds, and to prepare for these the soil should be enriched by digging in a good dressing of rotten hotbed dung in which there is plently of decomposed leaves, as Violets are particularly fond of that kind of vegetable matter, in which they root and grow with the greater in which they root and grow with the greater.

matter, in which they root and grow with the greatest freedom.

The proper time to plant out is about the middle of May, and the treatment requisite during the summer is to keep the plants well watered, which should always be done overhead, and the foliage should always be done overhead, and the foliage damped daily towards eveolog, either by sprinkling through the rose of a pot or syringing, which damping is a great help in preventing red-spider or keeping it down. What these insects dislike more than anything is soot-water, which if used quite clear is one of the safest and best stimulants that can be applied to the plants, the leaves of which it causes to develope hue that betokens good health. To and assume a and assume a nue that betokens good health. To force the whole strength of the growth into the crowns, runners should be nipped off as they show, and if this course is pursued all through the summer the plants will be bold and good for lifting to pot up or put into frames in the autumn. For the first supply of flowers a little artificial warmth is needed, supply of flowers a little artificial warmin is needed, and nothing answers better than fermenting material, the gentle heat from which keeps the roots moving, and these cause the crowns to push up a succession of blossoms. For the plants to be enabled to yield these they must be lifted with care, so as to have good requisite at all times whenever the weather is favour-able. Should long continuous met balls; and that the blooms may not damp air requisite at an times whenever the weather is navour-able. Should long continuous wet prevail, or the atmosphere be moist, it is a good plan to keep the surface soil stirred, and add a little fresh dry earth, cocoa-nut fibre, or charcoal dust, either of which will prevent mould, and maintain all fresh and

sweet.

To have Vinlets late, all that is needed is a few old lights to cover and shelter the plants, which may either be left standing where they grew, or lifted and put into a frame or pit where they can be raised well up to the glass. J. S.

PLANT PORTRAITS.

BESSERA ELEGANS, Garden, January 19, 1884.
CANNA LILIFLORA, Planchon, Revue Horticole,
1884, p. 132, ic. color.—A beautiful white-flowered
species. Native of Veraguas, Ceutal America.
CLEMARIS JACKMANNI ALBA, Garden, February

16, 1884.
FRITILLARIA KAMSCHATKENSIS, Garden, March

22, 1904.
ISMENE ANDREANA, Revue Horticole, 1884, p. 129.
NYMPHAEA ZANZIBARENSIS, Garden, March 15,
1884.—A fine variety of N, stellata, with unusually
deep blue flowers, which open in the morning and

at dusk. ODONTOGLOSSUM INSLEAVI SPLENDENS, Garden,

February 23, 1884.
Schizostylis coccinea, Garden, March 8, 1884.
Tinnea æthiopica var. Dentata, Bol. Mag., 1884, t. 6744.

TULIPA OSTROWSKIANA, Regel, Gartenflora, 1884, t. 1144.—Flowers red. TULIPA TRIPHYLLA, Regel, VAR. HŒLZERI,

Gartenfora, 1884, t. 1144.
VANDA INSIGNIS, Garden, March 1, 1884.
VANDA SCHREDERIANA, Garden, March 1, 1884.

∯loqists' ∯lowers.

AZALEAS.-We are getting now a good selection of double forms of the Azalea, many of which will be valuable for decorative purposes, being quite as useful as the single ones to place on the stage of a greenhouse, and much more useful for cutting flowers from. The double white varieties have had a good addition made to them in the introduction of Deutsche Perle, a well formed and, when well grown, the best of all the double white varieties, but I do not find it so vigorous in constitution as Flag of Truce and A. Borsig. These double white varieties, if grown on to bloom early and retarded to keep up a succession, are greatly esteemed for all purposes. The plants of all Azaleas that have finished flowering should now be placed in a hothouse, to make their young wood. This will cause the buds to set early, and is the right preparation for an early bloom next season. If repotting is required, it is a good time to do so, before they are placed in heat. While making their growths any strong vigorous shoots may be pinched back to promote the formation of three or four others not so strong, on which flower-buds will Those plants that are not potted will be improved by spreading some fertiliser on the surface of the soil in the pots. Thrips and red-spider must be destroyed, as previously advised.

CINERARIAS.-These are now the great feature in our greenhouses, in fact they are indispensable where a good display of bloom has to be kept up. We had the earliest plants in flower during November, and a continuous succession has been kept up ever since. This has been done partly by named varieties and partly by seedlings. We sow the first lot of seeds in April, and again about the end of May or early in June. The offsets are taken from the named varieties in May and June. They do not require any heat to strike them, in fact they do much better without it, as heat and a close atmosphere are sure to bring greenfly. A close hand-light behind a north wall is the best place for them when danger from frost is over, but these are unlikely in May - at least, a mat thrown over the light will be sufficient to protect the plants. Seedling and propagated plants all require plenty of air when they are well estab-The early propagated plants will grow into very large specimens if they are potted on into 8 and 9-inch pots.

CHRYSANTHEMUMS. - The specimen plants are now having the foundations laid on which are to be built the gorgeous masses of bloom so much admired at the exhibitions in November. At the right time instructions were given for the selection of plants to form the largest specimens; these are now of large size, with a clear single stem seen distinctly above the mould. The plants are now in 9-inch pots, to be repotted into II12-inch sizes some time in May. In the meantime the growths should be trained out regularly by placing a few sticks in the pots, to which the centre growths are trained, the outer ones being gently drawn further outwards by a wire being fastened under the rim. By a little practice it is easy to avoid tying the growths down too close. The object is to form a natural looking specimen, and this cannot be done with the lower stems drawn down to a horizontal position. The plants raised from cuttings propagated early will now be of large size and require training in the same way. Those for the production of large blooms have been potted into 5 and 6-inch pots to be placed in their flowering pots about the end They are still protected by glass lights, which can be removed while the weather continues

PELARGONIUMS .- These are now pushing vigorously into bloom, and will require attention, if they are intended for exhibition. Should the size of the house admit of it the plants should be raised on pots from the stage to allow of the air getting more freely amongst the leaves. The flowers will also be much nearer to the glass roof, which gives them a better colour with greater substance. The growths will have been tied-out and trained into form as recommended in February. Now the sticks must be placed to the stems to support the flowers. It requires a great number of sticks to train a large specimen-so many, indeed,

that there is no room to insert them in the pot, and they have to be tied on. We do not now see such large specimens in London; they are useful for exhibition, but for no other purpose. The smaller densely-flowered specimens in 6-inch pots are much more useful plants, and more creditable to the grower. A large plant, which has its roots packed firmly in the pot requires a large supply of water; and if this is not kept up, even twice a day in hot weather, many of the lower leaves will turn yellow and drop off. It is a good plan to thoroughly sumigate the house before the flowers open; if this is not done, the plants may be injured by greenfly before the flowering time is past. They cannot be fumigated when in bloom, as tobacco smoke causes the petals to drop very much. J. Douglas, Great Gearies, Ilford, E.

THE PROPAGATOR.

PROPAGATING BY ROOT CUTTINGS .- Many plants are easily propagated by roots—that is to say, by taking off spare roots and placing them on a gentle hottom-heat until they start into leaf-growth, and also begin to form fresh rootlets. With plants with which this means of propagation is practicable it is desirable, as it ensures healthy young plants through which the sap can flow freely, by reason of their being free from the hard wood usually found in many things propagated by cuttings, and the plants so obtained are freer and cleaner in consequence. The present is a good time to put in root cuttings, and by the propagation of its roots, when carefully performed, is the most successful method of increasing many of the Bouvardias, particularly Bouvardia Hogarth, B. elegans, B. Vreelandi, which, when propagated from the roots now, will form excellent winter flowering plants the same season. The spare roots should be taken off in spring-time, or when the old plants are being potted up, and cut into pieces 11 or 2 inches in These must be placed in the cocoa-nut fibre in the cutting frame, the cocoa-nut fibre being always kept damp. When the pieces of root begin to break into growth, and the shoots are half or I inch in height, they should each be carefully potted into thumb-pots and placed upon a gentle bottom-heat. The soil should be composed of three-quarters turfy loam, and one quarter leaf-mould. To every barrowful of this soil a 48-sized potful of Clay's Fertiliser, and a 32 potful of ballast, which should be broken into pieces about the size of Walnuts, should be added -the whole to be well mixed together.

As the plants grow they should be kept pinched back all over the plant, indeed when they make two joints they must be pinched back to one. As soon as the plants are strong enough they can be potted into larger pots; but they must be replaced upon the bottom-heat. After a few days they can be removed and placed upon a front platform in a warm house. Too great importance cannot be attached to the pinching back of the plants. So soon as they have a sufficient number of shoots it is no longer necessary to stop their growth, but they should be allowed to grow for flower, the last pinching back usually taking place about the middle of September. If they are grown in pots it should be in those of large 48 or 32-size. In the middle of May, or first week in June, those to be planted out should be planted in a well dug bed, where they should be as carefully attended to and kept pinched back as if they were in Sometimes it happens that the plants are attacked by fly or thrips. To destroy these pests the plants should be syringed occasionally in the evening with a mixture of weak tobacco-water and soap To a quart of tobacco-water and a piece of soft soap about the size of a Walnut-after the soap has been dissolved in hot water-2 gallons of rain-water must be added, to compose the mixture required. The plants not set aside for propagation should he syringed now and then with this mixture, to keep them free from insects.

About the middle or end of September the plantedout plants should be potted up and placed in a cold frame to establish them, and at the approach of frost they should be taken to their flowering quartersa warm greenhouse; they will then flower in the winter and spring. Many fail with Bouvardias, some not being able to keep them clean or flower them at all, and others never being able to get them to bloom in winter and spring when they want them most. Let all such try B. elegans, B. Hogarth, and B. Vreelandi from strong root-cuttings, planted out, liberally treated, carefully watered (a little liquid manure once a week in the evening), and they will get clean bushes of Bouvardias to flower naturally in winter and spring. T. O.

COLONIAL NOTES.

WE have received the second part of Field and Garden Crops of the North-Western Provinces and Outli, drawn up by Dr. Duthie, the Superintendent of the Saharunpur Botanic Garden, and Mr. J. B. Fuller, the Director of Agriculture of the Central Provinces. We have already spoken of the scope and purpose of this work, so that we need now only say that the present part contains figures and descriptions of numerous cereal grasses, pulses, and Cucurbits. The drawings are faithful, and the descriptions contain, in addition to information condensed from well-known sources, the results of personal observation which will render the work useful as one of reference, not only to botanists and cultivators in India, but also to students of economic botany in this country.

Some few years ago we had occasion to figure Melon-Cucumber, which excited some attention at the time, and was, we believe, received by some with something like incredulity. In plate 54 of the present publication, however, we find a fruit represented which might be taken for that of a Cucumber; it is, however, entered as Cucumis Melo var, utilissimus, and concerning which we extract the following notes: — "This is another of the extreme forms or varieties of the Melon, differing in the shape of the fruit and the uses to which it is applied. fruit varies from short oval, or cylindrical, to elongate, and is either straight or curved, like some varieties of Cucumber. Some specimens grown this year in the Saharunpur Garden measured over a yard in length. They also vary in colour from dark green to nearly white, usually changing to a bright orange colour when The seeds, like those of 'Phunt,' are rather smaller, and more slender, than true Melon seeds.

Roxburgh, Flora Indica, I.c., makes the following remarks on this plant :- 'This appears to me to be by far the most useful species of Cucumis When little more than one-half grown that I know. they are oblong, and a little downy; in this state they are pickled. When ripe they are about as large as an ostrich's egg, smooth and yellow. When cut they have much the flavour of the Melon, and will keep good for several months if carefully gathered without being bruised, and hung up; they are also in this stage eaten raw, and much used in curries by the natives. The seeds, like those of other cucurbitaceous fruits, contain much farinaceous matter blended with a large portion of mild oil. The natives dry and grind them into a meal, which they employ as an article of diet; they also express a mild oil from them, which they use in food and to burn in their lamps. Experience, as well as analogy, prove these seeds to be highly nourishing, and well deserving of a more extensive culture than is bestowed on them at

It appears from these plates that Cucumbers in India have sometimes egg-shaped fruits, while some Melons have long cylindrical fruits of the shape we at home associate with the Cucumber. It will be remembered that M. Naudin conclusively proved the specific identity of these forms by the experimental culture of every obtainable variety—a striking instance of the valuable results to be got from botanic gardens. We strongly commend the perusal of this work to the notice of those of our colonists whose lines may be cast under climatal conditions suitable for the growth of these Cucurbits, which are grown in certain parts of India on a scale which will excite the surprise of the reader.

LACHENALIA NELSONI.—This is somewhat largely grown by Mr. William Ingram, at Belvoir, for spring decoration, and it is one of those subjects that deserve a place in any greenhouse. The plants are treated in the usual way in regard to their culture, and they throw up remarkably fine spikes of golden-buff flowers. All the Lachenalias are well deserving of culture; but L. Nelsoni has a marked individuality of character, which commends itself to the lovers of spring flowering bulbous plants.

The Henbageous Honden.

BIENNIALS.-Rarely have we had for all kinds of hardy biennials a more favourable winter; for do we not see the unwonted sight of Pentstemons, Antirrhinums, Brompton and other semi-hardy Stocks, and some other things that, as a rule, succumb to frost, now standing robust and full of growth, and promising a show of bloom presently, that will help materially to beautify our gardens? It Is sorely disappointing when, after much cost and labour in getting out breadths of biennials, to find them fall a prey to excessive frost or rain, and too often two or three such failures lead to the entire abandonment of their culture. The recent winter has been so generous and so kindly, that all kinds of biennials will again rise in popular favour, and some of the most effective and useful denizens of our garden borders will be widely cultivated. Especially pleasing is it to note that biennial Stocks have stood so well, even though these are not grown so largely as The grand old scarlet Bromptons, unformerly. happily, are far less seen than in old time, because several winters proved too destructive to them. Queen Stocks are chiefly seen in market orchards, where, beneath the overhanging trees, they find protection from frost, and specially from cutting east winds. In all ordinary gardens it is well, as none can foretell the nature of the winter, always to plant in sheltered spots, or beneath walls and fences, and specially where the soil is naturally dry. Stiff clay soils-even in soft winters-commonly prove fatal to biennial Stocks. Very nearly allied to these in softness of wood are the much favoured Snapdragons, and although these are so amenable to cultivation that they make excellent annuals, yet really noble spikes of bloom can only be got from biennial plants. These have often been killed, even after getting through the winter, by fierce bitting east winds in March. Happily so far they have been spared, and some noble spikes of flowers may be looked for to grace our midsummer flower shows. It is just as well with old plants of Antirrhinums to let the wood stand till danger is past, then cut it clean down to where the new shoots are breaking up from the base. A sowing of seed early in the spring gives a fine lot of plants to bloom in the autumn, and where the winter is passed safely even a finer show in early summer, so that gardens may well be graced with gay Antirrhinum flowers from May till October. Pentstemons have stood through the winter bravely, and as wondrously green and vigorous. No plants turned out from pots in the spring can for a moment compare with the abundance of bloom got from biennial seedlings; a mass of shoots break up from the lower stems, and these produce a wondrous quantity of beautiful Pentstemons should be sown under glass in April, and be dibbled out into the open ground as early as can be in the summer; then ln good soil they will bloom well into the winter. Thus they may have a long season if properly provided for. The Canterbury Bell, again, is another singularly beautiful biennial, and the newer race, which includes double flowers and so many charming colours, serves to make the culture of these plants doubly interesting. have stood remarkably well, and, indeed, are already breaking up flower-spikes, so that an early bloom may be anticipated. To get these Bells in fine form seed should be sown at once, and thus give the plants ample time to get strong ere the winter sets in. gloves are not to be despised amongst biennials, and very effective and beautiful are the spotted flowered kinds. It is a matter for surprise that tens of thousands of these superb Foxgloves are not grown in wild gardens and extensive mixed borders. In many places the mild winter has not proved so favourable to Sweet Williams, fungus-the bane of these dear old biennials-having largely prevailed. Still, they are one of our very best and most attractive of border flowers, and fine strains, such as are now to be had, are so beautiful that they deserve cultivation in every

ANEMONE CORONARIA.—I am glad to see the Poppy Anemones so favourably noticed, as they are beyond compare among spring flowers, for they are not only effulgent in their colours, but so large, bold, and showy, as to produce a most splendid effect, especially when seen in beds or borders, growing in large masses, when, with the sun on them and fully

expanded, they make a grand show. Besides being so valuable for outdoor decoration, they are fine for cutting; for if taken just before opening they expand, and remain so in water, and, if kept in a cool room, they last almost, if not quite, as long as they do on the plants. Here they are greatly prized, and have been in use a long time, and are preferred even to the double A. fulgens, which, though brilliant, is quite outdone by some of the single scarlet A. coronaria, the petals of a few of the best of which are exceedingly bright and vivid, so much so as to be almost dazzling with the full light upon them. Those who have not grown these kinds should make a point of doing so, and lose no time in sowing the seed, either in pans or on the open border-the first perhaps, the best, as by putting the pan in a warm frame the plants will soon be up, and may then be pricked off under glass, to be nursed on ready for dibbling out where they are to remain and show If sown in the open border, or hed, the soil should be prepared by being made rich and light, which may be done by digging in a good dressing of leaf-mould, rotten dung, and sand; and if the situation is a warm dry one the plants so favoured are sure to do well. Those who have grown Anemones hitherto have been content to plant the roots, and take them up or let them stand; but when so managed they are far behind seedlings in point of strength or freedom of bloom, and it is far better to sow every spring, and treat them as annuals or biennials, as after they reach those ages they are never so good; and seed is so abundant in a fine season that there is never any difficulty in saving and securing plenty. 7. S.

Che Arboretum.

PINUS (LARICIO) KARAMANA. - This is a Pine concerning which some doubts have been expressed. All are agreed that it is a form of Laricio, but all are not agreed that it is sufficiently distinct to warrant keeping up the name as a variety. We believe the discrepancies may very probably be accounted for by the circumstance that very few botanists really know the true Karaman Pine at all. What does duty for it both in books and pineta is some form of Laricio like P. romana, and not very different from any other form of this protean species. Our attention was drawn to the subject by the difficulty of ascertaining what a particular tree of considerable size, grown at Kew as Pinus neglecta, really was. The Pinus neglecta of Low is a garden name for P. Pinaster, which has clearly nothing to do with the present variety. After considerable search and repeated comparisons we have at length identified the P. neglecta of hort. Kew with some specimens in the Kew Herbarium from Gay's Herbarium, and some cones in the Kew Museum, presented by Mr. Bentham. Gay's specimens are labelled "Pinus Laricio, Poiret, ex Caramania, Jardin de Froment le Mai 26, 1826;" and it is further stated on the ticket, that M. Soulange possesses a single specimen raised from seed brought from Karamania (a province of southern Asia Minor, having Karaman as its capital), by Ollivier. The cones in the museum, presented by Mr. Bentham, were probably derived from the same source, for they bear this inscription, "Pin de Caramanie: Soulauge-Bodin, 1831." Mr. Elwes has also contributed to the Kew Museum an imperfect specimen gathered at Boydagh, which I am inclined to refer to the same form, although the evidence in this latter case is by no means good enough to enable me to speak with much confidence. The forms enumerated by Delamarre and Vilmorin. as cited by Loudon, Encyclopædia of Trees and Shrubs, p. 957, all refer to another form of Laricio, said to have been introduced into France from the Levant in 1820. As to the synonyms cited, it would be impossible to pronounce upon their applicability, still less so as to those given by Gordon, Pinetum, p. 240. Carrière places Caramanica of Spach (Hist, Veg. Phan., xi., 385, where it is mentioned as a trifling form of Laricio), under P. Pallasiana, also quite distinct from our present plant.

Whether or not this identification prove correct, it may still be advisable to put on record the characteristics of the Kew tree, which, in any case, differs rather markedly from any other form of Laricio known to us.

It is a tree of moderate height, branched from the

base; the branches rather remote one from another, the lower ones spreading, the upper ascending, all relatively thicker and longer in proportion to the dimensions of the trunk than in Laricio. The bark of the trunk is pale brown, cracking off in long oblong

varieties; each leaf is about 6—8 inches long, dark green, both lighter in colour and longer than In the varieties Taurica and Pallasiana. The structure is the same as in P. Laricio; the buds are, some globose or dome-shaped, with a long point, others more



FIG. 91 .- PINUS LARICIO VAR. KARAMANA (NEGLECTA HORT. KEW).

flakes, as in P. silvestris. The young rind is dull olive-brown, with prominent pulvini. The pairs of leaves of each fascicle are arranged in tufts at the ends of the upturned branches, the form of the tuft being somewhat pear-shaped, retuse, denser and thicker than in pyrenaica and other elongated, all reddish-brown, resinous. The male flowers are in clusters, radiating from the centre and twisted, and each about \(\frac{2}{3}\) inch long. The anther-bearing scales are yellow, tipped with pink. The cones are solitary or in pairs, divergent, spreading, 4 inches long, by 1\(\frac{1}{2}\) inch in diameter and upwards,

elongate, ovoid-conic, curved at the tip, greyishbrown. The seed-scales are oblong, rounded at the distal end; the apophysis or thickened knob at the end roundish, with a transverse ridge, and a small, shining brown, slightly apiculated boss or umbo in the centre.

On the whole, the cone is most like that of the black or Austrian form of Laricio, but it is much larger, while the leaves and buds are widely different. M. T. M.

ARAUCARIA IMBRICATA .- I am preparing a list of the finest Araucarias growing in Normandy and Brittany, and I should be glad if some of your correspondents would oblige by stating in your columns the heights of fine specimens of the tree to be found in England, Ireland, and Scotland, or in any other country where the tree grows in the open air. According to my experience, the trees of candelabrum-like form with remote branches are females, while those with denser branches and foliage are males. I think the male trees will never form such fine trees as the females; at any rate this is stated to be the case in Chili. All the Araucarias which I have observed are diœcious, the two sexes never appearing on the same tree. Have any exceptions to this been noted in England? Yes; one was figured in our columns, 1873, p. 291, fig. 58, from Bicton, and we believe a similar occurrence has been met with elsewhere. Ed.] I should be grateful for information on the following points :- Date of planting and height at that time points:—Date or pranting and neight at that time; 2, present height; 3, girth of the trunk at 1 yard above the soil; 4, sex of the tree as observed from the catkins or cones; 5, production of fertile cones; 6, habit of the tree, candelabra-like or dense; 7, have the trees preserved their lower branches? P. N. L. The height of the fine Araucaria at Dropmore, in 1881, was 61 feet. The original tree at Kew, which is in bad health, is a female, a round-headed form, and the trunk denuded of branches at the base. Ed.]

Orchid Notes and Hleanings.

ONCIDIUM LANCEANUM LOUVREXIANUM.—The bandsome O. Lanceanum, with its thick oblong acute leaves, spotted on the under-surface, and its many-flowered racemes springing from a root-stock without pseudobulbs, is, though an old plant, seldom seen in gardens. The present variety differs from the type in its lip, the anterior stalked lobe of which is white, the two shorter lateral lobes being violet. The lateral sepals and petals are greenish-yellow, with reddish-brown spots, and with a large brown blotch at the base. The flowers have a perfume of vanilla. Mr. Williams attributes the spotting of the leaves, which is apt to disfigure these plants, to an excessive amount of heat and deficient ventilation. The species is a native of Guiana. The present variety is figured in the Orchid Album, tab. 129 (1884), from a plant in the possession of M. Massange, of Louvrex, near Marche, Belgium.

DENDROBIUM BARBATULUM (FYTCHIANUM).—
A very fine spike of this, bearing the extraordinary
number of thirty-two pure white flowers, each about
an inch across, comes from Mr. James Cypher, of
Queen's Road Nursery, Cheltenham. It is a very
pretty and distinct thing, but it has the reputation of
being a bad grower. Mr. Cypher, however, does not
find it at all difficult to manage, and now that most
Orchid growers have conquered the peculiarities of
Dendrobium Falconeri, D. devonianum, and many
others which were formerly considered unmanageable,
we may reasonably hope that better success may
attend the next importation of D. barbatulum than
has been met with by previous arrivals.

DENDROBIUM PANTONI.—Amongst the Orchids belonging to A. K. Maiowariog, Esq., Oteley Park, Ellesmere, there is just now a fine plant of Dendrobium Paxtoni with 1216 blooms. This is a grand old Orchid when seen in such perfection as this. S. Ş.

ODONTOGLOSSUM SHUTTLEWORTHII.—Under this name a very pretty hybrid of O. crispum was exhibited by Messrs. Shuttleworth, Carder & Co. on Tuesday last at South Kensington. It was awarded a First-class Certificate. The ground-colour of its flowers is pure white, the sepals are reddish-brown tipped with white, and the petals and labellum white blotched and spotted with reddish-brown, the labellum having a hright yellow base. It is a very telling variety.

MASDEVALLIA SHUTTLEWORTHII.—The pretty pan of this lovely dwarf species, bearing over seventy-five buds and rose and yellow blooms, with their bright yellow tails, for which Messrs. Shuttleworth, Carder & Co. were awarded a Cultural Commendation at South Keosington at the last meeting, presented it in its true character, viz., as one of the prettiest and neatest of our cold-house Orchids. In a shady, cool place, too, it is very free-growing, and almost perpetual-blooming.

ODONTOGLOSSUM WILCKEANUM FALLENS.—A fine variety of this beautiful Orchid was sold by auction by Messrs. Smith & Dewar, in Edinburgh, on the 3d inst., to Mr. Buchanan, Oswald Road, Edinburgh, for £27 6r. The purchaser is forming one of the finest collections of Orchids in the northern capital, and which is well worthy of inspection. We may add that the pleasure of a visit is greatly enhanced by a heartly welcome from both Mr. Buchanan and his enthusiastic gardener, Mr. Grossart.

PRUNING ORCHIDS. - The advocates of pruning Orchids still continue to force before us in a contemporary fancied proofs of the inconsistency of old and experienced Orchid growers. They continue to state that we are, one and all, afraid to put their theory into practice, and, I suppose, by this infer that we condemn their system because they are its advocates. It has several times been stated that we have tried, and seen their system tried by others, years ago-in fact, long before they pushed their supposed new discovery before the public; also that we find their system wanting. Are we, then, inconsistent to give up a practice we have found attended with evil results? The latest proof that pruning away old bulbs is the proper thing to do with all Orchids is deciduous Calanthes, and that the advocates of not pruning have before recommended the practice of cutting away the old bulbs when potting the young ones to start in spring. We admit that we have done so, and con-tinue to do so now, because in this case we found no evil results attend the practice. There is a great difference between Calanthes and Coologynes. In one There is a great case, while the plant is at rest all its roots die, and the young breaks depend but a short time upon the old bulb for support, but begin to form young roots before the growths are half an inch high. In Coelogynes it is different. They first form a long rhizome, and at the end of this leaves, and, lastly, a bulb, before a root appears from the new rhizome or at the base of the bulb. In conclusion, let me say that few Orchid growers know so much that they are unwilling to learn, no matter from what source the information may come, but we are unwilling to ruin our plants again to prove what we already know. W. B. B.

VANDA TRICOLOR .- The lovely Vanda tricolor is flowering here, but there would be nothing remarkable about that, were it not for the fact that the plant is grown in the intermediate-house, where, during winter, a temperature of about 58°-63° is kept up during the daytime, the night temperature being 30-4 lower. For several years the plant was kept in an East India-house, where a temperature of 70°-80° is maintained during the winter; but it did not grow at all. It was kept close and moist, received the very best peat and sphagnum an even temperature was eagerly maintained, but all in vain; the plant did not grow well, nor did it flower, but was always in a very poor condition. In the beginning of March last year my master said once, "This will not do any longer-try it in the Cattleya house; never mind if it does die there altogether." I protested, for I knew the place designated for its reception was not the best one—the temperature was too fluctuating there, and sometimes very low. "No fear," replied my master, "try it there; the sooner we know whether it will grow or die outright the better it will be." So I brought it into a temperate-house, where it was hung high up under the glass in a corner, very hot in summer, and rather cool in winter, but always The result was most astonishing; the plant improved quickly and wonderfully, making leaf after leaf, as stout and green as could be desired, and plenty of roots, and it is flowering now freely. plant appears to be by no means particular about temperature, as I knew it to be very fluctuating in

that corner. I attached a thermometer to the plant and watched it carefully. In the winter, early in the morning it went down often as low as 50°, while two or three hours later it marked 70° to 75°, and a sudden gust of wind would bring it down to 50° again, and sometimes even lower. In the summer the fluctuations were still more heavy, sometimes 55° early in the morning and 90° to 100° two or three hours later. But notwithstanding that the plant always grew well, and is in the best possible condition now. The same may be said of Vanda suavis, which was treated just the same, and with the same result; it is not flowering at present, but is showing bloom. C. Wissenbach, Royal Gardens, Wilhelmshohe, near Cassel, Germany.

CORYANTHES MACRANTHA .- "This superb Orchid is abundant in Sante Comapan: and can you guess in what company? We think the reader will be troubled to guess. At the summit of trees, above those which bend over a ravine or rivulet, there are nests inhabited by very large ants. The diameter of these trees is often from half to one mètre; their upper part is usually covered with Coryanthes; on the side Bromeliaceous plants, and sometimes an Epidendrum may be seen between the two, pendent spikes of Coryanthes, with from two to four pure yellow flowers, mixed here and there with red-spotted varieties, with various sized spots. Nothing can be more remarkable than the conformation of the lip; at first sight it might be mistaken for a Cypripedium, In this sort of pitcher or slipper a sweet-tasting liquid is contained, probably much appreciated by epicures among the little colonies of ants established in the neighbourhood; it is a delicate sweetmeat factory close at hand. Unfortunately—doubly unfortunately for those who audaciously endeavour to remove a plant from the spot where it grows-the ants have worse stings than our wasps. For the rest, neither the explorer por his assistants dream of climbing the tree to obtain the elegant ornament which decorates it; the ape-like agility of the wild Indian is required for such an enterprise to be successful, There is thus no other means of obtaining possession of the desired plant than by levelling the tree with a hatchet, but the task is neither free from difficulties nor danger. At each shake which disturbs the tree the ants become furious; one might almost imagine that they are aware that their hive or their colony is endangered, they rush infuriated and exasperated upon the daring individual who ventures to disturb their rest. Then an extraordinary fight begins : the besieger, attacked on all sides by little creatures, whose bites, though not deep, are nevertheless very painful, gets wild, ejaculates at each fresh sting one or other of those energetic oaths of which the Spanish language offers such an ample and rich store, then either flies from his little tormentors in despair, or plies his axe like a madman, in order to hasten the fall of the tree and to put an end to his miseries. When once the tree is felled he is obliged to work very quickly, as it is against the whole colony that he bas now to defend himself. A final blow with the hatchet separates from the summit the branch bearing hatchet separates from the summit the branch bearing the nest, a lasso is firmly fixed on it, then the whole is dragged towards a neighbouring stream, where it is left for some hours, with the nest and the horrible colony that inhabits it. When it is supposed that the prolonged submersion has put an end to these wretched little animals, it only remains to detach the plants by the aid of a pruning-knife and—the work is over. Unfortunately, it seems as if a close connection joins the Coryanthes to the nest, and perhaps to the ants, like Castor and Pollux of old, for the plant once drawn from its natural phaliate and no perhaps to the ants, like Castor and Pollux of old, for the plant once drawn from its natural habitat can no longer thrive, in spite of the help of the old abandoned nest; so that we cannot help coocluding that the acts are absolutely necessary to its normal development, but I should hardly be favourable to adding this new vermin to all those already imported. I leave the explanation of the phenomenon to the Darwinians, and content myself with stating that the cultivation of this curious Orchid has but rarely succeeded in our conservatories." B. Koczi, in "La Belgique Horticole," 1883, pp. 171-2." [Illustrations of the structure of these remarkable plants, with an account of their adaptation to insect life, were given in our columns, 1882, vol. xvii., p. 593. ED.

ARBORICULTURE IN ALGERIA.—In connection with the subject of arboriculture in Algeria, it is stated that on December 31, 1852, the plantations of trees made in the three provinces consisted of 32,000,000 trees of all kinds, of which nearly half were fruit trees, and that this showed an increase of 335,759 over the previous year.

FRUITS UNDER GLASS.

STRAWBERRIES.-The finest examples of forced Strawberries are usually forthcoming this month, when the weather is generally most favourable to their production. Such early varieties as Vicomtesse Héricart de Thury are now getting over, and President and similar kinds will be succeeding them; these being of a robust habit of growth require considerable space to prevent them from hecoming drawn and weakened, and their somewhat tall flower-spikes should have such support as will give to the fruit the full advantage of the sun's rays, although in times of intense sunshine it is indispensable to shade fruits reaching maturity, in order to bring them to a high degree of perfection. Overcrowding is a mistake not unfrequently made, and probably arises in many cases from the erroneous conception that the greatest weight of fruit can be produced from a limited space by placing in it the greatest possible number of plants. The primary care now will consist in watering, which, if strictly followed up as successful culture necessitates, will entail much attention, particularly on bright days, when the plants must be examined several times; it is during such weather that the turves under pots afford most valuable service. Especial attention should also be observed that a warm flow of air is maintained, for anything approaching stagna-tion accelerates mildew—a destructive enemy, to which that esteemed variety, President, and others are very susceptible. Late kinds of the British Queen type are especially impatient at being much forced during their early advancement, and may be quietly brought forward to the point of blossoming in cold frames, where they should be arranged on a firm surface into which their roots cannot penetrate.

PINES,-Plants now swelling their fruits should have every encouragement to do so to the fullest extent, and this can only be achieved by diligent attention. To preserve them in an invigorating condition they should be individually examined twice a week, when any that are dry should be properly supplied with diluted liquid-manure. In applying this the bottom portion of the stems should be wetted, so that the axils of the leaves may retain some of the liquid, and the plants will be thereby assisted to enlarge their fruits. Endeavour to maintain a genial atmosphere, so that moisture rests in the axils of the leaves; and regulate the damping and syringing by the state of the atmosphere and the progress of the crowns. If the fruits do not enlarge proportionately with these, it may be determined that too much moisture, combined with defective ventilation, or an excess of stimulating fluid, is made use of. The blinds should be run down during the middle hours of clear days, which will, independently of preventing scalding, avert an extreme rise in the temperature of the house, and thus obviate the necessity of admitting an influx of external air, which causes an aridity, than which nothing else is more damaging. A minimum night temperature of 70° should be upheld, while that for sunless days may range 10° higher, and in bright days it may reach 90°. All fruits that are not erect should be staked so that their crowns may keep perpendicular, the gills should be carefully severed from the footstalks of the truits, and superfluous suckers be likewise removed, leaving sufficient to meet requirements. The plants prepared for winter fruiting should have every inducement to make a sturdy growth, to effect which a steady bottom-heat of 85° to 90° should be maintained, regular application of weak liquid-manure administered, and constant attention be paid to their various minor requirements.

VINES.—The borders of houses in which the fruit is about to change colour must in no case be allowed to approach dryness, so that no impediment accrues on that account to this important process. It is manifest that to dryness at the roots may be correctly attributed one of the various causes of imperfection. During the course of colouring the back and front ventilators should be kept more or less opened continually, the growth of laterals should be encouraged so that perfect vitality in the Vines may be sustained, and the extra shade thus occasioned will be very helpful to black varieties. White kinds colour best who fully or partially exposed to the sun's action, and to advance this the Ioliage should be carefully drawn aside from over the bunches. Houses containing suc-

cessional Hamburghs which have recently had their fruits thinned should have a night temperature of 65°, which may safely rise from 85° to 90° in the daytime from solar heat, and be closed with that temperature if accompanied by adequate atmospheric moisture. See that the horders are well mulched with short manure, and that they also receive copious supplies of good liquid manure, especially where the Vines are old and weak. Muscat-houses nearing the blossoming stage should have their laterals carefully brought down to the trellis, their young growths stopped, and useless bunches removed before the flowers commence to expand, so that no check may occur in attending to these during the time the Vines are in blossom; when this stage is reached the night temperature should be kept at yo', and a correspondingly high day temperature be maintained, accompanied with a free temperature be maintained, accompanied with a free circulation of warm air, so conducted that superfluous moisture is expelled by mid-day, when, to accelerate perfect fertilisation, the camel-hair brush and pollen from Hamburghs, if accessible, should be brought into use. Lady Downe's and similar late varieties, which take a long time to ripen perfectly, should be encouraged to make their growths early, which should be stopped and brought down to the trellis, so that every portion is well covered, but not crowded; a night temperature of 60° will be the correct practice until the blossoms open; that for the day may attain from sun-heat, 85°. The Vines should be syrioged over when the structures are closed for the day, and this should be early, so that the temperature may this should be early, so that the temperature rise a few degrees. Thomas Coomber, The E. Gardens, Monmouth. The Hendre

Plants and thein Cultune.

STOVE PLANTS FOR CONSERVATORY DECORA-TION DURING THE SUMMER MONTHS .- There are many occupants of our stoves that may be advantageously used for this purpose during the above period of the year; those of the fine-foliage section will be, as a rule, of the most service, imparting a tropical appearance to this structure, which will be found most pleasing as well as affording a relief to the eye after beholding the wealth of floral beauties out-of-doors. A quantity of flowering plants when massed in the conservatory during the summer will not in a general way meet with that admiration which is bestowed upon such of this section as are worked up to give a display during the autumn, winter, and spring months. By utilising the hardier of the stove and intermediate-house plaots a far greater amount of novelty will be afforded, besides which more room will be found in these latter structures for the better growth and display of those plants which are not of a permanent character, such as the Caladiums and other bulbous genera. We make it a practice to follow out this method of procedure early in June, finding thereby very great relief in the other houses and no injury to the plants that we use.

It may be thought that we are somewhat premature in treating of work for June and the following summer months; it Is, however, necessary to anticipate future arrangements at once, so that preparations may be made accordingly to meet the requirements when the time arrives. No plants from the warmer houses should be used uotil they are well established, after having received their last shift. Over-potting of such plants will be more likely to result in failure, the other extreme will be much the safer plan to follow, the roots will more readily assimilate the food necessary for the proper sustenance of the plant. to be derived from artificial manures will afford sufficient nutrition to plants that are pot-bound. following among the foliage section will be found very useful for the object now under consideration, viz., the Dracænas of the bardier types, of which Youngii is one of the most noble and effective when well grown, its dark leaves of metallic lustre are most striking; D. Baptistii and D. Shepherdi are both fine species, being counterparts of D. Youngii in habit but quite distinct in markings to that kind, as well as being better known to most cultivators. With us most of the hybrids that we have grown are of too delicate a constitution for this kind of work. D. gracilis, D. cannæfolia, and D. umbraculifera among green-leaved kinds are the most durable and effective. All of the Pandanads that are usually grown may be safely used; so also may he Crotons with leaves of good substance, especially those with broad foliage, The Aralias again will impart a distinct character, whilst the South African Asparagus, A. plumosus nanus, will also thrive in a temperate-house in the winter even, leaving nothing to fear in using it for the conservatory during the summer. Cupania filicifolia, more elegant in growth than Jacaranda mimossefolia, is another plant that we have used without being injured. Erythrina marmorata is also a good decorative plant, that will withstand nearly as much rough treatment as Ficus elastica. The Rhopalas with their distinct foliation are another durable class of plants, not so much cultivated as they deserve to be. These are among the best of the stove plants with variegated or ornamental foliage. The best of the Palms were treated of in a previous Calendar (January 19, p. 83).

A good stock of Cyperus alternifolius and C. laxus will at all times he useful, and will repay for present attention for summer uses. Curculigo recurvata in goodly number will prove of much service. Some pots of cuttings should be got in of Panicum varie-gatum, Tradescantia discolor, and T. zebrina; these will be useful where any stages or ornamental baskets have to be filled to impart a finish to the front in association with Isolepis gracilis. When there is room in the propagating pit, a few potfuls of Fittonia argyroneura and F. Pearcei should be got in for use later on in room decorations in conjunction with the dwarf-growing Club Mosses (Selaginellas), of which a stock should always be coming on when much decorative work has to be performed-all the more so where fresh green moss is not readily obtained. Of flowering stove plants that are available for the conservatory, those of the bulbous section are among the most useful. Gloxinias, when not brought on in a high temperature, will last a good time; so also will the Achimenes, the Hæmanthus, the Imantophyllum, the Amaryllis, and the Eucharis even. with careful attention. Some well-grown plants of the Hedychiums will be noble objects when in flower, and at all times effective by their ornamental growth The comparatively new species of Impatiens, I. Sultani, is a most valuable flowering plant, the good qualities of which are now being more fully recognised. It is a capital plant to use in association with Torenia Fournieri, both of which may be easily raised from seed, and if so done as previously advised they will now be ready for pricking off, or even for potting singly into small pots if good progress has been made. Some of the bulbous plants from the greenhouse are excellent additions to the class of plants that we have been advising for conservatory decoration. Chief among these are the Liliums in well-known varieties-their growth and flowers standing well above many of the surroundings displays them to the very best advantage. With good management their season may be prolonged from early in June till October with ease. Our latest are now in the open air, whilst the forwardest ones are coming on in a late vinery just started. The Gladioli furnish us with excellent subjects; specially valuable is the white form of G. Colvilli, which for pots in early summer is quite a distinct feature. The later kinds with the Liliums as they advance in growth should have a top-dressing of good soil to encourage the surface-roots. The Blandfordias, too, are well worthy of more extended cultivation, whilst later on the Nerines, to which attention should now be given to ripen off a healthy leaf-growth, will he of much service in the late summer. Pots of Vallota purpurea that require a shift should now be seen to; they will soon be growing away freely, and will then quickly lay hold of the new soil. Tritonia aurea is another beautiful autumn flower for the conservatory; we cannot, however, succeed with it to our satisfaction. Our houses are not congenial to its well-being, or else our management has been at fault. James Hudson, Gunnersbury, Acton, W., April 7.

The Orangery.

ORANGE TREES IN POTS.—Reference was made to reporting the trees at p. 179; this is an important part of the culture—indeed, it may be said to be the foundation upon which the cultivator builds his future successful practice. Many persons fancy that peat is the best material to pot with—a notion founded, no doubt, upon the practice of French or Belgian growers, who send over the fancy varieties in a black hoggy kind of soil, which does not possess sufficient lasting properties to produce good fruit as well as good blossoms. The trees do well if allowed to

remain in the same pots three or four years in succession, but then the drainage must be good to begin and this is secured by placing the potsherds in carefully, and over them some very fibrous turf from which the particles of earth have been well shaken. The potting material itself is the turfy part of good loam, a liberal sprinkling of crushed bones, and some charcoal broken into bits from the size of a Hazel-nut to that of a Walnut; a little rotten stable manure may be used, but I am not sure whether this does not cause a more rapid decay of the loam. The crushed bones seem remarkably well adapted for the culture of this tree, and sufficient can be applied to sustain the vigour of the trees for at least three years. surface-dressing is applied in the form of powdered bones, charcoal reduced to powder, and loam, when the fruit is set and swelling. At this time of the year they cannot have too much heat and moisture; 65 night is a good minimum, and not a particle of shade is necessary. Syringe vigorously on opening the ventilators in the morning, and again when the house is shut up in the afternoon. 7. Douglas.

The Orchard House.

In the early house the fruit is now swelling rapidly. It set very thickly indeed, and required a great deal of thinning out. After this time there is no daoger of it dropping off, if the trees receive ordinary attention. The roots are now in a state of active growth, and require much water, especially if they are grown in In two or three weeks surface dressings should be applied, but not too much at a time; two doublehandfuls should be enough for a 15-inch pot; as much more should be applied about every ten days or a fortnight. The dressings seem to disappear very rapidly, but hy constantly adding to it we get a depth of about 2 inches, which In time becomes quite permeated with roots. If the house is a small one a good syringe will be sufficient to wash the trees with twice daily; but in large houses a garden-engine is necessary, and the water must be applied with considerable force under the leaves as much as possible, as it is there that red-spider first establishes itself, In the late house the trees are just going out of bloom, and the blossoms seem to have set there as well as they have done in the early house. A great deal depends on the weather; cold, dull days at the time of flowering means a bad set; but the cold is not injurious if the days are sunny. In clear sunshine never mind the east wind blowing through the house. Some people are afraid to open the side-ventilators, and depend upon the top-lights only. This is mistaken kindness, especially when the trees are in flower; indeed, I do not care to grow Peaches and Nectarines under a high, moist temperature, except during the time of the second swelling after stoning is over, admitting more air, and lowering the temperature when the fruit begins to ripen off. Plum trees do not set their fruits quite so freely as Peaches, and Pears are more difficult to deal with than either. Some years ago I had to do with an orchard-house in which it was difficult to keep a sufficiently dry atmosphere at the flowering period, owing to the number of other plants requiring water which had to be accommodated in the house, and it afforded an opportuoity of ascertaining the relative degrees of hardiness of the different varieties of Peaches and Nectarines, as well as the relation which they bore to the setting qualities of Plums, Pears, Cherries, Apricots, and Apples. Cherry blossoms never set well in the moist atmosphere, and Apples set as freely as Peaches and Nectarines, while Apricots would set with much the same relative freedom as Plums. J. Douglas, Great Gearies, Ilford.

DAVALLIA VEITCHIANA, — This appears to be the most perfect thing in the way of a basket Fern that one can well imagine. It is a sport from D. tenuifolia, and is most elegant. There are now several plants of it growing in baskets in the Exotic Nursery at Chelsea, the elegant fronds haoging down in the most tasteful manner, and nothing more appropriate can scarcely be selected. It does well in an intermediate house. If it succeeds as well in a pot as in a basket, it should make a telling subject in a collection of exotic Ferns. Groups of these are met with frequently in exhibition tents about the country, some of which are sadly wanting is subjects of a lighter and more elegant character.

APPOINTMENTS FOR THE ENSUING WEEK.

THURSDAY, April 17

Linnean Society meets at 8 p.m. Papers to be read;—1, Mago. Fungal a Lichen to the read;—1, Mago. Fungal a Lichen J. N. Crombie: 2, "Ornithology of New Guinea (No. 9;);" by Rev. Bowdier Sharpe, 3, "Variation in Leal of Banksia margi-nata;" by J. G. Otto Tepper. Roberts Sharper and Spring Show. Sale of Imported Orchids, at Stevens' April 18 Sale of Imported Orchids, at Protheroe

N our last number we gave a summary account of the discussion which took place at the highly successful Daffodil conference, but there were a few points touched upon which, for want of space, we could then only indicate, but some of which are of sufficient interest to advert to again. One of the most interesting and important points brought out by Mr. ELWES, was one relating to the geographical distribution of these plants. The genus Narcissus is confined to the western half of the northern hemisphere of the Old World-a circumstance connected by Mr. ELWES with the fact that the roots of Narcissus in a wild state are not truly deciduous except in the Corbu-laria section. The consequence is that underground growth goes on more or less all the year without that arrest of growth during the



FIG. 92.-THE TRUE DOUBLE WILD DAFFODIL.

dry season, such as is characteristic of Crocuses and Tulips, whose roots dry up and wither. The Narcissi, then, are fitted for a relatively moist climate, and will not, except in a few instances, bear the drought that some other plants endure. Some species, like Narcissus triandrus, do not like a limestone soil, but rather one that is peaty or sandy. N. calathinus seems to need the propinquity of the sea. Many of the more tender species, said Mr. ELWES, would do well in Holland if protected from frost-an opinion corroborated by the experience of M. KRELAGE, who recommended their culture, where possible, in sandy well drained soil. Incidentally, Mr. ELWES alluded to the great variation that takes place in Tulips when cultivated. To such an extent does this take place that no one would recognise the plant after a few years' cultivation to be specifically identical with that planted in the first instance. This statement was also confirmed by M. KRELAGE, who adverted to the singular fact that some Tulips revert in a measure to their aucestral form, and remain constant to it thereafter, probably because the conditions are such as better suit the original form than the developed one. But this is a matter environed with difficulty, because if one Tulip behaves in this way, why not all? We can only fall back upon individual proclivities, which,

however, is the expression of a fact, not the explanation of one,

Among the species difficult to cultivate, probably because they are not able to accommodate themselves sufficiently to circumstances, as before explained, Mr. ELWES cited the curious Mogador species, N. Broussonetii. Mr. SHORT, however, mentioned that he had grown the plant in the open, but protected it in winter. The leaves attained a length of 2-3 feet, but up to the present the bulb had not flowered. It was surmised that this plant, of which a figure is given in BURBIDGE'S Narcissus, might really not be a Narcissus at all. With reference to the beautiful white Hoop-Petticoat Narcissus, N. monophyllus, Mr. ELWES said that Mr. HAMMOND, of St. Alban's Court, near Wingham, grew it to perfection. His system was to give abundance of water during the growing season, and to dry up the bulbs thoroughly afterwards. Mr. BARR had succeeded by growing the plant in the open border, putting a frame over it in summer.

Mr. FRANK MILES mentioned having crossed

done with the subject for the present. Doubling in Daffodils, as in other plants, depends on various circumstances, sometimes merely on the repetition of the perianth segments in various degrees, sometimes on the more or less complete substitution of petals for stamens, or for stamens and pistils, very frequently to the combination of both these methods in the same flower. It is but rarely that the change is so great as entirely to obliterate the stamens and pistils; the ovules indeed are usually perfect in these flowers, so that fertilisation is possible, though few of us had the luck, like Mr. BROCKBANK, of seeing seed-pods. A further complication is shown by the fact that the cup is sometimes present in these flowers, sometimes absent; thus in the double N. Eystettensis (fig. 93) the perianth segments are repeated over and over again in regular order, but the corona is not developed at all. In the "Codlings and Cream" the perianth segments are repeated over and over again, and the corona is sometimes present, sometimes absent. In the "Butter and Eggs," the deep orange corona thus repeated in alter-



FIG. 93.-NARCISSUS EYSTETTENSIS.

N. triandrus with N. Pseudo-Narcissus, the result of which we should be glad to see. Daffodil of the future, in his opinion, should have larger flowers, more distinct in colour.

One thing is clearly indicated by the display of Daffodils and the comments made on them, and that is, that Daffodils, even wild Daffodils (and the remark applies, of course, to other plants), were not created as we now see them. They are the descendants of an earlier and a different form, and which have gradually become modified to suit particular circumstances. There are various ways of proving this, that is so far as such matters can be proved; but the most direct evidence is to be sought in that which we mentioned last weekthe development of the individual flower from its origin to its fully developed condition. Those species which are most highly endowed with this power of adapting themselves to circumstances are those which are most likely to vary: the gardener has caught them in the act, and has encouraged the propensity to the extent we now see.

A word or two about doubling, and we have

nation with the pale perianth segments, gives the parti-coloration to which the plant owes its popular name. In the double wild Daffodil proper (fig. 92) the original cup is entire, and encloses a mass of petal-like stamens and pistils. Carry the process further, and the outer corona bursts like the calyx of a Pink, and sometimes the flower becomes "quartered" like a Rose, as in some forms of Telamonius. We have even seen tier after tier of double flowers one above another, each separated from its fellow by a short stalk or prolonged axis, but this was in the days before Daffodils were in fashion, and such a flower would have been considered an ugly monster, despised even by the botanist. Now, the public are evidently not disinclined to mix a little philosophy with their love of beauty, and, as Professor FOSTER well put it, are no longer satisfied with the maxim that "Ignorance is the proper setting of beauty."

- HORTICULTURAL MEETINGS IN GHENT .-The first of the montbly meetings inaugurated by the Syndical Chamber of Belgian Nurserymen was held at the Casino, in Ghent, on Monday last. These meetings, it will be remembered, are established on



Fig. 94.—Group of Crown imperials. (see p. 475.)

somewhat the same lines as the Fruit and Floral Committees at South Kensington.

—A ROSE AND LILY EXHIBITION will be held at the Hague, kingdom of the Netherlands, from July 10 to 13 next. The exhibition will be held in the building devoted to Arts and Sciences under the direction of the Hague division of the Netherlands Horticultural and Botanical Society, under the patronage of the King, The prizes amount to 1682 guilders for Roses, and 438 guilders for Lilies. Specimens grown in pots and cut flowers of both subjects are invited, and a number of medals will be awarded.

— THE INTERNATIONAL MEALTH EXHIBITION.—The Fruits of all Countries is the title of one of the handbooks now being written for the Health Exhibition authorities. The anthor is Mr. W. T. THISELTON DVER, of Kew.

- EPPING FOREST .- At a meeting of the Common Council on April 3, Mr. C. H. STEWART (Chairman of the Coal, Corn, and Finance Committee) brought up a report with reference to Epping Forest, and said that for the acquisition and maintenance of the Forest up to the end of the year the sum expended was £277,317. The committee estimated an expenditure for 1883 at £6045. They had, however, spent upwards of £9792, of which £3250 was upon extraordinary expenditure, but the greater portion was that which would bring in a good annual income. The Council would require from the Epping Forest Committee in future an estimate of probable expenditure in each year, and that they should not exceed the estimate without obtaining the sanction of the Court. It was hoped that the committee would alter the Forest as little as possible. The report was adopted.

— ROYAL METEOROLOGICAL SOCIETY. — At the ordinary meeting of the Society, to be held at 25, Great George Street, Westminster, on Wednesday, the 16th inst., at 7 F.M., the following papers will be read:—"On the Origin and Course of the Squall which Capsized H.M.S. Eurydice, March 24, 1878;" by the Hon. RALPH ABERCROMEY, F.R.Met.Soc., "Waterspoots and their Formation;" by Captain I. W. C. MARTYR. "The Weather Forecasts for October, November, and December, 1883;" by CUTHBERT E. PEEK, M.A., F.R.Met.Soc. "On Certain Effects which may have been Produced in the Atmosphere by Floating Particles of Volcanie Matter from the Eruptions of Krakatoa and Monnt St. Augustin;" by WILLIAM F. STANLEY, F.R.Met.Soc., F.G.S.

- Blackthorn .- A writer in a sporting paper, treating of the opening of the fishing season, and describing the waterside where he proposes to operate, alludes to the dark Blackthorn twigs that are "covered with a pale snow of blossoms for miles down the sheltered glens of southern shires." At present our home counties, and no doubt others further afield, are gay with hedgerows crowned with numberless blossoms of the Blackthorn. The whole of the Plums appear to be wonderfully free of bloom this season. Our fruit gardens, and especially those in which certain sorts are largely grown, are shrouded in white flowers; and looked at from a distance it seems as if a wealth of snow had fallen densely on some parts of the country. In the bedgerows Sloe is flowering in "happy plenteousness," and it is interesting to note how in the same hedgerow, fully exposed on all sides, while some of the bushes are in full bloom, with scarcely an unexpanded bud, there are some so much later that scarcely an expanded flower meets the eye. There appear to he inter-mediate forms also. If the early one were in a shel-There appear to he intertered or more favoured spot, the difference in time of flowering would not be so remarkable; but close together, apparently under the very same conditions of development, were three distinct periods of full bloom. Nor did the difference appear only in isolated places, but it could be noticed at intervals in a hedgerow of considerable length. This was in the southern part of Hertfordshire.

—— AERIAL ROOTS OF GARDENIAS.—In St. John's Nursery, Mattock Lane, Ealing, Mr. GEORGE WEEDEN some sixteen months ago planted out some Gardenias in a small house previously used for growing Cucumbers. The plants have done well, and are

producing large numbers of flowers, and at the points of the branches, where the young shoots have come out of the leaf-axils, the plants are developing aerial roots very freely. As soon as the buds are set at the points the shoots are cut from the bushes just below the roots, potted in small pots, and plunged in a hotbed. In a few days these are nicely rooted plants, and Mr. WEEDEN has several small specimens, 9 inches or so in height, bearing several flowers. It may be that, the house being small and low, with an abundance of moisture at a high temperature, the plants are induced to put forth aërial roots, which they do with remarkable freedom. In this way Mr. WEEDEN is able to increase his stock rapidly, and possess saleable plants in a very short time.

-- Times of Plums Flowering.-In a large fruit garden near Chiswick three sorts of Plums are grown somewhat largely, viz., Prince of Wales, Victoria and Pond's Seedling. The blossom of the former has withered in the ordinary course, and the young fruit appear to have set plentifully. The Victoria has perfected its flowers, and a few more days will see it withered. Pond's Seedling is in full bloom, but it is noticeable that while the blossom of the two former was plentifully distributed all over the trees, and notably in the interior of them, the blossom on Pond's Seedling is mainly on the circumference, the points of the branches being thickly set with it; but there is little distributed over the interior of the trees. Standard trees of the Green Gage and Orleans are thickly set with blossom also,

- LARCH IN SPRING,-What a striking hue of young, fresh, living green is afforded by the Larch in spring. Well and truly has it been remarked that for picturesque beauty the Larch is almost unrivalled. Looking across a stretch of verdure, on the opposite side could be seen a line of woodland, bare of foliage, except that furnished by some specimens of Larch in the foreground, shapely and of smooth outlines, with a graceful droop peculiar to this member of the Pine family. As soon as the Larch begins to assume the dimensions of a tree it is elegant in appearance, and though it may not be termed a beautiful tree, "it though it may not be termed a beautiful tree, "it has," remarks Mr. A. J. DOWNING, "what is perhaps more valuable, as being more rare—the expression of boldness and picturesqueness peculiar to itself, and which it seems to have caught from the wild and rugged chasms, rocks, and precipices of its native mountains. There its irregular and spiry top and branches harmonise admirably with the abrupt variation of the surrounding hills, and suit well with the gloomy grandenr of those frowning heights." But it has its uses in valleys also, and especially when dotted about the foreground of woods, composed of trees that are later in bursting into growth. But it needs to be planted sparingly, it is so unvarying in form that if planted numerously it becomes monotonous, and a defect in the landscape. Just now the Larch can be seen to the best advantage, and in all its earlier stages of growth it has a singularly cheerful green appearance, eminently vernal in its Ireshness and life.

- RHODODENDRONS AND NATURAL SOIL .-Looking through a Hertfordshire garden a few days ago, we were struck with the luxuriance of some Rhododendrons growing in a sandy loam on a bed of sand. They were planted in beds of native soil, with which had been mixed plenty of leaf-mould and decayed matter from the rubbish heap. Into this they had rooted deeply, and flourished like the traditional riverside tree. Immediately after flowering a summer mulching of very rotten manure is added, with great advantage. Beds of Rhododendrons planted at an earlier date were also to be seen, doing well; but if a bed shows signs of exhaustion the plants are taken up, and alter well breaking up and renovating the soil they are replanted: previous to placing the summer mulching of manure on the bed, the surface is lightly forked over, care being taken not to injure the roots near the surface. The bed is also pricked over with the fork in autumn, so that any of the manure remaining may become incorporated with the soil. Many Rhododendrons fail through being placed in unsuitable soil; a timely preparation of of the compost would prevent failures of this character.

— CITY AND GUILDS OF LONDON INSTITUTE,

—A cumbrous name for an establishment which should
be of the highest importance to the commerce and
manufacturing industry of this country. Science is
making such rapid strides in old departments, and

breaking ground in so many fresh directions, that unless our manufacturers keep pace in their degree they stand a chance of being well beaten in the race by our American and German competitors, and so, we ven-ture to say, it will be with agriculture and horticulture in the luture. Although in the vast pile erected at South Kensington as in the report before us we see no hint that anything is to be done for these important branches, we cannot believe that the practical sense of the country will long permit agriculture, and specially horticulture, to be unrepresented in the course of progress. At the new Institution large sums are being expended to supply theoretical and practical instruction in most branches of manufacturing industry. Why foud industry and horticultural industry, the commercial importance of which latter is enormous, though but little known to the general public, should be left norepresented is a mystery. The main object of the Iostitute is to train, not merely instruct, teachers in mechanical and electrical engineering, in the arts of construction and decoration, in chemical and other manufactures. Professor HUNLEY, quoting HARVEY, the great anatomist, says "Those who fail to obtain by means of their senses and observation an exact knowledge of the objects with which they are concerned, fill themselves simply with inane fancies and empty imaginations," HARVEY applied the observation to his own subject, that of anatomy; but it is clearly of general application, and applies as forcibly to botany, vegetable physiology, and chemistry, as the basis of progressive plant-culture, as to any other branch of knowledge whatever.

- MASSACHUSETTS HORTICULTURAL CIETY, Boston. — The annual Azalea and Rose exhibition, which is the first of the series given each year by the Massachusetts Horticultural Society. opened at Horticultural Upper Hall, recently. exhibition, says a correspondent, who sends us the account, was the finest of the kind which the Society has ever given. Although this was called the Rose and Azalea show, these two flowers did not monopolise either the space or the attention, and a brilliant feature of the exhibition was a fine display of Orchids. In the centre of the hall was a display of Orchids, the largest ever given by the Society, which was composed of contributions from the conservatories of Mr. F. L. AMES, Mr. GILMORE, Mr. PRATT, and Mr. HUNNEWELL. At the entrance to the hall was a special exhibit of the hybrid Narcissns, from Woolson & Co., of Passaic, N. J. Mr. Woolson is a graduate of the Massachusetts Agricultural College, and is the largest grower of her-baceous plants in the country. In his exhibition were 110 distinct named varieties of the Narcissus, which was the best show ever made in Boston, besides twenty varieties of spring flowers. Among the plants of the Narcissus were several novelties, and there were also shown spring Anemones and alpine plants. The two principal exhibits of Azaleas were made by MARSHALL P.WILDER and by HOVEY & Co. The exhibitions were on opposite sides of the hall, and were specially attrac-tive features of the display. Mr. WILDER showed twenty-six varieties, among which those of special interest were the Marquis of Lorne, a showy bright red plant; the Countess of Bedford, pink, with dark centre; Criterion, light pink; and Baron de Vern, an elegant white plant, which is very showy. Mr. Hovey showed about twenty-five varieties, of which the more noticeable were the Comte de Kerchove, white flowers, striped with red; Suzette, an extremely large-sized plant, with light purple flowers; Triumph of Double Whites, a double white flower and very elegant; and Madame Leon Mahant, which is of the very best and bas a red flower; and Sigismund Rucker, with light pink flowers,

"POPULAR MICROSCOPICAL STUDIES,"—A short time since we had occasion to mention the direct practical value likely to ensue from an examination of the microscopical structure of plants. Up to this time the microscope has been left to professed botanists, and to a large extent this must still be so, as the manipulative skill and patience required are hardly compatible with the practical labour of the professed gardener. Nevertheless if it can once be made manifest that practical results are likely to accrue, we shall no doubt find some enterprising gardeners availing themselves of the instrument, and not content to rely wholly upon the observations of other people. An immense help to practical men and amateurs is afforded by Mr. Arthura Cole, who is publishing a work in parts under the title above-

mentioned. The issue of each part is accompanied by a properly prepared microscopic slide, the descrip-tion of which is given in the letterpress, together with a coloured lithograph taken from the specimen itself or from one of a similar character. For lecturers or students of particular subjects this publication likely to be of the highest service. We hope Mr. COLE, or some competent person, will see his way to the preparation and issue of a series of slides illustrative, say, of the structure of particular families. It so bappened recently that we had occasion to examine superficially some twenty leaves of different species and genera of Orchids, and though not wholly inexperienced in the matter we were surprised and delighted at the great variety and interest revealed by cross sections of the leaves of various species. We can but earnestly commend the further pursuit of this matter by those whose leisure and skill enable them to do so.

THE

NEW AZALEA INDICA AT SOUTH KENSING-TON.—The very interesting group of these shown at the meeting of the Royal Horticultural Society on Tuesday last by M. Louis van Houtte, of Ghent, carries one back to the time when a similar group from the same source was exhibited, a dozen or so years ago. Each collection marks a period of decided advance in the way of Continental enterprise, not, however, that there has been by any means a pause in the work of production, for almost yearly since English nurserymen going over to Begium in the spring brought back with them some useful and acceptable novelty. That out of a group of some eighteen or so new varieties, nine of them should have secured First-class Certificates of Merit is a remarkable occurrence. The varieties so favoured are Souvenir du Prince Henri, semi-double, bright rosymagenta, clear in colour, good shape, large flowers, very free and showy; Baron Nathaniel de Rothschild, semi-double, pale bluish-purple, good full flowers very free; John T. D. Llewelyn, double, very delicate flesh, margined with white, bright crimson spots in the centre, and markings of the same, finely formed petals, distinct and very free; Souvenir du Duc d'Albany, very large, pure white, fine form, very attractive; Mdlle. Marie Stockman, semidouble, pure white, very free and good; Comte de la Torre, single, delicate pink, with a regular margin of white, the upper segments richly marked with crimson and slight flakes of deep piok, very pretty and distinct; Comte de Paris, single, very fine in shape, white, with a broad flame of pink on each segment and slight rosy flakes on the upper segments, and also spotted with bright crimson; Comte Adrien de Germiny, single, the lower segments deep brick-red or dull pale crimson, the upper petals having a broad wedge of purple, and also spotted with black, a very distinct but decidedly dull-looking variety, large flowers of fine shape; and Mr. B. S. Williams, single, very rich magenta, slightly shaded on the edges, slight dark spots on the upper segments, very large, stout, and extra fine. The following appeared to be the best of the uncertificated varieties:-Sir T. Spencer Wells, single, bright crimson, crimped edges, large and showy; Mrs. B. S. Williams, semi-double, white, with slight rosy flakes; F. W. Moore, semidouble, bright rosy-crimson, fine in colour, very free, but the flowers were not sufficiently expanded to judge of their true character; and John Hawkesworth, semi-double, pale orange-scarlet with finely formed petals. Mr. B. S. WILLIAMS exhibited one of M. Louis van Houtte's new varieties of 1883, viz., Madame Estelle Cavelier; this is of a rich orangecrimson shade, fine form, and very free, and well descrying attention for its obvious good qualities.

— PLANTS IN BLOOM AT MR. B. S. WILLIAMS' NURSERY. — Here we recently saw an immense bot of sheaths throwing up in the fine collection of Cattleyas (1100); few have really opened, but they will begin doing so in a few days. A fine specimen of C. Mendelli was seen with blooms quite 7 inches across the petals, of a very pure white, and deep purple-frilled lip; a very finely marked Lycaste, L picte, having a prettily spotted lip of a high colour; Cymbiotium eburneum Dayanum, a white form, prettily spotted; and the white Dendrobium Draconis, so charmingly contrasted with its orange-crimson throat. Of Cypripediums a few were in bloom, the choicest of these being C. Jævigatum and C. Argus. The Zipopetalalms are represented by the late-blooming species, roseum and ceruleum. Many

plants of Vanda suavis and V. tricolor were in bloom, carrying strong racemes of their richly-marked flowers. Several Odontoglossums adorn the houses devoted to these favourites, consisting of such as O. Hallii leucoglossum, O. cucullatum, and O. Alexandræ gigantea, this last carrying some very long spikes of its large, white, beautifully spotted flowers. This sort, with its much branched habit of flowering, was quite a feature in the house. Of other plants in bloom some pretty Francisea calycina were carrying each a robust head of flower on quite small plants, unbranched as yet, and growing in large 60's. not see so much of this lovely dark purple flower in gardens as we ought to do. A beautiful hybrid between Azalea and Rhododendron was in bloom in the house devoted to hybrid Rhododendrons bearing large rosy-white heads of flowers, decidedly more Rhododendron-like than otherwise, but with the coriaceous foliage of an Azalea. The strange Cochliostema Jacobianum bore two large spikes of rosy-purple and blue flowers. The rare Ochna multiflora was fruiting abundantly in a warm stove, the scarlet berries and orange-green calyx making it a pretty decorative object; this should prove a capital table plant, and it will be a change from what is seen generally. It is easily grown, and fruits on small young plants-another desideratum. Some very superior hybrids of Clivia miniata were throwing up massive heads of bloom. of these, now open, are Madame Van Houtte and Martha Reimers, the colours gold and scarlet; and the great substance, regularity, smoothness of outline of the petals marked them as great advances in this favourite genus. These are both of Belgian origin, and will not be unknown to visitors at London exhibitions. Here much is made of Azalea mollis, the show-house being gay with these, and many fine Hyacinths and Tulips, some of which were shown at the "Park" and the Royal Horticultural Society's recent

— CATERHAM HORTICULTURAL SOCIETY. — The annual summer exhibition of this Society will take place on Wednesday, July 23.

— THE OXFORD ROSE SOCIETY'S thirty-third annual exhibition will be held in New College Gardens on Thursday, July 10.

- INDIA-RUBBER IN PARA. - Reporting on the trade and commerce of Para, Mr. Consul GREEN says the chief article of export is india-rubber, and that this trade has increased so much of late years, owing to the high prices the article has been realising in the consuming markets, which has induced immi-grants to apply themselves chiefly to its collection. Should the demand continue for the article," Mr. GREEN says, "I see no reason why the yield should not go on increasing, as there are new fields being continually opened. From Peru now comes a class of rubber 'Caucho,' in slabs or sheets of about 4 inches thick and 2 to 3 feet long. It ranks a little higher in value than the coarse quality, i.e., Sernamby, and I should estimate that 400 to 500 tons of this quality come to market every year." From a table showing the india-rubber crops from 1870 to 1882, it appears that in the former year 4794 tons were produced, which steadily increased till 1881, when it showed 8936 tons, rising in 1882 to 9624 tons. The increase in value in the twelve years was about £1,749,011 13s. 4d.

— PROPAGATION OF DOUBLE-FLOWERED GOREE AND OTHER DWARF SHRUBS.—Cuttings of double-flowered Gorse made from the current year's growth, and put in under a hand-glass in September, will be rooted by June, when they may be taken up, and the cuttings should be from 4 to 5 inches in leogth, and have the leaves stripped, or rather cut off, for half the length. A prepared sandy border, close to a wall, on a north aspect, is a good place for the hand-glass. The St. John's Worts can be propagated in the same way as may Eupleurum fructicosum and Santolina Chamæcyparisus and Gaultheria Shallon, all of them useful subjects for gardens and pleasure-grounds.

FALSE SCAMMONY.—It is well known that scammony, the resin of Convolvulus Scammonia, as usually found in the English market, is very much adulterated; all sorts of substances are mixed with it, as it is prepared in Asia Minor. Of late years, however, the root itself has been brought into English commerce, and the extract prepared from it by our

own manufacturing chemists, so that genuine scammony can be obtained. This, however, is not the case in India, that sold in Bombay is said to be all fictitious, without the slightest resemblance to genuine scammony. It is somewhat translucent, of a bright greenish colour, has a resinous smell, taste, and fracture. It is said to be made in Surat. A black kind is sometimes met with, which is equally spurious. Gennine scammony is described as being met with in Persia, but it does not seem to be known whether it is produced in that country or imported. A native authority, however, says that artificial scammony is made from the juice of Calotropis gigantea, mixed with flour prepared from a pulse known as karsanah." According to this writer scammony loses its aperient properties when baked, and becomes powerfully diuretic. This baking process consists of enclosing the powdered drug in a bag, and then placing the bag inside an Apple or Quince, which has been hollowed out for the purpose; the Apple is then enclosed in dough like a dumpling, and baked in an oven."

THE ORCHID MARKET.—There was a large show of Orchids in flower at STEVENS' Rooms on Wednesday, especially of Odoatoglossums; but most remarkable of all was a superbly flowered piece of Dendrobium aggregatum majus. The plant, which was growing in a basket, was one of the Button Constable specimeos, secured by Messrs, BACKHOUSE, of York, and bore thirteen spikes of flowers—a perfect sheet of golden-yellow.

GIGANTIC TRICHOMANES. - Those who admire the well-known Killarney Fern (Trichomanes radicans) can scarcely fail to appreciate the beauty of its noble congener from the high mountains of Java-T. maximum. This princely Filmy Fern makes lovely arching fronds, 2-3 feet in length, and 9 or 10 inches wide! Its highly divided fronds are of a paler green than those of the Killarney Fern, and its creeping rhizome is more sturdy. It grows freely in a shady fernery with a temperature ranging from 55° (or occasionally 50°) in winter, to 65° (or occasionally 70°) in summer; liking, of course, a humid atmosphere. Two varieties of this fine species are in every sense "at home" in the York Nurseriesimported years ago direct from their mountain soli-The var. umbrosum has more dense and somewhat shorter fronds, and it is difficult to say which of the two is the more charming. Both are fine additions. Another beautiful ally of the Kil-laraey Fern is T. Luschnathianum, from elevated regions in the Western World. This climb up trunks or rockwork with great rapidity, its rhizome being more slender than that of T. radicans. In texture it is exquisitely transparent, the fronds, which "feather" almost from the base, often hanging with moisture like glittering emeralds. The fronds vary from 6 to 15 inches in length, and are highly decompound. In its native forests it climbs like Ivy to a great elevation, and in cultivation festoons stumps, trunks, &c., in a fashion which is simply eachanting. The same cool temperature suits them

— A BULB SHOW AT HAARLEM.—At a meeting of the Dutch Society of Bulb Cultivators, held on March 31, it was decided to hold an exhibition of flowering Hyacinths, Tulips and other bulbous and tuberous rooted plants at Haarlem, from March 20 to 24, 1885, on a larger scale than has ever been attempted in Holland before. This is the third of the quinquennial series of exhibitions organised by the Society, and it will also commemorate the twenty-fifth year of the Society's existence. We hope shortly to be able to announce further particulars.

—— GARDENING APPOINTMENTS,—Mr. EDWIN BECKETT, lately Gardener at Sandown House, Esber, as Gardener to Hr. Hucks Gibbs, Esq., Aldenham Park, Elstree, Herts.—Mr. George Brown, late Foreman, as Gardener to His Grace the Duke of Buccleuch, Bowhill, Selkirk, N.B.—Mr. CHARLES BLICK, Foreman at Hayes Place, Beckenham, as Gardener to F. Narburger, Esq., Summerfield House, Elstree, Herts.—Mr. Blackburne, lately at Snowden, Ryde, Isle of Wight, as Gardener to JAMBS SCOTT, Esq., Elmstead Grange, Chislehurst.—Mr. Ch. CATCHPOLE, late Gardener at Ravensbourne Park, as Gardener to Miss FANNY HILL, Acacias, Dulwich.—Mr. MESENGER, as Gardener to HY, WATERS, Esq., Langley Lodge, Beckenbarn.

Notices of Books.

Supplément aux Fleurs de Pleine Terre, &c. Par Vilmorin-Andrieux et Cie.

Messrs, Vilmorin's book, entitled Les Fleurs de Pleine Terre, consisting, as it does, of carefully drawn up descriptions of garden flowers, and copiously illustrated with small but characteristic woodcuts, is a book of unquestionable utility-a fact made evident, amongst other things, by the large use that has been made of it by subsequent compilers. The last edition of that work, we are surprised to find, dates as far back as 1870, since which time numerous additions have been made to our hardy plants. In the present supplement the authors have extended their programme, so as to include plants which can be grown out-of-doors for the greater part of the year, but require the protection of a frame or heated pit during the winter in Northern France, and may be cultivated throughout the whole year in the open ground in the extreme southern and western districts. MM. Vilmorin tells us that a selection has been made so as to exclude plants of inferior merit, of delicate constitution, those which are not yet sufficiently tried, or which are otherwise unsuitable for general cultivation.

It may serve at once to illustrate the nature of the present supplement, and the progress of horticulture, to say that Begonias necupy seventeen pages, Chionodoxa finds a place as also do single Dahlias, the so-called double Gaillardias, hybrid Hellehores, Papaver umbrosum, the newer kinds of Petunias, Phloxes, Primula rusea and other species, China Asters, and many others. The descriptions have evidently been drawn up de visu, and are not merely paraphrased accounts taken from books, as is the case with so many garden compilations, while as to the illustrations we cannot better indicate their character than by reproducing some of them-for the privilege of doing which we are indebted to Messrs. Vilmorin.

Fig. 95 shows a bunch of the Chrysanthemum Anemones (A. coronaria var.), in which the outer perianth segments are relatively small, while the stamens and pistils are more or less completely replaced by narrow strap-shaped petaloid segments. The first varieties of this section were, we are told, raised some fifteen years ago by M. Bahuaud Liton, nurseryman, of Nantes, and now there are many named varieties of different colours. Fig. 96 represents flowers of the Caen race, called in England Poppy Anemones (A. coronaria var.), a robust strain similar to the preceding, but in which the outer perianth-segments are large. Anemone fulgens (fig. 97), the A. hortensis of some writers, is wild in the South of France, and even in the wild state is extremely variable in colour. "In addition," say MM. Vilmorin, "to the numerous lilac and reddish-flowered forms often cultivated under the name stellata, there are two others so distinct as by some to be considered as distinct species. One is the Peacock Anemone, with broad flowers of the richest colour, but with a yellow eye; the other is the Pyrenean form of A. fulgens, in which the flower is self-coloured of the must brilliant scarlet bue. This variety is rather less tender than that which grows in Provence, and requires less heat to enable it to flower. The first leaves are thrown up from the dark fleshy root-stock in the autumn, and are more or less five-lobed; those produced subsequently in spring are much more divided, and reduced to linear segments. Growth ceases about the end of June, and the plant goes to rest for six or eight weeks—a period most favourable for division and transplantation. Anemone fulgens is easily reproduced from seed, the seedlings producing flowers of varied hues from white to bloodred, and sometimes with the stamens and pistils replaced by petaloid segments, as shown in fig. 98.

Home Correspondence.

What is Raising?—I am tempted to ask for a clear definition of the term "a raiser" as applied to plants. That all gardeners are raisers in a certain sense there can be no doubt, but in this case the



FIG. 95 -CHRYSANTHEMUM ANEMONES.

appellation is intended to refer only to new plants of any kind. Generally all who raise distinct novelties from seed have the merit given them of being the raisers, even though the raising was accidental on their part. In the case of newly imported



FIG. 96,-POPPY ANEMONES,

plants the importer may well claim to be regarded as plants the importer may well claim to be regarded as the introducer, but certainly not as the raiser. Then there remains that section of novelties the product of plant variation, and as these are not the creation of any man's labour, but really are the accidental products of Nature, it is not fair that any one should have the title of raiser given for such novelties. Such plants originate, but are not raised. Even with seedling raised novelties there are marked differences in

the merit of origination. Thus one man may labour through careful cross fertilisation for certain ends and obtain them. To such breeders the claim of being obtain them. To such breeders the claim of being regarded as a raiser is an indefeasible one. No matter whether it be a stove or greenhouse plant, a florists flower, a fruit, or even a new vegetable—as, for instance, Peas or Potatos—the producer is the raiser incontestably. But many very good novelties come into the world by mere chance, as it were, without the originator, who sowed the seed, having done the least thing, or made the slightest effort to originate. The novelties may be meritorious, but the person who got them in the first place can claim no merit. Before any one's claim to place can claim no merit. Before any one's claim to be regarded as a raiser is admitted, it should be shown that he laboured to obtain what had resulted.

An Old Gardening Book,—I picked up lately an old gardening book—black letter—which has some of the must remarkable hints in it possible to imagine. It occurred to me that a few of them might fill a spare corner in the Gardeners' Chronicle with acceptance to the general reader, so I take the liberty of sending you a copy of title-page and introduction. If you think it desirable I would with pleasure copy a little of the contents. Wm. Swanston, Belfast.

"The Orchard, and the Garden CONTAINING CER-taine necessarie, secret and ordi-narie Knowledges in Grafting and Gardening

Wherein are described sundrie wais to graffe, and diuerse proper new plots for the Garden

Gathered from the Dutch and French Also to know the time and Season, when it is good to sow and replant

London Printed by Andrew Islip 1597.

Here follow certaine common instructions, how the stump must be chosen, whereupon you will graffe or

"Every diligent householder who will plant, should chuse lhereto a convenient place, to the end that the wild beast chaw not, nor paire the plantes, or if they be young, wholly eate in peeces, which to avoyd, is need-full to be in a towne or closed orbitant, where there be not too much shadowes, wherein be a sweet ground well muckt, tilled and turned.

" Every plant will have foure things.

"First moistness, so that the seedes or stump be moist or greene.

or greene. "Secondly a convenient place, which hath such earth as will lightly be rubbed to pouder, and that the sunne may come to it. for where there is fithly lone, a leave ground or sandy, or dry, burned, or salt ground, there is nothing good to be planted, to have any continuance: Neverthelesse where the ground is lean, there you must give him more dung. In a fat ground not so much. You must take heede, that the ground be not too moist nor too dry. You must not muck the trees with hog's dung.

nor too dry. You must not muck the trees with hog's dung.
"Phirdly. Amediate water or nourishing moystnesse, therefore be those orchards best which are situated between two waters, for those that are placed by a water side, remaine still yong and fruitful, and have commonly the barke smoother and thinner than the others. And those trees are more fruitfull than others which are planted in a valley, or in the lower part of a deep thill: for from those hils may come to them nourishment and moistnesse, and the ground which is so situated, is such fruitful but hee that cannot get for his trees such a ground, must with difference seeke, if he may bring to his trees a little springe or pond, of which the trees may sometimes find some reviving, and if you may not have any of those, and have a garden, who by it self is naught; the trees will grow with thick rootes, which hindereth the growing of them, and diet them at reason.

length.

"Fourthly, The aire is required, which must be agreeable to them, and of complexion to beare, for there be some trees that doe prosper in all aires; to wit, apple and peare, cherry and plumtrees. Some will have a cold aire, to wit, thess-nut trees; and some a very warm aire as the palm and pepper-trees; therefore they be rare with us. That plant which hath these foure thinges shall prosper; and if they want on or more of these foure things, they will decay and their prospering perish."

Tillandsia usneoides,-The woodcut in the Gardeners' Chronicle, p. 145, probably represents, not the Lichen Usnea, but the Bromeliad Tillandsia usneoides, which grows in the situation mentioned.

Ellam's Dwarf Spring Cabbage.—Of the many varieties of spring Cabbages that I have grown, I find this to be the best, as regards hardiness, earliness, and compactness of shape—it is, in fact, the *lean ideal of what a Cabbage for a gentleman's table should be. Sown on July 27 jast, with the following varieties:—Early Heartwell, Improved Nonparell, Battersea, Early Vork, Imperial, &c., we are now cutting splendid heads

[—] Kohler's "Medizinal Pflanzen,"—We mention this work, which is coming out in parts, for the sake of calling attention to the coloured plates, which are excellent representations of plants of medical interest.

Wilkomm's "Hustrationes Flore Hispanie insularumque Balearium" (Williams & Norgate) has reached its eighth part. The plants figured are Slaymbrium Assoanum, Umbilicus Winkleri, Saxi-raga eriobatas, S. Cossoanian, Valeinan Jongifiora, Centranthus nevadensis, Digitalis nevadensis. D. dubia, Chænorbinum macropodum, C. robustum, C. aregnoa dubia, Narcissus minutiflorus, and N. cernuus.

of Ellam's fully three weeks in advance of the other varieties, and while 20 per cent. of the other varieties have bolted, not 2 per cent. of Ellam's bave done so. I can fully reccommend this variety to all who have not given it a trial. ? ?. Lowry, Edment, Mill Hill. [The Fruit Committee recognised its merits by awarding it a First-class Certificate on Tuesday. Ed.]

Bees and Intercrossing of Species. — At p. 456 a correspondent signing himself "North Norfolk," after commenting on bees gathering pollen from different flowers, goes on to say, "From this fact we see why the bees cause no intercrossing of species of plants; they only intermix the pollen of different plants of the same species." This statement surely cannot be the result of his own observations, if so, they are certainly of a somewhat superficial character. A bee on leaving its hive for the purpose of collecting pollen, will occasionally return with pollen from different genera and species of plants, and will sometimes during a single journey visit two species of the same genus, thereby becoming a likely agent, where possible, in the intercrossing of species. For the purpose of fortifying myself with facts for a reply to your correspondent, I have, since reading his note, been closely watching bees collecting pollen in a greenhouse filled with flowering plants, and here are the first three cases, which may perhaps be taken as typical ones. Bees No. 1 and 2 gathered pollen extended.

animal creation. Does "North Norfolk" suppose that when bees are visiting flowers they have any other object in view than in satisfying their hunger and laying up stores for future use? Or is he of opinion that they make themselves thus busy and work hard to collect honey for him and others to take from them and enjoy? Surely he cannot think this; and although much has been written to show their utility in fertilising and setting flowers, I very much doubt if their agency is required at all. "North Norfolk" avers that bees do not, and never can, make comb from pollen, but if not, will he tell us what they gather it for and what they do with it? as I, and perhaps others, would be glad to be enlightened on that bead. "North Norfolk" may know a good deal about the little friends he stands up for, but it is evident be has much to learn about plants, or he would not possess the erroneous idea that it is possible for one distinct genus to cross with another, as he appears to suppose would be the case if bees went from a Wallflower to a Peach tree, as no doubt many of them do, although he seems to think that a portion of the bees, when they leave the hive, go to no kind of flower, and confine themselves to that, and the others to quite different blooms, and so on; but, if my observation is correct, instead of this they just take all, as it suits them, that comes in their way. It strikes me that we should have things rather mixed if we had to trust to

which requires no explanation like that lately suggested by "C. W. D." M. \mathcal{F} . B.

The Setting of Fruit Tree Blossoms.—There is an old saying that one should not hallou till he's out of the wood; and though it is as well to be cautious, and oot over-jubilant, while there is danger, we yet have cause for some degree of rejoicing, for just at the nick of time when things seemed most critical through the cold winds, and fruit trees of the early flowering kinds were in great danger, a change came, and the weather set in warm on April 1, and has continued so ever sioce. The effect of a bigher temperature, accompanied with sun, has been magical, as at once Apricots that had been hesitating about swelling could stand still no longer, but went away with a rush, increasing in size at such a rate that the difference could be plainly seen from day to day, and now there are many as big, or bigger, than the top of the finger. If we get no frost after this, and no adverse change, the crop will be great, as trees were literally smothered with bloom, the larger portion of which set, and therefore the work of thining will take up much time, and afford quantities of green Apricots for cooking and tarts. Apricots are not the only trees benefited, for Peaches and Nectarnines were in full blossom at the end of last month and they look much strengthened by the solar rays and the nice warm state of the air, the combined



FIG. 97.—ANEMONE FULGENS.



Fig. 98.—Double-flowered anemone fulgens. (see p. 488.)

clusively from Spiræa (Hoteia) japonica, and in something like ten minutes they were laden and on their return journey. No. 3 was really a ubiquitous little gentleman, the first flower he visited being Begonia semperflorens, afterwards Cyclamen persicum, and in quick succession, Deutzia gracilis, Azalea indica alba, and a second white variety belooging to the same geous and species. If "North Norfolk" has access to a greenbouse in which are flowering specimens of the plants above mentioned—and of course a hive of bees near at hand—he will doubtless be able to convince bimself of the accuracy of what has just been stated. In the study of both bees and flowers there is a wide field for research, and it may seem hardly necessary to say that many of the theories of such old writers as Huber and Aristotle, whom your correspondent mentions, are nearly if not quite ignored by many of the more recent authorities. J. Horsfield, Heytesbury.

bury.

— Under the above heading a correspondent signing himself "North Norfolk" takes me to task for what he is pleased to call my want of respect for his frieads the honey-bee, and the narrow-minded view, as he terms it, I take of them as only robbers, obeying the laws of Nature and their own instincts to live. I know there is a good deal of sentiment in this world of ours, and it is all very well in its way, but neither he nor any one else can get away from the fact, that my statement is a pretty correct one, and that it not only applies to the industrious insects named, but to the whole of the

the forbearance of insects in their visits to certain flowers to prevent crossing; but in matters of this kind great wisdom is shown, and "Thus far shalt thou go, and no farther," is the veto of II lim; and it is just as safe for bees to flit where they will as it is for sparrows to be in the fowl-yard with the hens and turkeys, for though they are so nearly allied, who ever heard of a cross? J. Sheppard.

Double Daffodils.—It is a popular notion that if single Daffodils are brought into a garden from the wood they will in a few years become double. Though this is not true, it is equally incorrect to infer that single species and varieties never become double. I have for years cultivated Narcissus semi-partitus, and it has always remained single to this year, but now within the divided crown new laminar are formed, resembling tather the external divisions than those of the crown, and of a paler colour. They arise partly from the style and partly from the upper stamens, and in one of the laminar there is already a dishatothement or oulning—a point which often requires notice in the consideration of double flowers. No biforus is often regarded as a good species, but the remark of Haworth is perfectly correct, that in the capsules there is not a trace of seeds, at least in the cultivated plant. Patches of this Narcissus were extant in the old garden of Fotheringhay Castle, near the river Nen, twenty years since, but now they have vanished. Parkinson's clipt Narcissus is a curious form, which I had from Mr. Wilson Saunders, and

influence of which have decided matters, and caused a fine set of fruit. Plums seem to be taking advantage of the favourable times, as they are hastening to unfold their bloom, and many sorts on suitable aspects have already done this, and look quite white, so full are they with their clusters of flowers. Standards are crowded with buds, and will soon be a sight, as well as Cherries, for none can lag behind now the warm breath has passed, and keeps passing, giving new life to all vegetation, which seems fairly to have awakened now, and will no longer be checked. Pears are opening fast, and the genial atmosphere will just suit them, as the anthers will come strong and full of pollen, when there is sure to be a good set. Apples will not be in bloom for another fortnight or more, and we can only hope that the fine weather we are now enjoying will last on till then. 7. S.

Which is the Best Table Potato at Present?—Would you allow me to ask this question through your columns? I find the Champion (Scotch), when cooked from this forward, black and patchy as if bruised, and this complaint is general. I am aware Magnum Bonum heads the London market, and is both tender and sweet, but it is not "floury" enough for me and others. Reading Hero seems to fill the void in that respect, but my experience of it is limited. Schoolmaster and Paterson's Victoria would come next, but are rather liable to disease. Cosmopolitan is more of an early kind, and I have found White Elephant and Ecauty of Hebron liable to

the same objection as Magnum Bonum, Perhaps some of your correspondents would give their experience. W. J. M., Clonmel.

Propagating Dracæna Goldieana (see p. 155).

Early in the winter I cut four tops off, put them singly in small medicine bottles filled with water, and singly in small medicine bottles filled with water, and plunged the bottles in a bottom-heat of 80° to 90°. A small piece of charcoal put in each bottle prevented the water from getting foul. Six to eight weeks afterwards the cuttings had nice roots, when they were potted, and are nice little plants now. C. Wissenbach, Royal Gardens, Wilhelmshöhe.

Reports of Societies.

Royal Horticultural: April 8.

SCIENTIFIC COMMITTEE. - Dr. Maxwell T. Mas-SCIENTIFIC COMMITTEE.—Dr. MAXWEII 1. Massettes, F.R.S., in the chair. Present: Messrs. G. Murray, W. G. Smith, Pascoe, Smee, A. W. Bennett, Houston, Colonel Clarke, A. Grote, G. F. Wilson, and Rev. G. Henslow, Secretary.

Fingus Causing Cracks in Apples.—This was determined to be Septoria Ralfsii.

Datata Experiment of Chimich.—It was reported.

determined to be Septoria Ralfsii.

Potato Experiments at Chiswick.—It was reported that an experiment designed to test the validity of the Jensenian plan of protection had been instituted at Chiswick, on March 29, in the presence of some members of the sub-committee appointed for the purpose. Tubers of Adirondack and of Recorder were carefully examined, and those which appeared free from disease were planted in two series. Each series consists of six rows 3 feet apart, and of fifteen series consists of six rows 3 feet apart, and of fifteen tubers in each row 20 inches apart. One row is planted with cut tubers of Recorder, the next with whole tubers of the same variety, then come two rows of Adirondack to correspond; the fourth and fifth rows of each series are control rows, intended to be moulded in the ordinary way. One series is to have the haulms bent over at the proper time; in the other series, consisting of the same Potatos treated in the same manner, the haulms are to be left erect. The rows are further divided horizontally into five divisions each containing three tubers, and which wishes each containing three tubers, and which wishes each containing three tubers, and which wishes each containing three tubers, and which wishes. sions, each containing three tubers, and which will be moulded up on the Jensenian plan on June 15, June 30, July 15, July 30, and August 15, respec-tively, or as near those dates as possible, the requisite proportionate interval of time being in any case

attended to. Podisiona Juniperi.—Mr. Smee showed specimens of this yellow fungus on the branches of Juniper, which led to a discussion as to its alleged connection with Roestelia lacerata on the Hawthorn.

Calceolaria.—Mr. Smee also exhibited monstrous

flowers of this plant : referred to Mr. Henslow for

Calceolaria.—Mr. Since also exhibited monstrous flowers of this plant; referred to Mr. Henslow for examination and report.

Crossed Primross.—Colonel Clarke showed a variety of hybrid and crossed Primroses, showing great diversity of colon. Colonel Clarke mentioned that he had for years repeated his experiments with a view to fertilise the Cowslip and the Primrose, and view to fertilise the Cowslip and the Primrose, and view to fertilise the Cowslip and the Primrose, and view to fertilise the Cowslip and the Primrose, and view to fertilise the Cowslip and the Primrose, and view to fertilise the Cowslip and the Primrose, and to view to fertilise the Cowslip and the Primrose, and to view to fertilise the Cowslip and the Primrose, and Company and the Primrose, and Uromyces are exceedingly common upon Dean plant during summer and autumn, but the Acidiospores of this fungus have been much less frequently seen. Of course it is to Professor de Bary that we owe the elucidation of the fact that the life cycle of the Bean Uromyces is coludes an Ecidium. It is none the less interesting to repeat his experiment of sowing germiating teleutospores of the Uromyces upon a healthy Bean plant, and watching the development, first of the spermogonia and then of the Ecidiospores. If any one still doubt the late that certain Uredines are the spermogonia and then of the Æcicliospores. If any one still doubts the fact that certain Uredines are heteroccismal in their habit, and attempts to justify their doubts, as has been the case in times past, "because the teleutospore has not reproduced itself, but a totally different fungus—an Æciclium," it would be interesting to know by what perversion of the powers of the human intellect the fact that the teleutospore of the Uromyces in question gave rise to this Æciclium, and not to a Uredo or teleutospore, can be got over. Persons possessing high imaginative power have suggested that these parasitic fungi exist in the tissues of all plants, especihigh imaginative power have suggested that these parasitic fungi exist in the tissues of all plants, especially those which have been long under cultivation, in the form of "plasms," and that when the spores of any Uredine—it does not appear to matter much which—fall upon the surface of the leaves of such plants in the surface of the leaves of such plants are to the surface of the surface and the surface of the surface of the surface of the surface and the surface of they so irritate the structures of the host plant as to cause the latent plasma to produce the fungus. This cause the latent plasma to produce the fungus. This we are asked to believe, although not a single fact can be adduced in its support! It would be as reasonable to say that a crop of Onions does not arise from the Onion seed originally sown but from an inherent Onion-producing power which exists latent in our garden and which can only be called into action by sowing Onion seed which when it germinates so irritates the surface of the ground that it bears a crop of Onions. The four Bean plants sent herewith of Onions. The four Bean plants seen nerewin were infected with the germinating teleutospores of the Uromyces on February 6; on the 29th the spermogonia began to appear. It was not until the end of the month that the perfect Æcidium was developed. Canker on Apples.—Mr. Flowright sent a series of specimens of Apple twigs affected with canker, and more or less covered with the fungus Nectria ditis-

sima, to whose growth the disease is now attributed by some observers. The remedy is to cut out the diseased patch and paint over the wound with warm coal-tar. Further remarks on the subject are de-ferred till we have the opportunity of publishing Mr. Plowright's sketches.

Assam Tools, &.c.—The Chairman exhibited some tools used by the natives of the Naga Hills, consisting tools used by the natives of the Naga Hills, consisting of a dao, or knife, and its scabbard, an iron boe, sundry comb-rakes made of Bamboo or light wood, &c. Rice is the staple food plant, grown on the slopes of the mountains, by aid of an elaborate system of irrigation. The tools had been sent by Mr. Horace Livesay, and attracted much attention. Seeds of various kinds of Rice, Millet, and Pulse were also exhibited. The natives were spoken of as a fice race, showing considerable civilisation, but over-endowed with nurreality. with pugnacity.

FLORAL COMMITTEE.—Present in Section A.:
John Fraser, Esq., in the chair; Messrs. T. Moore, J.
Laing, F. R. Kinghorn, J. Woodbridge, H. Herbst,
J. Hudson, H. Williams, H. Ballautyne, J. Dominy,
J. O'Brien, E. Hill, and the Rev. G. Henslow.
Section B.: Shirley Hibberd, Esq., in the chair;
Messrs. H. Turner, H. Bennett, W. Bealby, G. F.
Wilson, J. James, G. Duffield, J. Douglas, H.
Cannell, and W. B. Kellock. In the new plant way
the special feature of the meeting was a group of new
Iodian Azaleas, exhibited by M. Louis van Houtte,
of Ghent, and which formed a centre of interest for
the entire day. M. van Houtte brought out his lodian Azaleas, exhibited by M. Louis van Houtte, of Ghent, and which formed a centre of interest for the entire day. M. van Houtte brought out his plants in excellent condition, and received no less than nine First-class Certificates, vix., for Souvenir du Duc d'Albany, an enormously large single white, individual pips measuring 4½ inches in diameter, of remarkable substance for the size, and of great purity; Comte de Paris, pink and white, with some rose stripes, and nicely spotted with dark crimson, extra fine single; Comte de la Torre, white, flaked with lake, a single flower, with a few of the flaments petaloid; Comte Adrieu de Germiny, single, dull salmon colour, with cinnamon spots, and blotched with bluish purple on the upper segments; John T. D. Llewelyn, double, flesh tinted white, the centre prettily spotted, a fine shaped flower; Souvenir du Prince Henri, a very good shaped double, bright rose; Mr. B. S. Williams, a large single, bright rose with pale spots; Mdlle, Marie Stockman, a double white, pretty in shape, but somewhat flimsy in texture; and Baron Natbaniel de Rothschild, the same variety as Mr. Tartner and Messrs. Vettch received a First-class Certificate for on May 8 last year. In a small group of Orchids from Sir Trevor Lawrence, specially noticeable were flowering examples of Odontoglossum crispam guttatum, a very pretty variety of medium size, spotted with rich chocolate-red; Oncidium noticeable were flowering examples of Odontoglossum crispum guttatum, a very pretty variety of medium size, spotted with rich chocolate-red; Oncidium cucullatum giganteum, an enlarged form of the ordinary type, and very bright in colour; and Cypripedium ciliolare. Messrs. Shuttleworth, Carder & Co., in addition to a splendid mass of flowering plants of the pretty Masdevallia Shuttleworthii, sent a good showy Odontoglot, also named Shuttleworthii, sent a crispum with broad senals and petals, white, heavily a crispum with broad sepals and petals, white, heavily blotched with chocolate or warm brown, the lip blotched and fringed. Messrs, Veitch's contributions included Davallia Mariesii cristata, a form with the tips of the fronds crested; a most interesting hybrid Orchid, Phaius irroratus purpureus, the result of a cross between Phaius grandifolius and Calanthe vescross between that of a Phaius, and the flowers itia, the habit being that of a Phaius, and the flowers a close resemblance to Calantbe, white, with the lip dull purplish brown—it was first raised by Mr. Dominy dull purplish-brown—it was first faised by Mr. Dominy and lost, but has again been produced by Mr. Seden; Amaryllis Virgo, a medium-sized scarlet, with white nervation, and a white band up the segments; and Amaryllis Murillo, a medium-sized, rich deep crimson. Amaryllis Nurillo, a medium-sized, rich deep crimson. Mr. B. S. Williams, amongst other new plants, had a new form of Adiantum cuneatum, named strictum; and Mr. W. Nicol, The Nursery, Lower Merton, Surrey, showed a very nice double white Indian Azalea named Princess of Wales, a full double, and remarkably pure. Messrs. Barr & Son again sent a fine display of Daffodils, and received Certificates for three new ones, viz., Narcissus incomparablis Queen Sophia of the Netherlands (a popular name, that surcly will not meet the views of M. Krelage as to brevity), yellow, with orange crown; N. Dicolor, white, primrose coloured trumpet; and N. Leedsii Queen of England, white with yellow crown. Mr. Herbst, of Richmond, had a nice batch of cut blooms of Narcissus poeticus var. biflorus, a fine variety with two flowers on a scape. Yet another addition to the magnicoronate group came from addition to the magnicoronate group came from Messrs, James Dickson & Sons, of Chester, in Narcissus incomparabilis James Dickson, a noble flower in all respects, and of a clear yellow colour. In a

small stand of Auriculas Mr. Turner had Mr. Douglas' new white-edged flower called Conservative; and a new shaded alpine, maroon shadir g to dark rosy-purple, called Mungo McGeorge. Messrs. Veitch & Sons had also Azalea ledifolia, a double flower of a soft rosy-lilac colour, a distinct ard conspicuous plant, that would prove of great use as a decorative object where soft undecided colours are decorative object where soft undecided colours are desired, being the very counterpart of another Azaka shown by them, and named A. Caldwelli ignea, an abundantly flowered ragged looking subject, useful for cutting or for planting out as a foil to Azalea indica alba. This is evidently a sport from the older A. Caldwelli, which has purple flowers. A pretty pure white Cœlogyne occlata nitida, with just the faintest tinge of yellow in the throat, and a Cypripedium microchilum, a hybrid between C. niveum and C. Druryi C. vernixium, a bronzy-green flowered variety, with a dark purple striped dorsal sepal—a distinct looking bloom, of a large size; Leila flava and Deodrobium barbatum, a white flowered kind from Western India, of a large size; Jacka hava and Decutionium barola-tum, a white flowered kind from Western India, Mr. B. S. Williams, Holloway, showed a beautiful variety of Cattleya Mendelli gigantea of rare form and colouring, the small white Angræcum dependens, &c. Messrs, Cutbush & Sons, nurserymen, Highgate, colouring, the small white Angræcum dependens, &c. Messrs. Cutbush & Sons, nurserymen, Highgate, showed an interesting group of flowering plauts, among them being many of the New Holland section, now so little found at exhibitions, such as Boronia pinnata and B. tetrandra, Eriostemon scabra, Pimelea Kippergiana, Leptospermum bullatum, and Plumbago rosea, Kennedya Comptoniana and K. Iliacioa; a panful of Choisya ternata; Epacis compacta, a slender flower of a vivid scarlet; Darwinia fuchsoides, a small well-bloomed plaut; Hypocalymna robusta, a Boronia-like subject, and others, for which they obtained a Silver Banksian Medal. Messrs. Barr & Son, Covent Garden, again showed a collection of Narcissi, including such new varieties as N. Barri albus, John Nelson, Tridymus, Tridymus aurantius, incomparabilis natrantius, incomparabilis Leedsi, Mr. T. B. Llewelyo, Backnousei, and others that will be found mentioned in our list of certificated plants. Mr. Heory Bennet brought fine large cut blooms of the Rose Her Majesty, for which he received a Vote of Thanks, Mr. R. Dean, of Ranelagh Road, Ealing, exhibited his sport from Myosotis disstititora, with a great quantity of red-bloom flowers mixed with the blue; and his Bedfont Yellow Wallflower, which loses nothing by comparison with the Belvoir Castle variety, which was also shown for comparison; for these he was awarded a Vote of Thanks. Mr. Woodbridge, gr. to by comparison with the Belvoir Castle variety, which was also shown for comparison; for these he was awarded a Vote of Thanks. Mr. Woodbridge, gr. to the Duke of Northumberland, Syon, showed fine cut blooms of a Crioum-like plant, Hymeocallis macrostephana. These were of great substance and deliciously scented. Mr. T. Sibbald, nurseryman, Eishop Auckland, had Herniaria glabra aurea. A Vote of Thanks was given to Sir Charles Struckland, Hildenly, Malton, Yorkshire, for two plants of Cattleya citrina in bloom, the one in a basket and the other fastened to a block of wood. Mr. S. Cook, gr. to De B. Crawshaw, Esq., Rossfield, Seveooaks, received a Vote of Thanks for Dendrobium Cambridgeanum. A showy collection of Rhododendrons and Ghent a Vote of Thanks for Dendrobium Cambridgeanum, A showy collection of Rhododendrons and Ghent Azaleas came from Messrs. Lane & Son, to which was awarded a Silver-gilt Knightian Medal. Mr. Thomas Ware, Tottenham, obtained a Silver-gilt Banksian for his collection of Narcissi and hardy flowers, which were shown by him in a beautifully fresh condition. A Bronze Medal was awarded to Messrs, J. & J. Hayes, ferrists, Edmonton, for their collection of varieties of Pelargoniums.

The awards made were :

FIRST-CLASS CERTIFICATES.

Section A. To Sir Trevor Lawrence, Bart., M.P., for Cypri-pedium ciliolare. To Sir Trevor Lawrence, Birt., M.P., for Odo its-

ossum crispum guttatum.

To Sir Trevor Lawrence, Bart., M.P., for Oacidium

To Sir Trevor Lawrence, Bart., M.P., for Oleidium eucullatum giganteum.
To Messrs. Shutleworth, Carder & Co., for Olonto-glossum Shutleworthi.
To Messrs. James Veitch & Sons, for Phaius irroratus

purpureus X.

To Messrs. James Veitch & Sons, for Davallia Mariesii

cristata.

Mr. B. S. Williams, for Adiantum euneatum

strictum.

To Messrs. Barr & Son, for Narcissus incomparabilis

Queen Sophia of the Netherlands.

To Messrs. Barr & Son, for Narcissus bicolor J. B. M. To Messrs. Barr & Son, for Narcissus Leedsii Queen

of England.

To Messrs. James Dickson & Sons, for Narcissus incomparabilis James Dickson.

To Mr. H. Herbst, for Narcissus poeticus biflorus.

Section B.

To M. Louis van Houtte, for Azalea indica Souvenir Duc d'Albany.
To M. Louis van Houtte, for Azalea indica Comte de

To M. Louis van Houtte, for Azalea indica Comte de

To M. Louis van Houtte, for Azalea indica Comte trien de Germiny. To M. Louis van Houtte, for Azalea indica J. T. D.

Llewelyn.
To M. Louis van Houtte, for Azalea indica Souvenir

To M. Louis van Houtte, for Azalea indica Mr. B. S. Williams.
To M. Louis van Houtte, for Azalea indica Mdlle.

10 Mr. Bours van Frotzen Marie Stockman, To M. Louis van Houtte, for Azalea indica Baron Nathaniel de Rothschild. To Mr. W. Nicol, for Azalea indica Princess of

ales. To Messrs. James Veitch & Sons, for Amaryllis Virgo.
To Messrs. James Veitch & Sous, for Amaryllis

Mr. Turner, for alpine Auricula Mungo

McGeorge.
To Mr. Turner, for show Auricula Conservative (Douglas).

FRUIT COMMITTEE .- Present : Mr. H. J. Veitch, FRUIT COMMITTEE.—Present: Mr. H. J. Vettch, in the chair; Messrs. John Lee, J. Willard, S. Lyon, G. Goldsmith, G. T. Miles, W. Denning, R. D. Blackmore, and Geo. Bunyard. A collection of Apples that were, as a whole, in usable condition, was exhibited by Messrs. Rivers & Sons. The number of dishes shown was considerable, and on a future occasion we shall notice the sorts which have kept the team we to kind the M. Coldesith, Hollanden. best up to this date. Mr. Goldsmith, Hollanden, showed Winter Queening, Northern Greening, Golden showed Winter Queeoing, Northern Greening, Golden Knob, Ribston, Court-pendu Plat; Mr. G. Fennel, gr., Fairlawn Park, Tonbridge, Brabant Bellefleur; and Mr. W. Horley, Toddington, Beds, six seedling Apples. Messrs. Veitch & Sons again exhibited some good examples of Ellam's Dwarf Spring Cabbage, a valuable early variety raised by Mr. Ellam, now of Cliveden, and sent out a year or two ago. It was awarded a First-class Certificate.

Royal Caledonian Horticultural.—The spring show of this Society was held in the Waverley Market, Edinburgh, on Wednesday and Thursday, April a and 3, and that it was a great success in a popular and commercial aspect may be judged from the fact that during the two days 21,000 visitors passed the turnstiles, the amount taken at the gates being about 4,75. It may be said that the general opinion was, that in the history of the Society there had never been such a fine display of blossom. And this favourable verdiet is applicable to all departments. For instance, as to Orchids, we question whether a larger number in excellent condition were ever staged in Edinburgh. The Azaleas formed a special feature, and alike in size of plants and profusion of bloom were exceptionally fine. Rhododendrons showed fewer evidences of over-forcing than has been witnessed on former occasions, but they were none the worse but all bloom were exceptionally fine. Khodoofendrons showed fewer evidences of over-forcing than has been witnessed on former occasions, but they were none the worse but all the better for that, and the display was more than creditable. Of spring plants it were difficult to speak too highly. Hyacinths, though not so numerous as we have seen, were good both as to size and form, and the same remark applies to the Tulhis, Narcissi, and other bulbous flowers. Herbaceous spring flowers were never better represented, and their popularity was testified to by the crowds which at all times surrounded the tables. Occupying the greatest space, and having the place of honour in the central line of staging, were the competitive collections of nurserymen, for the table of plants for effect—so feet by ro feet. At the eastern end was the table of Messrs. Ireland & Thomson, Craigleith and Comely Bank Nurseries, who, as on many former occasions, were deservedly placed 1st; the 2d prize was active to the contract of effect, 'open to gardeners and amateurs, there was, it not a keen, at least an interesting competition. Mr. R. Grossart, gr. to Mr. Buchanan, Oswald Road, easily obtained the rst award, his stand including many good Orchids. Mr. Andrew Paul, Gilmore Place, was 2d, with a stand showing great taste in arrangement. The same gentleman also competed for the best six Orchids, and but this indexe could be the decided which were best as

with a stand showing great taste in arrangement. The same gentleman also competed for the best six Orchids, and here the judges could not decide which was best, so they gave them equal 1st, For a single Orchid Mr. J. Paterson was placed 1st, with a large plant of D. nobile, very freely and handsomely flowered, Mr. Wilkins luck again securing only 2d place, though his D. Paxtoni had some thirteen spikes of lovely blooms.

Turning now to the larger plants, it may be said that the competition for the collection of Comiferre is never extensive, seldom have we seem more than two entries. On this occasion Messrs. T. Methyen & Sons were 1st, in a very handsome and eveo lot of the rarer and newer sorts. Messrs, Cunningham, Fraeer & Co. were 2d, in a collection which was unequal, the best plant by far being a remarkably nice Thuioppis dolabrata. The Lawson Seed Company exhibited a very handsome collection of large plants, including Conifero, Palms, Dracenas, Yuccas, & E. Laf the collections of Rhodedendron's Messrs, R. E. Laf the collection of Rhodedendron

pots Messrs, Ireland & Thomson took leading honours with a lot finely grown and freely flowered. Nor were the plants staged in this class by the gardeners less well done, especially Mr. R. Gireve's 1st pitze lot. An interesting competition was that for twenty forced plants in bloom. First place was justly given to an attractive table furnished by Mr. W. Priest, Newbattle. The plants were evenly grown, well flowered, and not overforced, and included Lilacs, Deutzias, Gueldres Roses, Rhododendrons, Kalmiss, Azaleas, and the beautiful scarlet Salvia coccinea. The 2d lot was not so level in quality. Next in attraction to the Orchids for brilliancy of bloom, even if second to them, were the Azaleas. Here Mr. J. Paterson occupied his wonted place in the front rank. For the best four his huge pyramidal plants, one mass of evenly opened flowers, which hid the foliage, commanded admiration for cultural skill. Mr. Pratts and proper development of the property of the pro

about in the interestylenes class for the best weeks, and they were thoroughly worthy of the prize for quality of flowers and size of head. Mr. J. Pearson was 1st in the gardeners' class for the best dozen, his spikes quality of Howers and size of head. Mr. J. Pearson was 1st in the gardeners' class for the best dozen, his spikes being large and fully developed. Some thought Mr. H. Sime's 2d lot were more even than the 1st; but, taking them on the whole, they were not so large. For the best white no fault could be found with Mr. R. Lawrie's 1st, nor with Mr. George Lawrie's 1st prize six, there not being an indifferent spike in the latter. R. Stewart had an easy victory among the amateurs. The Tulips were well grown and equal, and the same may be said of the Polyanthus Narcissus. Cut flowers arranged in a greenhouse, exhibited by Mesrs, Mackenzie & Moneur, were of first-class quality, and in most cases the judges had a very invidious task in awarding the prizes. Of Ferns there was a fine display, occupying two large tables. The Challenge Silver Chup for four exotic Ferns was secured by Mr. G. Mackinnon, Melville Castle—his lot comprising normous, but far from coarsely-grown, specimens of Davallia Mooreana, D. bullata, very compact; D. insignis, handsomely shaped; and Leucostegia immersa. Foliage plants were well represented, especially Palms and Draceanas.

As night be anticipated from the season the fruit was not of muthe processure.

especially Palms and Dracænas.

As might be anticipated from the season the fruit was not of much account, yet the few Grapes forward were well kept and carefully finished. The two Pines were good, and the Apples were of more than ordinary excellence. A special prize was accorded to Mr. J. Brunton, Gilmerton, for a display of sixty-two varieties of Apples—all firm, smooth, and in admirable table condition. The vegetables were also worthy of commendation, more especially the collections, the Salads, the Lecks, and the early Potatos.

Sevenoaks Horticultural and Floral Society: April 2.—The second spring show of the above Society was held in the large ball-room at the "Royal Crown" Hotel. The day being very fine the attendance was large. The exhibits, which were numerous, were of a class unusually good for local shows, but were the same as this district is noted for. The Azaleas, arranged in line down the centre of the tables, were a feature admired by all, they being profusely bloomed—one in the "specimen plant" class, a white of large size, with an occasional pink stripe, being a mass of bloom, so close that but little foliage was seen; this plant was not tied down for show with numerous sticks, and was exhibited by Mr. Gillett, gardener to S. L. Devitt, Esq., Golden Green, Sevenoaks. Another noteworthy plant was Mr. Bolton's (gr to Mrs. Spottiswoode, Coombe Bank, Sevenoaks). Clivia miniata, in the stove and greenhouse plants, bearing twenty-live very fine spikes on well grown crowns. To describe the, numerous good things would take too much space, but the above pair words of the control of the complete of the control of the co Sevenoaks Horticultural and Floral Society : drobum nobile Wallichanum and two others; 3d, Mr. Bolton, with the not-offen-exhibited Brassia verrucosa and two others. Mr. Bolton was deservedly placed rist with four stove and greenhouse plaats, including the above mentioned Clivia, Azalea Criterion, Antunium Scherzerianum with twenty spathes and numerous buds, and Statice profusa, being a handsome quarettet; ad, Mr. Goodman with Rhododendron Dalhousianum, a fine thing; Caladium Meyer-

beer, &c.; 3d, Mr. Halton, gr. to Mrs. Swanzy, The Quarry, Sevenoaks. In the class for specimen plants Mr. Bolton again took 1st prize, with a very fine plant of Francisea calycian major, Mr. Gillett being ad with the Azalea; just above spoken of; Mr. Goodman 3d, with Clivia miniata. Mr. Bolton was the only competitor for Gloxinias. For four Azaleas Mr. Bolton was once more "in the van," being olosy followed by Mr. Gillett, and Mr. Halton took 3d prize. For Cinerarias Mr. Halton took 1st place, with a fine half-dozen, one purple one having a very massive head of bloom; he also had a very fine white variety: these two were well backed up by the other four—Mr. Staples, gr. th. Oppenheim, Esq. Chipstead Place, being 2d, and Mr. Goodman 3d. There were six entries in this class, and they formed a very fine three dozen plants. Amarylis, two plants for Dettinas Mr. Bolton was 1st, with a fine four, Mr. Gillett 2d, and Mr. Goodman 3d. For Dettinas, Mr. Goodman 3d. For Spirceas Mr. Staples was to the front, with four plants nearly 2 feet over—Mr. Beach, of the Borough Green Nursery, being 2d, and Mr. Bolton 3d. Por Roses brought but two competitors, Mr. Gillett taking 1st, and Mr. Halton 2d prize. Cyclamen (only one entry) fell to Mr. Cooke by but in Primulas competitors were seven, all told—the 1st prize being taken by a fine our doubles and two singles, grown by Mr. Staples; six P. ameena being ad—Mr. Goodman; 3d, Mr. Gillett. For nine Hyacinths Mr. Bolton was 1st, Mr. Staples 2d, Mr. Blundell, gr. to G. Christie, Esq., Westerham, 3d. Mr. belands for six Mr. Halton was alone. For four pots

six P, amoena being 2d—Mr. Goodman ; 3d, Mr. Gillett. For nine Hyacinths Mr. Bolton was 1st, Mr. Staples 2d; Mr. Blundell, gr. to G. Christie, Esq., Westerham, 3d. In the class for six Mr. Halton was alone. For four pots of Tulips Mr. Staples had a fine quartette, being 1st Garrying over seventy flowers; Mr. Bolton, with a fine lot, being 2d; Mr. Halton 3d. Narcissi, alpines, Auriculas were well shown, the 1st prize in the former and latter falling to Mr. Bolton; Mr. Staples' alpines being a very fine six of double Primoses and Polyandus in variety. These plants only require exhibiting more to become a rage again, as they were once before. For six cut flowers Mr. Cooke was 1st, with a box containing Odontoglossum Alexandre, Dendrobium chrystotoxum, Cypripedium Boxalbi, Cattleya Warsceniczii, and others; Mr. Bolton was 2d, with Dendrobium nobile, Hippeastrum anlicum, Statice profusa, &c., Mr. Goodman 3d, with Rhododendron Countess of Haddington, Bugmansia, Dendrobium nobile, &c. The pergrase and baskets of flowers were most tastefully arranged, especially the arrangement of Miss Kither, of Sevenoaks, being almost entirely wild flowers, and exceedingly light—Miss Tooth's basket and Mr. Halton's pergne being 1st prizes. Epergne.—2d, Mr. Beach; 3d, Mrs. Halton. Miss Kither's two arrangements ever set aside by the judges into a special class, and consequently were awarded two special prizes.

Beach; 3d, Mr. Bolton. Baskets,—2d, Mr. Beach; 3d, Mrs. Halton. Miss Kither's two arrangements were set aside by the judges into a special class, and consequently were awarded two special prizes.

The non-competitive exhibits included a group of plants from Mr. Carlton, gr. to Sir C. H. Mills, M.P., Bart.; twelve Hyacinths from Cutbush & Son, Highgate, being very fine; decorative arrangements by Mrs. Seale, the well known "exhibitress," of Vine Nurseries, Sevenoaks; Roses in boxes from Mr. Beach. All were highly commended. (An occasional Correspondent.)

Crystal Palace: April 5 and 6,—The first show of the year held at the Palace, if not quite so large as some spring displays in former years, was at least remarkable for the general excellence of the plants and cut blooms exhibited. The stands of cut flowers shown of the year held at the Palace, if not quite so large as some spring displays in former years, was at least remarkable for the general excellence of the plants and but blooms exhibited. The stands of cut flowers shown by Messrs. Barr & Son, of Covent Garden, could vie in quality with anything they have brought before the public at other places this season. Their display of Narcissi and Anemones, occupying a semicircular table round the entire front of the prosenium of the theatre in the central transept, was well set off by a line of dwarf Palms in the background. Messrs, Barr & Son cereived an extra prize for the collection, as did Mr. T. Ware, of Tottenham, for his more miscellancous collection of cut blooms. In this lot, besides the fine varieties of Narcissus, there were blooms of the rare Erythronium existing the standard of the standard sta from frequent removals; and to Mr. R. Clarke, Twickenham. A few stands of Amazyllis were to be found, but in comparison with the splendid examples now brought into notice elsewhere they were poor indeed. Nice, well bolomed, medium sized plants were shown in the competition for the best twenty-four Pelargoniums, Messrs. H. Williams & Son obtaining the 1st prize. Among their varieties were Scarle Gem, Albini, Defiance, Messrs. H. Williams & Son obtaining the 1st prize. Among their varieties were Scarle Gem, Albini, Defiance, Messrs. H. Williams & Son obtaining the 1st prize. Among their varieties were Scarle Gem, Albini, Defiance, Messrs. H. Williams & Gont Marchael and Marchael and Scarle Gem, Madame Favart, Wirginalis, and Mirandidre. In this lot were Eve, Rosetta, Edith, Triomphe de St. Mande, Lady Blanche, Metalliac, and Vivandidre. Cinearias formed one of the most brilliant features and most admired portions of the show. Mr., James, Woodside, was 1st for twelve; Messrs. Carter & Co., Holborn, and J. H. Hill, Hillingdon Place, 3d. Owing to the lateness of the season Primula sinensis was not in any great force, nor were the examples shown of much merit. The 1st prize was awarded to Messrs. Carter & Co., who had all their noted Holborn varieties, and the sorts Prince of Wales, a deep rose, having the beginnings of a double flower; and Snowtlake, a sort exhibiting a similar tendency. For the best tweety plants of Lily of the Valley the 1st prize was awarded to Mr. W. Watson, Newcastleon-Tyne, of Stough, for countering a similar tendency. For the best twenty-four plants, all of them being well flowered aslos for alpine varieties. Some neatly trained small specimens of Indian Azaleas were also shown by Mr. Curner, who was awarded the 1st prize for the best wenty-four plants, all of them being well flowered examples. Very good were Irma, a grand rosy-mauve; A. Borsig, Mrs. Turner, a pink margined with white, that plants rather smaller and more globular in shape. The competition for the best groups of stove and gree

VEGETABLE PRODUCTS OF SMVRNA

SESAME (SESAMUM INDICUM) .- This oleaginous seed is much cultivated in Asia Minor, chiefly in the seed is much cultivated in Asia Minor, emery in the valleys of the Meander, Cayster, and Hermus, also in the islands of Mitylene and Cos, and along the coasts of Caria, Lycia, Pamphylia, and Caramnia, but the produce of these coasts, that of Mersina excepted, is of a very inferior quality. Generally the Sesame of Asia Minor is exceptionally good. cultivation is extending to meet an increasing demand; and the chief consumers are France and Italy, then Holland and Russia. England and America take none. A considerable portion of the crop is consumed on the spot in the shape of oil. In France and Italy the cold-drawn oil of Sesame is used for salad, and also for perfumes, as it keeps longer than Olive oil, and is free from offensive smells. In France it is also in request to make soap and to grease machinery. The seed alone is exported and in sacks containing about half an imperial quarter each, the price averaging from 35 fr. to 40 fr. the sack, or 19s. the quintal (124 lb.), free on board. At Smyrna and Scala Nuova the oil is badly made, yet it is extensively consumed either in the manufacture of the local sweet called "halva" or for cooking purposes.

GALL-NUTS (QUERCUS INFECTORIA) .- The galls are formed by an insect (Cypips quercus folii) on the leaf of the native Oak, and are gathered when the insect is in the larva state. They are gathered chiefly at Magnesia, Alasheir, Koular, Ushak, and Pergamus. In Europe they are prized not only for their tanning properties but also for the valuable black dye which they yield. The galls are exported in sacks containing from 80 to 100 okes each (220 to 280 lb.) and are worth on an average £4 to £6 5s. the sack. There are three qualities, distinguished by their colours-black, white, and green. The export is one of small value, never exceeding 3000 sacks a year, valued at from £12,000 to £18,000. The largest share of it is taken by England and France. The export is sometimes largely increased by the crop from Mosul, shipped at Smyrna in transit for Europe.

VELLOWBERRIES are the fruits of a small shrub (Rhamnus infectorius) which grows chiefly in the neighbourhood of Kaiseria, Karahissar, Angora, and Chouem. Its fruit grows in clusters of berries not larger than Currants, and of a green colour; yet the juice expressed from them is a bright yellow, which is prized as a dye, and when mixed with Indigo gives a most brilliant and durable green. The berries are picked when young, [for they lose their colouring matter when fully ripe; the best qualities are in request in Switzerland, which they reach vid France and Italy. The greater portion of the remainder is taken by England. The berries are exported in sacks, containing about 300 lb. each. In the first three years of the series their price was about 40s. per cwt., free on board. In 1881 the price rose to 50s., and has since made a considerable advance, the peculiar yellow of this dye having become fashionable in Europe. Some twenty or thirty years ago, before the dye was imitated by aniline, these berries used to fetch £15 or £16 per cwt.

GUMS .- The Gum Tragacanth of Smyrna is more in repute than that of Greece, Egypt, or Syria. It is the sap of certain shrubs. Species of Astragalus grow wild in the mountainous districts of Anatolia, chiefly at Karahissar, Isbarta, Kaiseria, Jalovatch, and in Caramania, and the north of Syria. The best quality is sent to Europe and America for confectionery; the inferior qualities to England, France, and Switzerland, chiefly for dressing leather, and partly for giving substance to linen and calico. The other consumers of Smyrna gums are Austria, Holland, Italy, The export reached its climax in 1879, and Spain. when its value was nearly 480,000. In 1880 and 1881 it fell to less than one-third of that sum. The best qualities are packed in cases, the inferior in sacks, in both instances weighing about 21 quintals, or 300 lb. The best quality is white, in thin flakes, and is worth from £14 to £18 per quintal; the second is a whitybrown, from £8 10s. to £12 8s.; and the third is a dirty brown, and in thick flakes, fetching only from £6 to £8 per quintal.

GUM MASTIC is obtained from the bark of Pistacia lentiscus, an evergreen shrub which abounds in Chios. The bark is gashed in crosses, and the gum exudes in tears. What falls to the ground and becomes mixed with earth is used on the spot to make the spirit called "mastic," by flavouring alcohol with it; while the pure gum, carefully cleansed, is selected for exportation, chiefly for the manufacture of varnish. A large portion of the crop is consumed in Turkey and Egypt, where the women are in the habit of chewing this gum to sweeten their breath. The crop of Chios averages 4500 to 5000 quintals a year, but the portion of the crop exported does not exceed £1600 to £2000 yearly

SCAMMONV.-Thisdrug, a very powerful acid, much prized in some European pharmacopæias, is the juice of a creeping plant (Convolvulus scammonia), somewhat resembling the Jasmine, but bearing a pale blue flower. The juice is obtained by gashing the stem and catching the juice in a shell, which after two or three weeks is found to be white, resembling milk, which in time turns a greyish-black. This juice, when boiled to inspissation, forms a paste which is the scammony of commerce. It is very valuable, and consequently is frequently adulterated by the peasantry before it reaches Smyrna. The first quality, or "lacryma," is worth at Smyrna about 25s. per pound, the second about 17s. It is packed in boxes of various sizes, lined with tin. The average value of this export for the five years in question did not reach £5200. The demand for scammony has declined of late years. It was formerly worth £8 or more per oke (23 lb.), now it never fetches more than 43 Ios., the depreciation being owing to the shipment from Syria of the root itself, instead of the inspissated sap. England takes the larger half of this export; the rest is taken by France, Italy, and Austria.

Obituary.

LOVERS of herbaceous plants will be sorry to miss from their ranks the venerable JAMES ATKINS, of Painswick, who died on April 2, aged eighty-two years. Mr. Atkins was originally a nurseryman—and one, too, of the old school, who, while not neglecting his business, grew his plants for the love of them, and when, several years ago, he retired from business, he still pursued his hobby, and from time to time contributed to our columns observations betokening great shrewdness of perception. Cyclamen Atkinsi, a hybrid between C. Coum and C. persicum, will perpetuate his name, while no one who admires Myo-sotis dissitiflora, first described in these columns in 1868 by Mr. Baker from specimens brought from Switzerland by Mr. Atkins, will dispute his claims on our gratitude.

The Meather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON,
FOR THE WEEK ENDING WEDNESDAY, APRIL 9, 1884

D DAY.	Baron	ÆTER.	т	EMPI Ti	ERAT HE A	URE JR.	OF	duc fr Glai Tab	rome- d De- tions om sher's les 6th ition.	WIND.	
MONTH AND DAY.	Mean Reading Reduced to 32° Fahr.	Departure from Average of 18 years.	Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 50 years.	Dew Point.	Degree of Humidity. Sat. = 100.	Average Direction.	RAINFALL
April	In,	In.			0						In.
3	29.31	- 0.44	67.5	48.0	19.5	55.7	+11.1	50.3	82 {	S.E.: S.S.E.	0.03
4	29.29	-0.45	64.0	42.5	21.5	52.0	+ 7.2	46.2	18	SE	0.15
5	29.24	- 0,50	57.0	44 2	12.8	49.3	+ 44	44.9	85	S.	0.00
6	29.42	—n 32	57.2	44.2	\$3.0	50.0	+ 5.0	44 9	83	S. : S. E.	0 27
7	29.45	-0.28	51.2	46.0	5.2	48 o	+ 2.8	44.2	87 1	N.W.:	81.0
8	29.73	- 0.00	53-5	43.0	10 5	47 - 7	+ 2.3	45.4	92	N.W.: S. E.	0.00
9	29.77	+0.03	60.9	45 5	15 4	52 6	+ 7.2	45.0	75		0.00
Mean			-		-		1	_			-
mean	29.40	- 0.28	50.8	44.8	14.0	50.8	+ 5.7	45 8	84	Vari'ble	0.63

April 3.—Rain in early morning. Fine bright day. Dult night.
Rain began to fall at 10.30 P.M.
4.—Fine bright day; rain falling from 8.30 P.M.
5.—Fine day; bright and clear at times. Slight rain
at 10.30 P.M.
6.—Fine bright morning. Dull day and night. Rain
7.—Wet morning. Dull day and night.
8.—Fog in early morning. Fine day and night; uvercast
ad dark mostly.
9.—Fine bright day; cloudy at times.

London: Atmospheric Pressure.—During the week ending April 5, the reading of the barometer at the level of the sea decreased from 29.97 inches at the beginning of the week to 29.52 inches by 3 P.M. on March 31, increased to 29.71 inches by midnight on April 1, decreased to 29.61 inches by 3 P.M. on the 2d, increased to 29.63 inches by midnight on the same day, decreased to 29.45 inches by 9 A.M., and decreased to 29.35 inches by 9 A.M., on the 3d, increased to 29.36 inches by midnight on the 4th, increased to 29.37 inches by midnight on the 4th, increased to 29.37 inches by 1 P.M. on the 5th, decreased to 29.37 inches by the end of the week.

The mean reading of the barometer for the week at the level of the sea was 29.57 inches, being 0.54 inch

the level of the sea was 29.57 inches, being 0.54 inch lower than last week, and 0.36 inch below the average of the week.

or the week.

Temperature. — The highest temperature in the shade in the week was 69⁴, on the 2d; the highest on March 30 was 51⁸. The mean of the seven high day temperatures was 60⁴.4.

day temperatures was 60°.4.

The lowest temperature was 38°.5, on March 30; on April 3 the lowest temperature was 48°. The mean of the seven low night temperatures was 43°.3.

The greatest range of temperature in one day was 23°.5, on April 2; the smallest was 10°, on March 31.

The mean temperatures were—on March 30,

44°.3; on March 31, 47°; on April 1, 51°; on the

2d, 26°.7; on the 3d, 55°.7; on the 4th, 52°; and on the 5th, 49°.3; and these were all above their averages by 0°.6, 3°, 6°.8, 12°.3, 11°.1, 7°.2, and

THE

4°.4 respectively.

The mean temperature was 50°.9, being 9°.6 higher than last week, and 6°.5 above the average of the week.

The highest reading of a thermometer with blackened bulb in vacuo placed in the full rays of the sun was 127°, on April 2. The mean of the seven readings was 107°.4.

The lowest reading of a thermometer with its bulb placed on grass was 31°.50 on March 30. The mean of the seven readings was 35°.

Rain.—Rain fell on five days to the amount of 0.50 inch, of which 0.27 inch fell on April 5.

ENGLAND: Temperature,—During the week ending April 5 the highest temperatures were 69°,5 at Cambridge, 60° at Blackheath, 66°,2 at Nottingham; the highest at Plymouth was 52°,7 at Turto 56°, and at Sunderland 58°. The general mean was 62°. The lowest temperatures in the week were 33° at Sheffield, 33°.7 at Wolverhampton, 34° at Hull; the lowest at Plymouth was 59°, at Blackheath 38°.5, and at Brighton, Leicester, and Preston 38°. The general mean was 36°.2.

The greatest ranges were 32°.5 at Cambridge, 32°.0.

and at Brighton, Leicester, and Preston 38°. The general mean was 36°.2.

The greatest ranges were 32°.5 at Cambridge, 30° of a Nottingham, 30°.5 at Blackheath; the smallest ranges were 13°, 7 at Plymouth, and 21° at Truro and Sunderland. The general mean was 25°.8.

The mean of the seven high day temperatures w:5 highest at Cambridge, 62°.8, at Blackheath 60°.4, at Brighton 56°.9; and was lowest at Sunderland, 50°.3, at Plymouth 51°.t, and at Bradford 51°.5. The general mean was 54°.6.

The mean of the seven low night temperatures was highest at Brighton, 44°.5, at Blackheath 43°.3, at Preston 42°.9; and was lowest at Wolverhampton, 38°.t, at Sheffield 30°.5, and at Bolton 40°.2. The general mean was 41°.6.

The mean daily range was greatest at Cambridge, 22°.4; at Blackheath 17°.1. at Sheffield 16°.5, and was least at Plymouth, 8°.4, at Sunderland 50°.9, at Cambridge 50°.3, at Brighton 49°.4; and was lowest at Wolverhampton, 44°.4, and was lowest at Wolverhampton, 44°.4, at Sunderland 44°.4, and at Bradford 45°.4. The general mean was 46°.9.

Raim.—The largest fall was 2 23 inches, at Truro, 2 02 inches at Plymouth, 147 inch at Wolverhampton; the smillest fall was 0.77 inch at Cambrampton; the smillest fa

nam.—Ine targest fall was 2 23 inches, at Truto, 2 02 inches at Plymouth, 1 47 inch at Wolverhampton; the smillest fall was 0.17 inch at Cambridge, 0.50 inch at Blackheath and Ilull, and 0.51 inch at Brighton. The general mean fall was 0.95 inch. Rain fell on every day in the week at Truto.

SCOTLAND: Temperature,—During the week ending April 5, the highest temperature was 63°.8, at Edinburgh; at Dondee the highest was 55°.9. The general mean was 57°.7.

The lowest temperature in the week was 30°, at Perth: at Greenook the lowest temperature many 30°, at 10°.

The lowest temperature in the week was 30, at Perth; at Greeoock the lowest temperature was 34°. The general mean was 32°.3.

The mean temperature was highest at Edinburgh, 46°.3; and lowest at Perth, 42°.8. The general mean was 44°.5.

Rain.—The largest fall was 1.47 inch, at Aberdeen, and the smallest fall was 0.41 inch, at Edinburgh. The general mean fall was 0.97 inch.

IAMES GLAISHER, F.R.S.

Enquiries.

"He that questioneth much shall learn much."-BACON.

"He that questioneth much shall leave much,"—BACON.
MYROBALAN PLUM.—Can any reader say why the
Cherry Pum of gardens, described by Linnæns as
Prusus Myrobalaua, and used chiefly as a stock in this
country, is so called? A statement has got into the
books, and was recently repeated in these pages, that
some part of the tree is used in India to dye blck.
Most probably this is an error arising from a confusion
with the Myrobalan (Terminalia Chebula), the fruit of
which is used in India with sulphate of iron to make ink.
Large quantities, however, of Plums or Damsons are
grown in this country for the sake of the dye they yield.

Answers to Correspondents.

BOOKS: R. T. F. Thomson's Handy Book of the Flower Garden (Blackwood & Co.), and Mr. Graham's Guide to the Royal Gardens at Hampton Court.

Guide to the Royal Gardens at Hampton Court.

INSECTS: W. F. The insect sent as feeding upon the young Vine leaves is the perfect state of the wireworm (Elater sputator), which is so injurious in the larva state, but which has not generally been regarded injurious as a beetle. I. O. W.—Constant Reader. We have found no insects on your Violet leaves, the edges of which exhibit patches destitute of the green parenchyma, as though the interior of the leaves had been eaten by the subcutaneous larvae of a small two-winged fly, similar to that which infests the Marguerie leaves figured in our last year's volume. I. O. W.

LAWN MOWERS: A, B. C. We cannot undertake to

discuss the merits of rival American mowing machines. Consult our advertising columns.

LIGHTNING, EFFECTS OF: X. The injury done to trees is supposed to result from the rapid conversion of the fluids of the stem into steam; the consequent expansion splits the tree.

NAMES OF FRUIT: A. N. Jones. Apple: Winter Greening.

Greening.

NAMES OF PLANTS: IV. S. M. We can do nothing with plants packed in cotton-wool that have been battered abant by the postal authorities. Send them in a box packed in damp noss. — L. & B. The fruit of Paulownia imperialis. — Mas. , 1, Anemidictyon Phyllitudis; 2, Pleapeltis Ellardieri 3, Polystchuu angulare proliferni 4, Cytomium Fortunci. — T. M.P. Cymbidum aloifolium. — H. W. It is inpossible to tell for certain from such specimens. We guess your plants to be— 1, Taxus baccata var.; 2, Retinospora squarrosa; 3, Abies Pinsapo; 4, Thuia sp.; 5, Cupressus S., 6, Thuia Standshil; 7, Cupressus Lawsoniana; 8, Thuia gigantea,

pressus Lawsoniana; 8, Thuis gigantea,
NOTICE TO LEAVE: L. C. One mouth,
ORCHIDS: R. Young. The Lycaste Skinner is one of
the forms known in gardens as L dedicatissima. The
smaller Lycaste may be the control of the forms of the forms of the control
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value is appreciated by very few.

Tobracco Cultivation.—In answer to "C. H." (p. 469), enquiring as to the "title of a work on the cultivation of Tobraco in South Anerica," I may perhaps say that I do not know of any work specially relepting to South Anerica. Dr. Forbes Watson's Report on the Cultivation and Preparation of Tobraco in India, with plates (London, India Museum, India Office, 1871), may perhaps be of the top of the cultivation of the Proparation of Tobraco in India, Products of the Vegetable Kingdom may also be useful Products of the Vegetable Kingdom may also be useful C. H., however, will find references to numerous books on Tobraco in Mir. B. Daydom Jackson's Vegetable Technology, p. 348. John R. Jackson, Museum, Kew.

INTELLIGENT READERS, PLEASE NOTE: — Letters re-lating to AOVERTISEMENTS, or to the supply of the Paper, should be addressed to the Publisher, and NOT to the Editor.

CATALOGUES RECEIVED.

WILLIAM BULL, 536, King's Road, Chelsea — New, Beaunful, and Kare Plants.
WILLIAM PAUL & SON, Waltham Cross, N. — New Roses, Pelargoniums, and other Florists' Flowers.
V. LEMOINS, Nancy—General Plant Catalogue.
JAMES COCKER & SONS, Sunnypark, Aberdeen—Florist' Flowers.
E. H. KRELAGE & SON, Haarlem—Price Current of Hyacinths for Exhibition.
WILLIAM BARRON, Sketty, Swansea—Forest and Ornamental Trees, Fruit Trees, &c.

OMMUNICATIONS RECEIVED. — R. P.—Ash — W. H. — An Observer (you should have given us the uame of the correspondent you allude to, and also your own.)— P. N. F. (many thanks) — J. H. — F. J. L. — Hugh Crichton. — A. McM. — S. J.—D. T. F. R. J. L. (many thanks) — C. B. P. — M. C. C.—E. C.—C. W. D.—A. L. C.—R. D.—W. E. D.—P. J. L.—G. H. L.—P. D.

Markets.

COVENT GARDEN, April to.

Supplies heavy, especially Strawberries, which meet with little demand. Trade generally quiet. James Webber, Wholesale Apple Market.

FRUIT .-- AVERAGE WHOLESALE PRICES.

VEGETABLES -AVERAGE RETAIL PRICES.

s. d. s. d.	s. d. s. d.
Artichokes, Globe, s. d. s. d.	Garlie, per lb o 6
per duz 3 0- 5 0	Herbs, per buoch o 2- 0 4
- Jerusalem, bush. 4 o	Horse Radish, bund. 3 0- 4 0
Asparagus, English,	Lettuces, Cabbage,
per 100 8 o	per dozen 1 6
- Buodle, small 3 6	- French Cos, each o 6
- Spanish, bundle 2 6- 4 0	Migt, green, bunch 1 o
- Toulouse, bund, 6 o	Mushrooms, p. baskt. 1 0- 2 0
- Perpignon, hund. 2 6	Onions, per bushel 7 0 ·
Beaus, Freach, p. 100 2 6	- Spring, per bun, o 6
Beet, per doz 1 0	Parsley, per buoch o 4
Cabbages, per doz 1 o	Radishes, per doz 1 6
Carrots, per bun 0 4- 0 6	Rhubarb, per bund. o 4- o 6
- New French, per	Salsafy, per bundle o 8
bunch 2 o	Seakale, per puonet 2 o
Cauliflowers, Egg-	Small salading, pun, o 4
lish, dozen 2 0- 3 0	Spinach, per bushel 3 o
Celeriac, per root 0 4- 0 6	Sprue, French, bund. 1 6
Celery, per bundle 1 6- 2 6	Tomatos, per lb 3 6
Cucumbers, each 1 o- 2 o	Turnips, per bun 0 4
Endive, Freech, per	- New 1 3
1	

POTATOS.—Keat Magnums, 80s. to 100s. per ton; do., Regeats, 80s. to 100s.; Champions, 50s. to 65s.—New: Jersey, 15. lb.; French, 6d. lb.

--- Aumage Whorecare Price

CUT FLOWERS .- AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
butilog, 12 bunches 2 0- 4 0	Lily-of-Valley, 12 spr. 0 9- 1 6
nemones, 12 bun 2 c- 4 0	Marguerites, 12 bun. 3 o- 6 a
rum Lilies, 12 blms, 3 o- 6 o	Mignonette, 12 bun. 3 0- 9 0
Azalea, white, 12 spr. o 6- 1 o	Narcissus (Paper-
Bouvardias, per buo. 1 0- 1 6	white), 12 buaches 3 0- 9 0
amellizs, per doz 2 0- 4 0	Pelargoniums, 12 spr. 1 o- 1 6
Carnations, 12 blms. 1 0- 3 0	- 2002l, 12 sprays o 6- 1 o
Crocus, 12 bunches 1 0- 2 0	Polyanthus, 12 hun. 2 0- 6 0
Cyclameo, 12 blooms o 3- 0 6	Primroses, 12 bun o 6- 1 0
Daff dils, double, 12	Primula, double, buc. 1 o- 1 6
bunches 2 0- 4 0	- single, 12 bun . 4 0- 6 0
- single, 12 bun 1 0- 3 0	Roses (indnor), doz. 2 o- 6 o
Eucharis, per doz 4 0- 6 0	- coloured, doz 3 o- 9 o
Gardecias, 12 blms 2 0- 6 0	Tropæolum, 12 buo, 1 6- 3 c
Heliotropes, 12 sp o 6- 1 o	Tuberoses, per doz 2 o- 4 o
Hyacioths (Roman),	Tulips, 12 blooms 0 9- 1 0
12 Sprays 0 6- 1 0	Violets, 12 bunches o o- 1 o
Lapzgeria, white, 12	- Parma, per buo. 2 0- 4 0
blooms 3 0- 6 0	Wallflower, 12 bun 2 0- 4 0
- red, 12 blooms., 1 o- 3 o	White Jasmine, per
Lilac white Fr., buo, 6 o- 8 o	bunch 0 6- 1 0

, * These prices cannot be relied on for Easter week.

SEEDS.

SEEDS.

LONOON: 1/pril 9,—Messrs. John Shaw & Sons, Seed Merchants, of 37, Mark Lane, report to-day's market without feature. For Clover and other seeds there is a small steady inquiry. Values generally remain without alteration, but occasionally the turn of prices is against the seller, Not much foreign red will probably be kept over. Italian Rye-grass is firmer. Trefoil continues exceedingly cheap. Tares met a slow sale. Bird seeds show no quotable change.

CORN.

CORN.

At Mark Lane on Monday the limited business concluded showed 1s, reduction on the week, excepting for the finest white Wheats. Flour was saleable only at a proportionate reduction. Malting Barley was inactive, and grinding descriptions quiet, and without quotable change. Beans and Peas were in moderate request at late rates. Oats hardened in value, and on the week were 6d. to 9d. dearer. Average prices of corn for the week ending April 5:—Wheat, 3rs, 7d.; Barley, 3rs, 3d.; Oats, 1g. 6d. For the corresponding week last year:—Wheat, 4sr.; Barley, 33; 2d.; Oats, 21s, 8d.—On Wednesday very little was passing. Wheat was in 3d. For the control of the weak ending 4sr year in the weak properties of the pro

At Copenhagen Fields on Monday trade in beasts was dull. Sheep net a slow sale at barely the rates of Monday se'nnight. Rather a large number of lambs were on offer, and prices were steady at 8t. to 8t. 6d. per 8 lb. Prime calves realised full value; plain sorts sold unevenly and pigs were not in denand. Quotations:—Beasts, 4t. to 5t. and 5t. 2d. to 5t. 6d.; calves, 5t. to 7t.; sheep, 5t. to 5t. 10d., and 6t. to 6t. 6d.; pigs. 4t. to 4t. 6d.

HAY.

Tuesday's Whitechapel Market report states that trade was dull and supplies large. Good qualities of hay and Clover were in request. Quotations: —Prime old Clover, 95s. to 105s.; inferior, 6os. to 75s.; prime second cut, 90s. to 105s.; is the meadow hay, 8os. to 87s.; inferior, 40s. to 65s.; and straw, 28s. to 37s. per load.—Cumberland Market quotations:—Superior meadow hay, 81s. to 92s.; inferior, 6os. to 74s.; superior Clover, 105s. to 114s.; inferior, 7os. to 92s.; and straw, 34s. to 38s. per load.

POTATOS.

The average prices at the various markets during the week have been: — English Champions, 45. to 55.; Irisb do., 45. to 50.; Victorias, 60. to 80.; Regents, 50. to 60.; Roses, 50. to 55. per ton; German Reds, 21. 6d. to 31. 6d. per bag. — The imports into London last week were 64 cases 90 boxes from Malta, 88 cases Bordeaux, 44 tons Barfleur, and 104 sacks from St. Nazaire. Nazaire.

Government Stock.—Consols closed on Monday at 100g to 102g for the divery, and 102g to 102g for the account. Tuesday's prices were, for delivery, as on the previous day, and 102g to 102g for the account. The intal quotations of Wednesday were 102g to 102g for delivery, and 102g to 102g for the account.

12-oz. Sample Packets, free by post, 12 stamps.

FIBROUS PEAT for ORCHIDS, &c.—
BROWN FIBROUS PEAT, best quality for Orchids,
Stove Plaats, &c., £66r, per Truck. BLACK FIBROUS PEAT
for Rhoddenfrons, Azaleas, Heaths, American Plaut Beds, 15r,
per ton per Truck. Sample Bag, 5t; £ Bags, 2sz, 64; 10 Bags,
45t. Bags included. Fresh SPHAGNUM, 10.0. 64, per Bags,
SILVER SAND, Coarse or Fine, 52s. per Truck of 4 tons.
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Winter Dressing. Of all Secdsmen and Chemists, 11. 6d., 21.6d., 21.6d., 21.6d., 21.2d., 21

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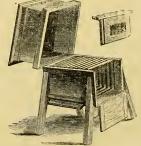
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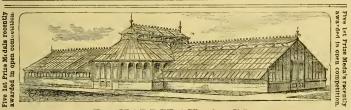
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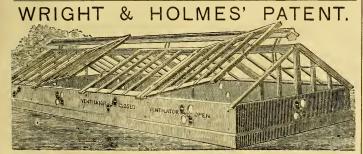
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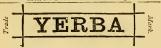
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GARDENER (HEAD, or SINGLE-HANDED),
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Gendener several years to a first class family, until death of
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TO NURSERYMEN.—Wanted, re-engage-ment in a Nursery: well up in General Work. Age et. —ALFRED, Cromwell Arms, Twickenham.

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FOR RAISING WATER FOR THE SUPPLY

TOWNS, VILLAGES, IRRIGATION, RAILWAY STATIONS, MANSIONS, FOUNTAINS, and FARMS.

No Cost for Motive-Power, which is obtained from a Stream of Water passing through the Rams. NO OILING OR PACKING REQUIRED.

Made in Sizes to Raise from 300 to 500,000 Gallons per day. Will Force to a Height of 1500 feet.



SHEFFIELD UNION NEW WORKHOUSE .- MR. JAMES HALL, Architect, Sheffield. Application of two of BLAKE'S PATENT HYDRAULIC RAMS for the supply of water to the Workhouse (1880).

Mr. James Hall, the Architect, reports that in December last he tested the Rams which force the water to a service tank in the rear of the house at an elevation of 110 feet, and found that the quantity of water delivered was at the rate of 33,000 gallons per day-3000 gallons per day in excess of the quantity guaranteed.

RECENT AND OTHER TESTIMONIALS.

From Mr. A. J. RUTHERFORD, Agent to C. F. H. Bolckow, Esq., Estate Office, Marton Hall, Middleisborough, September 64, 1883—" Dear 814.—I am glad to say that the Rams you and down on the Hambledon Estate, to say the September 184.—I am glad to say that the Rams you and down on the Hambledon Estate, to say the September 184.—I am glad to say that the Rams to the Rams at full power, see a say to page 2010 as a day, and with enough water to work the Rams at full power, see gallons, and when working full power 1950; gallons per day are seed up to a height of nearly 400 feet. They made a clear start and have gore well since.

The Delivery Tipe, in the above case, it speco feet in length.

From Mr. HENRY ROBINSON, Engineer to the Stockport District Waterworks Cc., Soptember 8, 1883—"Dear Sir,—I can now report well of the two Hydranile Rans we have fixed to your instructions for the supply of District Wiley Village, a, ooo gallons per day was the quantity you promised they would force to a height of 68 feet, but on testing them I am covinced that coopies in a tribe him of their power, which the quantity of waste water used in driving them is not equal to hat the capacity of the 68 rich pipe by which I by are fed, and I am inclined to the belief that a more simple and efficient pump can to the found.

From Captain TOWNS HEAD, Wirelaum, February 20, 1877.—"In answer to your it quity 1 am glad to say the Hydraulic Rem you sent me in November, 1875, is working exceedingly well, and gives no trouble. It will work when quite immersed, as it has been reveral times during this water, forcing up water through a drivery pipe 50.3 yards 150g at the rate of 80.000 galloss per day, a though you only promeed 50,000.

gallons per day, although you only promised so,coo.

From J. SPENDER CLAV. Eag., Ford Manr., Lingfield, Surrry, Anguett, 3 [8:.—" In Freply to your letter of inquiry I am glad to be able to say that the two Hydrault. Rams which you fixed of the spring, they deliver to the top of my house, distant a full mile from the spring, a gals, 1 qr., per minute, or five galons per ray hours, begin joe gallons above the quantity on guarantee.

From Mr. JOHN ARCHHOLD, Engineer to Messre, Parber, Walker & Co., Eastmoof, Notto, October 21, 1882—" I am glad to intoin you that the Hydraulte Ram you fixed for House Barber, Esq., whist working with a fall of 30 feet, and forcing to a height of 30 feet, through song through it, thus giving 77 per cent. of useful effect."

From Mr. T. BARHAM FOSTER, C. E. .. 3, 3 folia Dalton Street, Manchester, October 1, 1873—" Pear Str.—I have tested the Ram you contracted to fix on the Hims Estate. Stafford-shae, for Janes a thatwick, Eagle of 50 feet, which which worked by view water falling 5 feet o inches, and am pleased to had that when at full power the Ram sends up 13,500 gallons per day to the height and distance camed, and though the Ram is now adjusted to work at only three-Curths its power, the work done represents over 57 per cent, of useful effect."

From HORATIO R. B. PELLE, Bsq. Commissioner to Sir Michael Shaw Stewart, Bart., Manxion Honse, Greeneck, August 13, 1883.—"I am glad to say the Ram you fixed at Castle Farm in November last for Sir Michael Robert Shaw Stewart, Bart, continues a great success. The smalleess of the driving water—3½ galloos per minute—is not more wooderful than the large proportion of water it seeds up viz., 730 galloos per day, through about 400 yards of delivery pipe, to an elevation of 75 feet."

proportion to water it sodus up, viz., 7 to gainous per day, introdga about 400 yards of delivery pipe, to an elevation of 75 feet.

From FRED. J. TURNER, Esq., Agent to His Grace the Duke of Portland, Mansheld Woodkone, Angust 30, 1883.—" Dear Sir,—I have much pleasure in stating that the Hydraulic Rams which you erected last year for His Grace the Duke of Fortland, at Lyndhuru, near Mansheld and at Skeldon, Ayishin, are working very well, and they are most satisfactory is every way.

From Mr. E. W. STRETEE, FR. G. S., Diamond Merchant, Bond Street, London, and Sachwille Park, Sunsex, October 1, 1883.—" Dear sir,—When you surveyed the size at Sackwile Place, Eusted, for the purpose of having a Ram with one mile of collecting and districtly and the size of the siz

realised my expectations, and I have to hesitation in saying it is a decided success."

From Sir ROBERT IMENZIES, Bart, of Menies, Rennech Lodge, Rennech, Angust 20, 1820.—"The Hydraulic Ram which you fixed for me to supply water to Ramooch Lodge and Camesurich, two houses three-quarters of a nile appril, is a complete success. The elevation of the two houses are different, there is a regular supply of y quarts per minute to each house, which has never ceased since the Ram was set agoing, about three months ago. Your Ram took the place of one previously triad on the same spot, and which did not succeed, and was in fact a complete failure."

in fact a complete lailure."

From Mr. WILLIAM LAIT, Architect and County Surveyor, Compton Verney, B'arwick, J'ansary 16, 1882—"I have much pleasure in staint that the Patent Hydraulic Ram I bad from you for the Rev. J. Cardwell Gardener, of the Vicarage, Budiers Marston, and which you fixed there, is, I consider, ten arkably successful, as indicated below t—4100 gallons of water per day are passing through the Ram with a descent of 13 feet 8 inches. Out of this small quantity 1080 gallons are sent up to a height of 41 feet, showing 28 per cent, of useful effect, and the noise of its working is so slight as to be almost insufolible."

ACCRINGTON, LANCASHIRE. JOHN BLAKE, ENGINEER,

CHRONICLE. GARDENERS'

Established 1841.

No. 538.—Vol. XXI. (SERIES.)

SATURDAY, APRIL 19, 1884.

Registered at the General Price 5d.
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Apple Wood Cankered, and Fungus Sp. Glencormac, the Dripping Pool at ... Phaius tuberculosus ... THE GARDENERS CHRONICLE

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ROYAL HORTICULTURAL SOCIETY, POYAL HORTICULTURAL SOCIETY,
NOTICE! - COMMITTEES MEETINGS, Fruit and
Floral, at tal M., in the Conservatory, Scientific 21 F.M. c.
at 3 F.M., in the Conservatory of TUESDAY NEXT. April 22.
NATIONAL AURICULA SOCIETY'S SHOW and
PROMENADE, and Band of the Royal Horse Guards.
Entrance by N. E. Orchard House, Exhibition Road, at
12 o'Clock to the Fellows and their Orders, and 10 Clock to the
Public. Admission, 22. 62.

ROYAL BOTANIC SOCIETY
Gardens Regents Park, N.W.
Exhibition of STREET WERS, WEDNESDAY
NEXT, April 19. Gates open 41 2 o'Clock. Band from 2 30
to 5:30. Tickets to be obtained at the Gardens only by vouchers
from Fellows of the Society, price 2s. 6d. eachy by

ROYAL BOTANIC SOCIETY OF MAN-CHESTER FLOWER SHOW in the Town Hall, Manchester, on TUESDAY, the agth inst. For particulars apply to the under-signed.

BATH FLOWER SHOW,
First Prizes: -Twelve Azaleas, £9: twelve Stove or Greenhouse Flants, £12; fifteen Ornamental Foliage Flants, £6:
prizes in reportion Many other classes for Plants, and Prizes
for Cut Flowers, Fruit, and Vegetables. For Prize Schedules,
apply to the Secretary,

apply to the Secretary, BENJAMIN PEARSON, 14. Milsom Street, Bath. POYAL BOTANICAL and HORTICUL-NORTHERN COUNTIES.
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Royal Botanic Gardens, Manchester.
N.B. – Entries close May 23.

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Exhibitions JUNE 24; NOYEMBER 12 and 13. Special prizes open to all England, effered at the Chrysanthemm Show, without entrance fee. Price lists and particulars of Mr. JOHN C. QUILTER, Secretary, 5, Head Street, Colchester.

RARNINGHAM ROSE and HORTI-CULTURAL SOCIETY. The ANNUAL EXHIBITION will be held on TUESDAY, JULY 8, iostead of July 2 as previously announced. W. AND J. HODSOLL, Hon. Secs., Farningham.

HORTICULTURAL EXHIBITION, to be held at the BOTANICAL GARDENS, SHEF-FIELD, JULY 4 and 55. Prize Schedules may now be obtained on application to Mr. I. FWING Counter.

A BERDARE HORTICULTURAL SOCIETY and COTTAGERS' SHOW.

The FIRST ANNUAL FLOWER, FRUIT, and YEGE-TABLE SHOW will be held on THURSDAY August 28, Next. President: The Right Hos. Lord Aberdure. Subscriptions already promised over ONE HUNDRED FOUNDS. For Schedule of Pitzes and full particulars, on or after May 5, 10

Aberdare, April 16, 1884.

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Two Acres of Daffodils.

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GLADIOLI and DAHLIAS, 100 lots of CONFER
SEEDS in variety, from California; and an assortment of
PLAYTS and BULES.

PLANTS and BULBS.

WESSRS. PROTHEROE AND MORRIS
SIL will SELL the above by AUCTION, at their Central
Sale Rooms, 67 and 68, Cheapside, E., on THURSDAY
Ou view morning of Sale, and Catalogues had of the Auctioners, 67 and 68, Cheapside, E.C. (Telephone No. 1809.)

Cypripedium Spicerianum.

CYPRIPEDIUM ROBELENI.
NEW DISAS.
NEW DISAS.
ARE INSTRUMENTAL IN THE CONTROL OF TH MESSRS PROTHEROE AND MORRIS
Are instructed by Mr. F. Sander to SELL by AUCTION,
at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on
FRIDAY NEXT, at half-grat 12 o'Clock precisely, a very
grand importation of this superb oew CYPRIPEDIUM. It is
one of the finest novelties in Cypripediums; the dorsal sepal is
white, transversed with checolate bars; the pouch is light, and
the tails on the upper part white, sported brown; the lower half
dark parple. It belongs to the group of hevigation and Stonel,
dark parple. It belongs to the group of hevigation and Stonel,
TONIA MORELIANA, a fine lot of new and handsome
DISAS, several DENDROBES, and other fine importation of
DISAS, several DENDROBES, and other fine importation of
CYPRIPEDIUM
SPICERIANUM, extremely rare in its native habitat.
On view morning of Sale. Catalogues had of the Auctioneers,
67 and 68, Cheapside, E.C. (Telephone No. 1809.)

Sales Next Week.

MESSRS. PROTHEROE AND MORRIS
beg to aunounce their SALES FOR NEXT WEEK,
which will take place as follows:-

TUESDAY. April 22.—SALE of GREENHOUSE and SPECIMEN PLANTS, at the Fulham Nursery. General Horticultural Company (first day).
SALE of FURNITURE, &c., at 98, Stamford Hill (first day).

"(first day). MENNIOUR, EC, at 96, Stamford Anni (first day). April 23.—SECOND DAY'S SALE of OTH PANTINGS, FURSECOND DAY'S SALE of OIL PANTINGS, FURNITURE AND SERVEN HOUSE PLANTS, at 96, Stamford Hill.

"SALE of HIGH-CLASS POULTRY and PIGEONS, at Prothence & Morris Rooms.

THURSDAY, April 24.—THURSDAY SALE of PLANTS at the Fulham Nurseries.

"SALE of LILLES, GLADIOLI, SEEDS, PLANTS, &c. at Pothence & Morris Rooms.

"FIRST DAY'S SALE of HOUSEHOLD FURNITURE, OIL PAINTINGS, &c., at Hill House, Chigwell.

FRIDAY, April 25.—FIRST DAY'S SALE OF PLANTS,

FRIDAY, April 25 -FIRST DAY'S SALE of PLANTS, GREENHOUSES and FITTINGS, at the Fulham

"Nursery.

"SALE of FURNITURE, HORSES, CARRIAGES, COW, STACKS of HAY, &c., at Hill Honse, Chigwell, SALE of IMPORTED ORCHIDS, at Protheroe & Morris' Rooms.

Catalogues of the various Sales may be had of the Auctioneers, 67 and 68, Cheapside, E.C. (Telephone No. 1809.)

Forest Gate, E.
UNRESERVED CLEARANCE SALE.

WESSRS. PROTHEROE AND MORRIS MLEDSKS. PROTHEROE AND MORRIS

(having tet he nursery) are instruced by Mr. C. V.

Billings, to SELL by AUCTION, on the Premises, the Upton
Park Nursery, E., ten minutes walk from Porces Gate Station,
on TUPSDAY, May 6, at 12 o'Clock precisely, 20,000
GERANIUM, Madaine Siery, of the new BEDDINO
PELARGONIUMS, 1000 CHRYSANTHEMUMS, EUCHARIS, GARDENIAS, FERNS, &c. Useful COB, light
VAN, light spring CART, MOWING MACHINE, and
On view documents.

On view day prior to Sale. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, E.C. (Telephone No. 1809.)

Waltham Cross,

(Near Great Eastern Railway, 11 milles from London.)
INPORTANT SALE of SPECIMEN STOVE and GREEN-HOUSE PLANTS.

IMPORTANT SALE of SPECIMEN STOVE and GREEN-HOUSE PLANTS.

IT. TYDE EMAN is instructed by Mr. E.
Tudgey, the Exotic Nurseries, Waltham Cross (faste of Worcester), who is giving up Exhibition, to SELL by Mr. E.
SELL by Mr. Experiment of the Sell by
Wathham Cross, N.

Important Sale of Stove and Greenhouse Plants.

M.R. J. C. STEVENS has received instructions from the Executors to SELL by AUCTION, on
the Premises, "Poles," Ware, on MONDAY, TUESDAY,
and WEDNESDAY, April 21, 22, and 23, at half-post 12
o'Clock precisely each day, the entire COLLECTION of
STOY, and COLLECTION of
COLLECTION of
COLLECTION of
COLLECTION of
COLLECTION of
COLLECTION of
CAMPIEN, including all the best varieties in fine condition;
Azaleas in all sizes. A beautiful collection of pot Roses,
GARDEN IMPLEMENTS, five useful and valuable
HOKSES, FAAK, by Bother, Lugrage Alaria,
CARDEN IMPLEMENTS, five useful and
Catalogues had on the Premises, or of the Auctioner, 38,
King Street, Covent Garden, W.C.

Thursday Next.—(Sale No. 644.1)

King Street, Covent Garden, W.C.

Thursday Next.—(Sale No. 6443)

C. STEVENS has been instructed by Mr. F. Sander, to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, April 24, at half-past 10 Clock predicted, some masses have up to rob bulls each; also a very fine importation of ODONTOGLOSSUM OERSTEDH MATUS, a large and very fine form of OERSTEDH, WARSCEWIGZELA WENDLANDI, several new MASDEVALLIAS, a Large and WARRISONIANUM, &c.

On view morning of Sale, and Catalogues had.

The Valnable Botanical and General Natural

The Valuable Botanical and General Natural HISTORY LIBRARY

The Valuable Botanical and General Natural HISTORY LIERARY

AR. J. C. STEVENS has received instructions from the Executors to offer for SALE by AUCTION. The Control of the

Seedling Camellias from America, &c.

MR. J. C. STEVENS will SELL by
AUCTION at his Great Rooms, 38, King Street,
Covent Garden, W.C., on SATURDAY, April 26, at half-past
20 o'Clock precisely, a consignment of about 450 Seedling
CAMELLIAS from Messrs. Howey & C.s. including Mrs.
Annaillare Hovey, C. M. Hovey, and C. H. Hovey, also
about 300 bulgas, in fine condition, and a quantity of fine
Bulbs of the extremely are LILIUM WITTEL.
On view morning of Sale, and Catalogues had.

Lichty, Unportant Sala of Established Orchids.

On view morning of Sale, and Catalogues had.

Highly Important Sale of Established Orchids,

N. J. C. STEVENS has received instructions from John Symonds Bockett, Esq. The Hall,
Stamford Hill, whose lease is now expired and the extarequired for building purposes at once, to SELL by AUCTION,
at his Great Rooms, 38, King Street, Covent Garden, W.C., on
WEDNESDAY, April 30, at hiefpest 10 Clock precisely, the
SISHED ORCHIDS. Amongst other great things will be
found the rare Dendrobium Falconerim align, Oncidium macranthum, Aérides affice, Leila anceps Dawsoni, L. elegans,
Cattleya Skinneri, Leila purpurata, and many other fine
varieties.

On view morning of Sale, and Catalogues bad.

On view morning of Sale, and Catalogues had.

Choice Established Orchids.

MR. J. C. STEVENS will SELL by AUCGarden, W. C., STEVENS will SELL by AUCGarden, W. C., on THURSDAY, May, at hallepast as o'Clock precisely, about 550 lots of CHOICE ESTABLISHED ORCHIDS, from the well-known collection of Charles Dorman, Esq., including many rare and valuable species, amongst which are the following:—

Cattley Dowinan Angracum sesquipedal Occidium curtum Arides quiqueevulberum Dendrobium nobite ooblins Zygopetalum rooteram Angracum rooteram Manilla Harryam Marshalla Harryam

shallii Odontoglossum Krameri Cattleya aurea

robium nobile oobilins betalum rostratum evallia Harryana Mar-lilii toglossum Krameri iya aurea On view morning of Sale, and Catalogues had.

The very moving of soils, and Unitargues Rato.

Important Sale of Established Orchids.

M.R. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent
Garden, W.C., on WEDNESDAY, May 7, at half-part at
olock precisely the choice COLECTION of Ext Hat
Welling of Cheshito, including fine plants of many rare and
valuable pocified.

valuable species.

On view morning of Sale, and Catalogues had.

The Down House Collection of Orchids.

M.R. J. C. STEVENS has been favoured
with instructions from Sit Wm. Marriot to SELL by
AUCTION, at his Great Rooms, 23, King Street, Coven
Gradeo, W.C., in MAY, his well-known COLLECTION
of ORCHIDS. The plants have been selected with the
greatest care for a period of more than 15 years, during
which time the inferior varieties have been several times discarded. Among them will be found many of the finest varieties
of ocarly all the best species, and they are in grand health,
and anothing disposed of prior to Sale.

Enther particulars in next advertisement.

By Order of the Trustees, who are now desirous of Winding-up the Estate.

OSBORN'S NURSERY, Sunbury, Middle-sex, consisting of 17 Acres of Freehold Lund, with 10 feet of Building Frontage; also the namerous modern Class Erections which recently cost \$\int_{2000}\$. The whole Estate, with the Goodwill of the Busness, the Stock and Ultensis in Trade, may also be PURCHASED at the reduced sum of \$\int_{4500}\$. part of which might remain on mortgaze at \$\int_{5}\$ per ent.

Apply for full particulars to Means. FROTHEROE AND MORKIS, 97 and 86, Cheapunde, E.C.

To Gentlemen, Builders, and Others TO Gentlemen, Builders, and Others
FOR SALE (in One Lot), 8 ACRES of
FREEHOLD BUILDING LAND, awe hip for the
comply sing in Residence. Well situe of in a healthy and
crepitly sing in the state of the state of the state of
t mile from important junction on London and South-Western
Railway. For full particulary apply to
F. W. ABRAHAM, Horticultural Auctioneer and Valuer,
tz, Tanfield Road, South Croydon.

17, 143 netro Acond, South Acopyone

THE LIVERPOOL HORTICULTURAL
in the other branches of their branch

To Small Capitalists, &c.

ON SALE, the UNEXPIRED LEASE and
STOCK of a ROSE NURSERY, situated in one of the
best districts in the North of England—7 Acres of Laod, four
Greenhouses, and other very useful buildings. Good, oldestablished business. Price 4200. Great bargain.
Apply X. 83, Gardeners' Chronicle Office, 41, Wellington
Street, Strand. W.C.

To Nurserymen, Florisis, Market Gardeners & Others,
TXTENSIVE VINERIES and GREENHOUSES fixed with HOT-WATER FIPES, BOILERS,
&c., complete, as good state of preservation, only beer
created few years. About to be pulled down for imprements. This is worthy the notice of any one baving the use for
same. To be sold very chear.

Apply to C. S. MERKETI, corner of North Street, Wandsworth Road, S.W.; or of the FOREMAN, on the Premises,
the Springfield Estate, Wandsworth Road, S.W.

TO BE LET or SOLD, either together or keown as "Bloomfeld Gardens," with good south wall, situated in the Wells Road, Bath; also pleasantly situated DWELLING HOUSE, known as "Bloomfeld Yee," adjoining the same. The gardens comprise a zers of good Land, in a high state of cultivation, well stocked with Fruit Trees, and desirably situated for building.

Apply J. F. PIKE, 52, Walcot Street, Bath.

To Fruit Growers, Market Gardeners and Seedsmen.

TO BE LET, on LEASE, 80 ACRES of
excellent GARDEN LAND, with suitable Buildings, at
Midland Kailway Stations.

Peterborough, situated almost adjoining the Great Northera
and Midland Kailway Stations.

Gardener and Seedsman; 3 acres are planted with Asparately
and Fruit Trees, now in full bearing, which could be let
separately.

separately.
The Buildings are all new, and consist of an excellent Residence, Two Cottages, Large Onion and Seed Sheds, with Stables, Cart Sheds, &c.
Apply to Mesars. ENGLISH BROTHERS, Peterborough or Wisbech.

Floriste, Seedsmen, &c.

TO BE LET, on Lease, good Eight Room
DWELING-HOUSE, Seven GREENHOUSES,
SEED SHOP, &c.—Well built; all heated with Hot-water,
built on the most approved principles. Fifty feet fronties,
standing on area of upwards of 16,000 superficial feet, and in
thorough working order, forming one of the pertiest, most compare
places ever offered. On main line of rails, close to an important
junction of two lines in that knows his basines; a fortune can
be made.

DELTA, Red Hill, Surrey.

BATH and WEST of ENGLAND SOUTHERN (stablished 1777), and SOUTHERN COUNTIES ASSOCIATION, for the encouragement of Agriculture, Arts, Manufactures and Commerce.
Patron: H.R. H. The PRINCE of WALES, K.G.
President (1883-84): The Right Hon. The VISCOUNT HOUMES DALE.

MAIDSTONE MEETING, 1884, commencing MONDAY,

MAIDSTONE MEETING, 1884, commencing MONDAY, June 27 (LULTURAL DEPARTMENT). — In requesting your assistance for the HORTICULTURAL EXHIBITION at the forthcoming Meeting at Maidstone, by the LOAN of PLANTS, &c., the Steward of that Department begs to state that, in order to obviate the objections so often made against the system of Exhibiting Plants in competition for Money Prizes, it bas been determined to give a supplied as a state of the prize
A RALIA SIEBOLDI.—Fresh Seeds in large quantity. Special low Trade offer on application to H. DAMMANN, Jr., Breslau, Germany.

Asparagus for Planting. Asparagus for Planting.

BIDE, making Asparagus growing quite a speciality, can this season offer some very fine Plants, evr. and eyr., from drills, also extra good stiff, transplanted, eyr. and 3yr., which, wherever planted, cannot fail to give the greatest satisfaction. For samples and price per roo or reco

S. BIDE, Alma Nursery, Farnham, Surrey.

SEED.—Vegetable, Flower, and Farm, carefully selected, reliable, and moderate in price. Illustrated LIST, containing copious interesting and useful information,

free.
RICHARD SMITH AND CO., Seed Merchants and
Nurserymen, Worcester.

Norserymen, Worcester.

JOHN FORBES begs to state that his Annual PLANT CATALOGUE for 1834 is now ready, and will be posted on application. It consists of seventy pages of closely printed matter, representing probably the largest and best collections of Pansies, Phineses, Penistemons, Antirrhiums, Potential Penisters, Penisters, and Herbaceons Plants, &c., ever brought together, all of which are accurately described and priced. The Stock is this season unusually large, healthy, and vigorous, while the very superior quality of the varieties in owe so well known and so widely recognised that every confidence is felt in recommending the same to the notice of all who desire to proune Fourer of Sterling Merit.

JOHN FORBES, Nurseyman, Hawick, N.B.

HERACEOUS and ALPINE PLANTS.

—CATALOGUE of fity pages, containing full information as to colour, height, stunation, time of lowering, &c., free on application. A capital Collection for Rocks, Stumps, and Borders, from 95; per 1co, or 42; per dozen. Most of the plants being in pots may be despatched at any time, or by Parcels Post when fit.

ben fit.
RICHARD SMITH AND CO., Nurserymea and Seed

A SPARAGUS. — This delicious vegetable does not require half the expense often incurred. For directions see Illustrated Seed List, free. Strong rosts, 2z. 6d. per 100; extra strong, ditto, s-yr. old, zi. 6d. per 100. RICHARD SMITH AND CO., NOCESSER.

C A B B A G E P L A N T S, strong, healthy, and true, autumn sown.

ENFIELD MARKET ROBINSON'S DRUMHEAD 2s. 6d. per 1000.

RED DUTCH, 5s. per 1000

F. 1c. kage free, extra plants for carriage. Cash.

H. 1. HARDY, F.R.H.S., Stour Valley Nursery, Bures, Suffolk.

PANSIES, SHOW and FANCY.—Best Collection in England. The cream of all the most noted raisers, and the latest new sorts. Good plants, correctly named, either Show or Fancy, 12 for 32, 24 for 35. 6d., the with Deeither Show or Fancy, 12 105 307, scriptive List. S. SHEPPERSON, Florist, Prospect House, Belper.

CAMPANULA PERSICIFOLIA ALBA, pure White, beautiful. Good plants to bloom, 12 for 15., 24 for 15. 92, free. S. SHEPPERSON, Florist, Belper.

POLYANTHUS, the Old Jack-in-the-Green, very rare and curious. 6 sorts, named, for 2s., free. S. SHEPPERSON, Florist, Belper.

STRAWBERRY PLANTS to Fruit this year.—The two best paying sorts are Black Prince Improved and Brown's Wooder. 90 of each sort for 2s. 6d., free. S., SHEPPERSON, Plorist, Prospect House, Belper.

GEUM COCCINEUM, Double Scarlet, very fine for Decoration and Cut Flowers. 12 for 13, 24 for 15. 9d., free. S. SHEPPERSON, Belper,

DAISIES, a Fine Collection of Best Sorts. ng Plants, named, in 6 distinct sorts, for 15.; s. 9d., free. SHEPPERSON, Florist, Prospect House, Belper.

CARNATIONS and PICOTEES (Seedling) from Carter's celebrated strain, all colours, strong plants to bloom, 12 for 151, 24 for 15. ed., free.
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FONGLOVES.—Large Gloxinia-like flowers, fine, spotted, all colours. Strong plants to bloom, 12 for 15., 24 for 15. 9d., tree S. SHEPPERSON, Belper,

CANTERBURY BELLS.— All the new doubte and single. Strong plants to bloom, 22 for 12, 24 for 15, 94, free. S. SHEPPERSON, Florist, Belper.

POLYANTHUS, finest strain in England; all calours; truss and blooms very fine. Strong plants to bloom, 12 for 11. 24 for 12. 6/4. free. S. SHEPPERSON, Florist, Belper.

WALLFLOWERS.—Covent Garden, dark;
Double German; and Carter's New Tom Thumb,
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A URICULAS.—A large and varied Collection, all colours. Plants to bloom soon, 6 for 12. 2d., 12 S. SHEPPERSON, Florist, Prospect House, Belper.

A URICULA, the old-fashioned Single Vellow, very fragrant; soon bloom. Strong plants, 6 for S. StepPerrson, Florist, Prospect House, Belper.

HOLLYHOCKS.—Chater's Strain, all zolours. Strong plants to bloom this season, 6 for 2s., free.
S. SHEPPERSON, Belper.

BEAUTIFUL HARDY PLANTS in about 2000 of the finest species and varieties of the best kinds for garden decoration. All lovely, some fragrant; may be grown without a greenhouse, will bloom this year, all named sorts of proved merit. Catalogues with all particulars for a

CARNATIONS and PICOTERS, many thousands wellrooted plants, last autum's layers, of the beautiful show, Selfand Clove varieties, all named. Lovely fragrant flowers of rich
and distinct colours, Selfs, Flakes, Bizarres, some broadly
deged, others sightly pencilled, all lovely, fragrant, and useful
for bouquets or garden. Show varieties, 122, per dozen pairs,
7, per dozen plants; Self and Clove varieties, 91, per dozen
HOLL VHOCK Seedlings from one of the best strains procurable, distinct and varied colours, showing poble spakes of
lovely double flowers, amongst shrubs or as a background for a
border, 42, per dozen, 25 for 75.

border, 4s. per dozea, 25 for 7s. WM. CLIBRAN AND SON, Oldfield Nursery, Altriacham.

WM. CLIERAN AND SON, Oddieded Nursery, Altriacham.

DYRETHRUMS, POTENTILLAS, DELL. PHINIUMS, a trio of the finest border plants known, all colours, bright, distinct, showy, blooming freely, useful for coly need to know them more to grow them in quantity. The finest sorts, Fyrethrums, 5s. per dozen; Potentilles, 5s. per dozen; Potentilles, 5s. per dozen; 12 of each, 15s.

PHLOXES, PENISTEMONS, PANSIES.—The gay and hardy Phlox, with its lovely dowers and fine spike, strong 2-yv. clumps, 4s. 6d. per dozen; smaller, 3s. per dozen. The beautiful Penistemon, with its Goldmin-like flowers, white, plant of the penistrone, which is Goldmin-like flowers, white, plant Penistrone, with its Goldmin-like flowers, white, plant Penistrone, with its Goldmin-like flowers, white, plant Penistrone, with its Goldmin-like flowers, white, plant Penistrone, which is grown to be presented by the plants and clumps, 1x of each 13s.

HERBACEOUS and ALPINE PLANTS. TERBACEOUS and ALPINE PLANTS.

The finest kinds for the Borders or Rock Garden. We offer (as may be seen from the Catalogue) about 750 of the finest sorts, our aim being to discard the weedy, and grow the fine varieties. We can offer suitable sorts for hot, cold, dry, damp, sunny or shady positions—various varieties blooming almost every month in the year, interesting and instructive to the surdent from the diversity of forms, &c., and equally desirable to the lovers of a gay garden for their beamy. It avarieties, 4s.; and contained and fine for 175. 6d., 7 co varieties 3t. 6d., all named, effort wo stame.

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SELECT FARM SEEDS Natural Grasses,

Natural Grasses, Guaranted as to Growths and Purity.

Clovers, Rye Grasses, Sec. Samples Unsurpassable.

Root Crop Seeds, Purs Petiters Stocks, Perfectives Stocks, Perfectives Seno Post Cand For.

Reliable always.

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"TheBook of the Farm"

The Queen's Seedsmen, CHESTER.

NEW CATALOGUE of FERNS for 1884, now ready, with Engravings of Newand Rare Varieties, prepared specially for this Catalogue. In the matter of British Ferns, this Catalogue is declared by high authorities to be far superior to any other Trade List yet issued. Post-free 3 F. W. AND H. STANSFIELD, Sale, Cheshire.

Special Offer-Cheap Pelargoniums, &c.

VILLIAM BADMAN offers as below, all Strong, healthy, and well-rocted:—
TRICOLOR — Mrs. Pollock, from single pots, 22. 6d. per
dozen, 18t. per 10.11lum, 35. per doz., 205. per 100.
BRONZE—MelNahoa and Black Douglas, 25. 6d per dozen,

str. per con-str. per con-The Cara, and other fine sorts, ga, per dor, zoa, per 100. SILVERS—May Queen, Princess Alexandra, Prince Silver-mag, ze, per dozen, tzz. per 100; Flower of Spring and Bijou, 15. 6d. per dozen, tex. per 100. GOLD LEAF - Crystal Palace Gem and Happy Thought, zr.

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ZONALS—Vesuvius and Jean Sisley, scarlet, 1s. 6d. per dozen, 10s. per 100.

Master Christine and Mrs. Levers, fine pinks, 1s. 6d.

per dozen, 10s. per 100. M. Vancher, Virgo Marie, White Vesuvius, whites, us. 6d per dozen, 10s. per 100. Waltham Seedling and Bonfire, crimsons, 1s. 6d. per

lozen, 105. per 100.

G. Smith and Lucius, fine salmon, 15. 6d. per dozen, 10s. per 100. Henry Jacoby, finest crimson, for all work, 2s. 6d. per

Henry Jacoby, finest crimson, for all work, 22. 6d. per Ozote, 202. per 102.

DOUBLES—Wonderful, scarler, Madame Thibaut, pink; Madame Bales, Sarler, Madame Thibaut, pink; Madame Thibaut, pink; Madame Thibaut, Madame Thiba

60,000 Verbenas.

WILLIAM BADMAN offers as under:
Clean, bealthy, well-rooted VERBENAS, Purple,
White, Scarlet, Crimson, and Rose, from cuttiog-pots, 6p. per
100_50x, per 2000, or from single pots, 1x0, per 2x0. 120 in 2x
choice show sorts for 8x, Fackage included. Terms cash.
Centerly Nusary, Gravesend, 5, 1

SEFUL COLLECTIONS of SEEDS for various sized gardens, the selection being the result unbiassed experience. For particulars see Illustrated List, whi will be sent free, together with Order Sheet, for the convenien

will be seat free, together with Order Sheet, for the convenience of those who prefer to make their own choice.

RICHARD SMITH AND CO., Seed Merchants and Nurserymen, Worcester.

SEAKALE for Forcing, and ASPARAGUS.
SEAKALE, extra strong, 12s. per 100; second size, 20s.;

EARALD, extra strong respectively. SEARALD, extra strong replanting, 7s.

ASPARAGUS, Early Purple Argentenil, the best variety, 7sr, and 4syr, 3s. 6d. per 100. Early Giant, a selected strain, 2syr, 3s. 6d.; 5syr, 5s. Harrisons Gibbs and the strong of the control of the contro

rate quality. PAUL and SON, The "Old" Nurseries, Cheshunt.

PAUL ANO SUN, The "OIR Notreress, cheaning."

DERFECT SPECIMENS,

prices and produced the most beautiful tree in existence, 2/2 to

price A robit state of the most beautiful tree in existence, 2/2 to

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DORDER CARNATION,

"MARY MORRIS."

First-class Certificate awarded to H. G. Smyth. A beautiful rose-coloured Self, very highly scented, of great size, very find, and of perfect shape; does not burst the calxy, a very free bloomer and vigorous grower, and perfectly hardy. See Garders' Chronics, August 4, 1082, page 46. Frice 2s. cacher of the colour of the colour services of the colour services. The colour services are services as the colour services are services as the colour services are services. The colour services are services as the colour services are services as the colour services are services as the colour services are services.

H. C. SMYTH, 21, Goldsmith Street, Druny Lane, W.C.

BEAUTIFULFLOWERS,

A Catalogue of many huntreds of the finest Tuberous and other Begonias, Geraniums, Chrysanthemums, Pelagoniums, Fuchsias, Abutions, Lantanas, Salvias, Coleus, free for two stamps. The finest varieties raised by English and Continental florists are annually added. Begonias—tuberous: our house of these last summer was the admiration of hundreds of visitors. The large flowers, brilliant and varied colours, and great number equalled by few it any collection in the kingdom. Twelve varieties, to name, 4,7, 65, 76, 122, 138. Our prices for the varieties, to name, 4,7, 65, 76, 122, 138. Our prices for the varieties, to name, 4,7, 65, 76, 122, 138. Our prices for the varieties, to name, 4,7, 65, 76, 122, 138. Our prices for the varieties, to name, 4,7, 65, 76, 122, 138. Our prices for the varieties, to name, 4,7, 65, 76, 122, 138. Our prices for the varieties, to name, 4,7, 65, 76, 122, 138.

WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham.

DELARGONIUMS — Show, Fancy, and
French Splendidly grown, clean healthy plants of the
finest named stors, 6st, or, 1 are, per d. zen.
FUCHSIAS, Double and Single. As we buy the best
varieties from all raisers every year, we must have the best
sorts procurable. Purchasers cannot buy better kinds—many
interior sorts have been discarded. Twelve varieties, 3st, 3e
varieties, 5st. 6d.; 50 varieties, 1 not, 1 to varieties, 5st. 3e
varieties, 5st. 6d.; 50 varieties, 1 not, 1 to varieties, 1 none, 1 no
a varieties, 1 none, 5 novi as Beautiful Abutilines, 3; no
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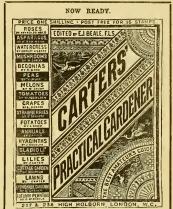
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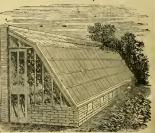
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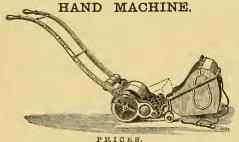
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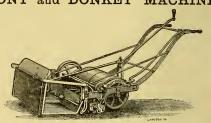
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Bardeners' Chronicle.

SATURDAY, APRIL 19, 1884.

CANKER IN APPLE TREES.

THERE are probably several diseased conditions of Apple trees known as canker. During the past two or three months 1 have been looking into this disease somewhat attentively, and I have come to the conclusion that the commonest and most serious form is due, as was pointed out by Goethe, to a sphæriaceous fungus, Nectria ditissima (Tul.).* The various members of Sphæriacei occur, as a rule, upon dead wood-not upon the living tissues of plants. There are, however, many important exceptions-such, for example, as the Valsa parmularia, described many years ago by Mr. Berkeley, upon living Oak twigs. More important, from an economic point of view, is the Sphæria morbosa of Schweinitz, the cause of black knot in Cherry and Plum trees in the United States: closely allied to which is Gibbera vaccinii upon living branches of Vaccinium Vitis-Idæa in our own country. The Dothideaceæ, too, occur, many of them, upon living leaves and branches, as the genus Phyllachora for example. Although there is nothing impossible in the notion that a Nectria may be parasitic upon living branches, yet I must confess my first impression was, that the fungus found a suitable home upon Apple twigs which were already dead rather than that it was the cause of the death of the affected branches. It is well known that winter and spring are the seasons in which the Sphæriacei as a rule are found in the best condition of fructification. I have, therefore, closely examined cankered Apple trees during the past two months wherever I have had an opportunity of doing so, and in no single instance have I failed to find the Nectria upon every tree examined. It is not implied that every cankered patch was found producing perithecia (spore cases); at the same time the majority of the cankers upon each tree were found bearing the fungus in abundance : and, further, it was not found upon any other part of the trees. The trees were not confined to one garden nor to one locality. The specimens which I submitted to the Scientific Committee recently were gathered from (1) Mr. J. Bird's nursery at Downham; (2) Mr. S. N. Marshall's garden at West Lynn; (3) Mr. J. T. Stevenson's garden at Clench Warton; (4) Mr. C. Peek's orchard at Tilney St. Lawrence; (5) Mr. G. B. Ffolke's garden at Wolferton; and (6) Mr. T. Piney's garden at King's Lynn. When the parasite gains an entry into the bark of a medium-sized branch, which it often does through a lateral twig having been broken or cut off (fig. 99), it at first causes the death of the bark and subjacent wood to only a limited extent. The bark cracks concentrically; in the cracks and upon their edges the perithecia are most commonly found. It is obvious that a certain time must elapse

* Nectria ditissima, Tul., Carp., iii., p. 73, t. r3, f. 1-4 (= N. coccinea of many authors).—Perithecia widely scattered or densely gregarious, globose-obtus then papillate, oaked blood red asci cylindrico-clavate, 8 x × 8 mk.; spordia ovate-obloog, unispetute, 14 × 6-8 mk, hydine.—Conidia tuber-cularia crassostipitata, Fuckel, Symb. Mycol., p. 180. Condia ovate-oblong, continous, 6-8 × 3-4 mk.

between the period of infection and the time at which the mycelium or spawn can develope its perfect fruit. This probably takes some months, for it will be seen by inspecting the specimens themselves that the perithecia are most abundant in those cases in which this devitalised area has become surrounded by an enlarged and swollen margin (fig. 100, A, B) of healthy bark. When the parasite attacks a small branch shoot of the last year it kills it outright for some inch or two downwards; especially is this the case when the end of the shoot has been cut off (fig. 100, B); but with the older and thicker branches attacked lower down the disease gradually but surely works its way through the branch, eventually cutting it quite through (fig. 100, A). this case a callus above and below, as well as surrounding the canker generally, is observable. Thus the distal part of the branch becomes in course of time strangled by the fungus. It is useless to look for perithecia on those places in which the disease has only just made its appearance. As far as I can judge, the cankers made last autumn produce the perfect fungus in spring.

In the Gardeners' Chronicle, March 8, 1884, p. 312, Goethe's paper in the Monatschrift des Deutsche Garten for 1880 is referred to, in which the author has shown that Nectria ditissima is capable of producing the disease on Apple, Beech, and Sycamore respectively. The remedy is to cut out the diseased parts and to seal the wounds thus made, which would otherwise remain as vulnerable points inviting the attack of the fungus-spores, by painting them over with warm coal-tar.

The injuries which branches receive by rubbing against one another may, of course, open the door to the fungus spores; but unless the latter be present, a true canker is not produced by this means.

At a recent meeting of the Scientific Committee a very curious form of canker on Hawthorn was exhibited, in which the disease resembled a honeycomb. Whether this was due to an insect or to another fungus, I cannot at present certainly say. It, however, bears some resemblance to the cicatrix of a wound caused by a fungus, Rœstelia lacerata, attacking a young twig last summer, and the presence of some brownish spores in the bottom of some of the cells seems to favour this view. There were also, however, found some spores very like those of a Fusisporium. By further observation I hope to clear this up. Charles B. Plowright, King's Lynn, Afril 7.



DENDROBIUM (STACHYOBIUM) PROFUSUM, n. sp.*

This is reported to have the general habit of Dendrobium superbiens (macrophyllum, Lindl., the Rhubarb-smelling plant), but the bulbs are said to be much thinner. The leaves are stated to be deciduous. On both sides of the stem, in presence or absence of leaf-blades, appear the slender peduncles of seven to nine flowers, which are as large as those of a very good and large Dendrobium amoenum, having at once a narrow, long, incurved perula. The sepals and petals are yellowish-green, with fine purple at the base inside, and purple dots on the petals. Lip fine yellow, "with a dark spot in the middle." The blade of the

lip is pandurate, anterior part very broad, toothletted and wavy. Petals dentate. It will no doubt prove an elegant, chaste thing, as I judge from numerous dried flowers kindly sent me by Herr Consul Kienast, who received them from the discoverer, the Swiss investigator of the Philippines, Mr. Röbelen. H. G. Rebb. f.

AERIDES ROBBELENII, n. sp.

This would appear to be a fine thing with some new features. It is described as having the growth of Aërides quinquevulnerum, with four to six crect (!) peduncles reaching a foot in length, with as many as tweety-five very fragrant flowers. Sepals and petals whitish-greenish, with white tips. Lip with rosy hue and yellow lacinize.

The flowers are equal to those of Aërides quioquevulnerum. The petals have a curous tendecoy to become toothletted. The oblong side lacinize of the lip are usually lacerate on the upper border, as is the oblong, curved, much longer mid lacinia. The spur is rather short, conical, with a transverse linear callus on each side.

It bears the name of its assiduous discoverer, who lately had the success of finding a nest of the most glorious dark variety of Phalænopsis Sanderiana. I had my dried specimens from Herr Consul Kienast, of Zurich. H. G. Rchb. f.

TREE TOMATO.

THIS is the popular name of a fruit naturalised in Jamaica, and found in many old gardens of the Coffee districts of St. Andrews and Manchester. By the kindness of Sir Joseph Hooker it has been determined as Cyphomandra betacea, DC.,* a native of South America, including Peru and Chili, where also it is under cultivation. The plant (belonging to the natural order Solanaceæ) is of shrubby habit, about 5 or 6 feet high; the leaves are large (sometimes a foot long), broadly cordate, and softly pubescent, generally confined to the termination of the branches. The fragrant flowers appear as sub-axillary cymes, of a pale fleshy colour, with bright yellow stamens, followed by an obconical or ovate fruit, which at first of a greenish or purplish tint, gradually assumes a warm reddish colour as it approaches maturity. The bilocular fruit is of firm texture, about 2 inches or 21 inches long, and about 2 inches in diameter. The pericarp is about 4 inch in thickness, of a pale colour. It is not generally known, and seldom used in Jamaica, but it is without doubt a fruit that should be more largely cultivated, as it answers in every respect the purposes for which the ordinary Tomato is esteemed. On the mainland it is known as the Tomate de la Paz, here as the Tree Tomato, and sometimes, on account of its supposed beneficial action on the liver, as Vegetable Mercury. Plants are easily raised from seed, which come into bearing in about two years. It is a very prolific bearer, and the fruit is available during the winter months-November to March-when ordinary Tomatos are not so easily obtained. If the fruit is allowed to fully ripen on the trees it may be eaten raw, and it has somewhat the flavour of Gooseberry. If the skio is removed and the fruit (without the seeds) stewed with sugar, it resembles Apricot, but with a slight suhacid flavour which is very refreshing. In my own household it takes the place of Apple in Charlotteaux-pommes, and it is preferred in this form to real Apples, especially such as grow in the Blue Mountains, or are imported from America. I notice the plant is under cultivation in the South of Europe, but I am not aware to what uses the fruit is there applied. Sir Joseph Hooker informs me that it is now in fruit in the Temperate-house at the Royal Gardens, Kew. As I have lately distributed seed of this Tree Tomato to numerous correspondents at Madeira, India, Ceylon, Hong-Kong, the Cape, and the Australian colonies, the above remarks will no doubt prove of interest to them, no less than to other readers of the Gardeners' Chronicle, who may desire to secure a hardy perennial Tomato plant of more than ordinary merit. I may add the plant flourishes in Jamaica at elevations of 2000-5000 feet; the mean annual temperature of these districts ranging from 72°-63° Fahr. D.

Morris, Famaica, March 25. [This fruit may occasionally be seen in Covent Garden Market under the erroneous name of Granadilla. It is we believe imported from the Azores. Ep.]

GLENCORMAC, COUNTY WICKLOW.

GLENCORMAC, the residence of James Jameson, Esq. (see p. 517), is situate close to the Rocky Valley, and almost between the large Sugar Loaf and small Sugar Loaf Mountains. The locality is one of the most picturesque of the County Wicklow, the scenery on all sides being grand and imposing. Standing within a demesne of 80 acres of land is the newly constructed residence of Mr. Jameson, from the windows of which most charming views of mountain and valley can be obtained. In the immediate vicinity of the house, Art has been successfully put into operation to increase the beauties of Nature. Over five acres have been laid out in pleasure grounds by Mr. W. Sheppard, Landscape Gardener, of Dundrum, County Dublin, who has been very successful in the work. The place being in an exposed position, Mr. Sheppard's object was to provide as much shelter as possible, and for this he treated the ground at his disposal with great skill. He ignored terracing, and, as is his custom, adopted undulations, which have turned out most effective, and have given entire satisfaction. plantations, of which I purpose speaking more in detail further on, have prospered in a remarkable degree, and although in the ground scarcely three years, the display of foliage is very luxuriant, the plants being in the most healthy condition. On proceeding through the principal entrance, which is off the road leading from Bray to the Glen o' the Downs, the visitor's attention is at once attracted to the lefthand side by a magnificent group of Cedrus atlantica and evergreen Oak, which in the course of a short time will be one of the principal features of the place. The growth of these plants has been unusually rapid. To the right hand is the gardener's house, built in the Elizabethan style. It is a substantial and handsome building, in keeping with the mansion itself, which, it should be mentioned, is in close proximity to Glencormac Hill, from which it takes its name. Further on to the lelt of the main avenue are a number of majestic Beeches, which cannot be less than one hundred years old. Going a little further on, a full view of the Sugar Loaf is had, and, with its head towering into the clouds, the effect is very grand. At this point the house also comes into view, but we will turn off the main avenue to a path leading to the right, through clumps of Juniper and Arbutus Unedo, carpeted with Berberis Aquifolium. This path brings you to an avenue of old English Yews, which are greatly prized by the owner, and which are supposed to have been standing for over 200 years. Under these same Yews, it is said, many years ago, the well-known song of "Robin Adair" was composed by a Scotch lady who had fallen in love with the lord of the soil, the property then being in the hands of the Adair family, and known as Grove Hill. It was at this very spot the love-sick lady composed those touching verses, which so plaintively told of her woe at her lover's change of feelings towards her. At the end of these Yews a neatly-constructed summer-house is pleasantly situated. Turning to the left, we come to a very fine group of large-leaved Sorbus (Pyrus Aria) carpeted with green Hollies. The white leaves of the Sorhus contrast very effectively with the sombre hue of the Holly underneath. To the right are some splendid specimens of the Beech tree, and then we come on a group of Pinus Massoniana (?) of fine growth, Portugal Laurels, Berberis, Hypericums, &c. Then comes a path leading to the gardens and lawn-tennis grounds, and here is another group of Cedrus atlantica, Cupressus Lawsoniana, with undergrowth of Ligustrum japonicum, Ligustrum lucidum, Eucoymus japonicus, and Berberis Aquifolium. On the left is a group of Weymouth Pine and Cedrus Deodara, with undergrowth of Arbutus Unedo and Portugal Laurels. We are back again on the main avenne, which winds round gracefully from the gate to the forecourt, from which point the ground has been made to rise gently towards the mountains, the effect being as grand as it is natural; indeed, the designer has throughout copied Nature most successfully. If terraces had been adopted here the result would, no doubt, have been very unfortunate, as the view from the hall door and front windows would be simply destroyed; as it is, the result is very happy.

^{*} Dendrokium prajuum, n. sp.—Stachyobium; caulibus tenulbus viridulis prope dimidiam metrum laogis; pedunculis gracilibus p-q flors; sepalis ligulatis acutis, lateralibus in perulam augustam curvam prope uncinatum abtuse acutam tensis; tepalis oblongis denticulatis; labello longe unguiculton pandurato, portione superiori hastata dein attennata, portione suberiori hastata dein attennata, portione suberiori hastata dein attennata, portione attentiva productione superiori hastata dein attennata, portione attentiva productione superiori hastata dein attennata, portione superiori hastata dein attennata, portione superiori hastata dein attennata, portione superiori la productione superiori productione

^{*} Pionandra betacea, Miers in Hook, Lond. Journ. of Bot., vol. 4, 1845, p. 336; Solanum betaceum, Cav. 16, p. 15, n. 99, l. 534; Ann. de Hist. Nacl., i, p. 44, Dun. Sol., 169, n. 70, syn. 7, n. 16; Andrews, Botan. Rep., t. 511; Solanum crassilolium, Ortega, Dec. 9, p. 117; Solanum crassilolium, Ortega, Dec. 9, p. 117; Solanum crassilolium, t. 125, in H. DC, nec. Ruiz et Pav.

On the right and left band of the slope are plantations of Austrian Pines, Birch, Abele Poplars; and standing about in the grass are choice specimens of Abies Pinsapo, Wellingtonias, Cupressus Lawsoniana, and Abies Nordmanniana,

From the forecourt there is a path leading to the vegetable garden, and on one side of this we pass a splendid group of Aralia spinosa, Mountain Ash, Silver Queen Holly, Hodgins' Holly, with undergrowth of Escallonia macrantha. On the left are double flowering Cherries, Golden Queen Holly, Picea Menziesii, Caucasian Laurel, and angustifolium ditto, Passing on further there is next observed a magnificent group of Larch, which acts as a shelter to the mounds.

Turning from the entrace to the kitchen garden we proceed along the wall, passing the vinery and Peach-house, which show a very fine range of glass, and then we are in a winding path, which passes in the distance opposite the front of the house. This perhaps was the most exposed portion of the grounds, but the difficulty was successfully overcome by Mr. Sheppard, who placed the mounds in such order as give the place a very cosy aspect. Along this winding path are planted Silver Queen Holly, Heath, scarlet Horse Chestnut, Cupressus macrocarpa, Austrian Pine, and Scotch Laburnum. It is while proceeding along this path the lovely vistas are par-

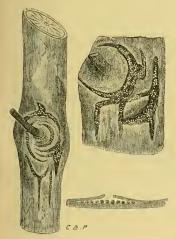


Fig. 99.—Canker on Ribston Pippin, showing the cracks in the bark, with the fungus-capsules, or perithecia: half nat. size.

ticularly conspicuous, and, although from some points the mounds appear continuous, the mountain dells come on us frequently in pleasant surprise. The clothing of one or two mounds next reached is of beautiful specimens of Laurustinus, large plants of angustifolium Laurel, Berberis Darwinii, and Rhus Codinus.

The plantation to the left is continued with silver and variegated Hollies, Sweet Bay, Heaths, and Caucasian Laurels. These Laurels deserve particular mention, owing to their beauty and robustness, and, being rarely cut by the frosts, they are largely used by Mr. Sheppard, who looks on them as the premier Laurel. Comiog on further another vista is reached, and through this there is a full view of the small Sugar Loaf; and Hollywood, the residence of Sir George Hodson, is discerned. A triangular raised bed has been laid out close to this point, one path leading on to the Sugar Loaf, and the other back to the main avenue. On the right of the latter path are some fine Horse Chestnuts and Scotch Firs with an undergrowth of rotundifolia Laurels and Berberis Aquifolium. Bearing to the left, at the apex of the triangle we come to an ingeniously planned dripping pool (of which we give a woodcut, p. 517). The rocks, which correspond with those of the surrounding mountains, are very effectively set, and are clothed with Ferns, Banksian Roses, Osmanthus, white-leaved Brambles, &c. There are a series of drops, and the water is subsequently treated as an open

rivulet running through the pleasure grounds and under the public road into a stream in Sir George Hodson's grounds,

Leaving the pool, we come to groups of Pampasgrass, New Ze. and Flax, and Tritonias, all of which are in luxuriant growth, and make a very fine display. We next find ourselves close to the side of the house, where is a two-sided terrace, the corner of which is hidden by a plantation of Abies Nordmanniana, variegated, Hodgins' and Minorca Holly, and Grislinia littoralis. There is now a full view of a very fine piece of rockwork, which was constructed to hide a dead wall. This rockwork is a very remarkable feature, owing to the admirable manner in which it has been constructed. In it are found hold projections,

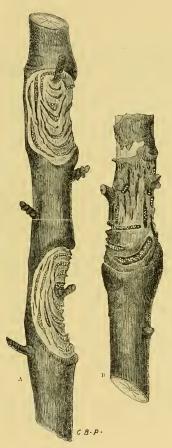


Fig. 100.—A, R, Canker in Apple trees, showing progress of the disease: half nat. size.

some of the stones weighing over 2 tons, and all of which were obtained from the side of the mountain. The terrace we descend by a flight of steps, arranged in rather a novel fashion, for instead of having the usual cut stone side bases, they are made of ornamental rockwork, clothed with a splendid display of Aubrietias of sorts. The rockwork at the dead wall is set off with rare plants, and at the end the rainwater from the adjoining buildings is made to serve for a dripping pool, which can be set in motion by turning a concealed handle. At the base of the rocks there are Hollies, Austrian Pines, Cupressus of sorts, Chinese Junipers, dwarf Spruce and Yews, New Zealand Flax, Yuccas, Escallonias, Vincas of sorts, Sedums, Hydrangeas, Ivies of sorts, Roses, &c., all combining to give effect to the workmanship. At the end of this rockwork the lawn-tennis ground is laid out. On one

side of this ground there is a fine plantation of Sycamores, scarlet Chestnut, Picea Menziesi, &c. In this ground there stood a fine Sycamore tree, fully 50 feet high, which was removed and transplanted some 50 yards away, and it has not been checked in any way by the change. There is close by a bed of hybrid Rhododendrons. This path brings you to the summer-house at the end of the Yews. Returning towards the house, the conservatory is well worth a visit. It is spacious and lofty, and contains numerous pockets filled with Degonias and Ferns, all splendid plants. There are also Passifloras of sorts, Tradescantias of sorts, Tacsonias, Clematis, Abutilons of sorts; Dracenas, and Selaginellas. From the conservatory there is a door leading into the drawing-room.

Returning to the range of glass already referred to, we find it is divided into two vineries, a stove, and two Peach-houses. To the rear of the stove there is a very pretty fernery, in the grotto style, in which the plants are doing very well. In the stove there are some very fine plants, including specimens of Pandanus, Crotons of sorts, Allamandas of sorts, Stephanotis, Orchids, Draccenas, Anthuriums, Davallias, and Palms. The Peach-houses contain very fine trees.

The kitchen garden is very extensive, and is divided into the usual quarters. The walls are lined with

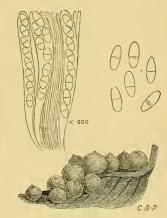


Fig. 101.—Below are shown the fungus-capsules, or perithecia of Nectria ditissima, enlarged. Above the asci, or sporecontaining tubes, and the spores magnified 500 diam.

hrick and wired. In the centre is a curvilinear house, in which are Peaches and Nectarines in robust health.

This notice would be incomplete without giving credit to the head gardener and steward, Mr. Angus McIntosh (who has been in the service of the Jameson family for many years), for the admirable manner in which he keeps the grounds. Owing to bis great experience the place could not he in better charge. It may also be mentioned that Mrs. Jameson is quite a conneisseur of trees and shrubs, and takes a great interest in the grounds. The manner in which the work at Glencormac has been carried out by Mr. Sheppard is an additional testimony to his ability and skill,

WARWICK AMATEURS' AND COTTAGERS' HOR-TICULTURAL SOCIETY. — The annual exhibition of this Society is fixed for Wednesday, July 30, and a very good schedule of prizes has just been issued. It is a remarkable one, too, because it includes an industrial department, under the management of ladies, in which prizes are offered for various kinds, of needlework, with classes also for children, also for home-baked bread, plum cake, jam tart, jam, &c., and special prizes are offered for the best specimens of cottage handicraft or other industrial work. These are valuable additions to a cottagers' show, and prizes of this character might be given in many districts with great advantage. They are said to work in a very beneficial manner at Warwick,

NEW SPECIES OF CAR-MICHÆLIA.

CARMICHÆLIA UNIFLORA, p. s.—Forming large patches I inch high. Stems creeping underground, and giving off slender branches; branchlets crowded, compressed, glahrous, 2—1 inch long, 32—23 inch wide; ontches few, distant. Leaves not seen. Flowers solitary, 2 inch long; peduncles slender, puberulous, jointed about the middle. Calyx glabrous, teeth short, acute; vexillum reflexed; wings shorter than the keel; ovary glabrous. Pod (immature) linear oblong; style recurved.—Hab. South Island, New Zealand, Vailey of the Poulter, Canterbury, J. D. Enys.

The most slender species yet discovered. Closely allied to C. nana, Hook, f., from which it differs in the lax habit, narrow braoches, longer peduncles, smaller solitary flowers, and shorter wings.

CARMICHÆLIA ENYSII, n. s.—Forming dense hard compact masses, scarcely 1 inch above the surface, 1—4 inches in diameter. Root and lower branches stout, secondary branches 1 inch long, branchlets ½—2 inch long branches 1 inch long, branchlets ½—3 inch long branches 1 inch long stand flowers not seen. Pods solitary, on short erect or decurved peduncles, orbicular ovate, with a short straight or curved beak, compressed, 1-seeded, seed reniform, black; replum thick. Pod dehiscing by a single valve partially separating from the replum and remaining attached at the apex.—Hab. South Island. Terraces of the river Porter, Canterhury, 2500 feet. J. D. Enys and T. Kirk.

One of the most remarkable plants in the flora; the branches are so densely crowded that it is not possible to thrust the flogers between them. Rarely the pods are 2—3-seeded, never more, although the ovary conains four to five ovules. A young plant raised from seed, at this date (February 29) has developed small orbicular, emarginate leaves on short petioles. In all probability these will be succeeded by scales, until the plant assumes its permanent leafless condition. T. Kirk, F.L.S., Wellington, New Zealand.

MARKET GARDENING.

The comparatively new market garden at West House, Egham, the property of Mr. A. Sharp, consists of 20 acres of strong loam overlying gravel. The growing of fruit for preserving and for the London market is the main idea that is being realised, still at the present moment a part of this area is under vegetable crops that have partially covered the working expenses whilst the fruit bushes and trees were arriving at a bearing condition, and possibly interlining with light catch crops will continue to be practised, as in other similar undertakings. The land has been treached to 2 feet deep, and heavily manured—an expense that is now well repaying itself in the heavy crops of Strawherries, Raspberries, and vegetables taken from it.

The land being much exposed, and open country surrounding it, Mr. Peckham, the manager, informed me he had found much good from making use of the turf, originally covering the land, to construct many long rows of turf pits. These are used for all purposes which are intended to forward the early growth of plants, or to protect them from cold during the winter. It is only in new gardens that have taken the place of old pasture land, which is frequently the case in the suburban districts, that sufficient turf is available for this end, other growers using earthen or decayed dung linings; but where sound turf is used no boxes are required, a light frame-work of wood being placed on the turf walls to form a support for lights, or shutters of wood or felt. making the walls it is a good practice to drive sharppointed stakes through them at intervals of 5 feet to keep them upright, and to which the frame may he nailed, and which help to keep the front and back walls from falling outwards.

In some of these the soil had been manured, dug over afterwards, and was beiog planted, in rows about 18 inches apart, with American Wonder Peas. These had been raised in warmth in small 48's, sufficiently hardened off in cold frames, and were promising-looking stuff, stocky and vigorous. They will get protection at night when frost may be imminent either by a sprinkling of old Pea haulm or the felt shutters will be placed on them; but the frost we may expect after the third week in March is not likely to be very damaging. The chief measure of advantage

lies in the warmth that is attained by the slope of the soil—about 40°—and the surrounding turf wall, which tops the beds at the back by about 1 foot. This little amount of protection works wonders in producing a quiet warm interior area, by which the plant growth is considerably accelerated. The usual fault seen in garden frames used for forcing purposes, such as salad, Radishes, Carrots, Celery, Cucumbers, Melons, is that the sides, and especially the front wall or boards, are made too high, by which the plants near the front are quite in shadow, and, moreover, everything grown in them becomes "drawn."

The frames that are used for plant-growing are usually too deep for the earliest forcing purposes. A back made of a foot-broad wheeling plank, and a front of a 9-inch one, and long enough to accommodate six or eight lights, with a slating lath nailed on the front one to keep the lights in the proper place, make the best dung-bed frame; they need no paint only white-wash; can be made to take to pieces very easily with stout latches or hooks at the ends, and last many years if 2-inch stuff be used. In other turf pits were Strawberries, such as President, Marguerite. and others, which, without any forcing, will be much in advance of those in the open ground, many of them already showing stout bunches of bloom just coming up (March 19). These had no protection this winter, and will only receive it if frost should threaten when they are in bloom. Other pits filled with the same varieties were interplanted in autumn with Hicks' White Cos Lettuces, Endive of the broadleaved section, and Cabbage Lettuces.

These latter turf pits had glass lights, and appeared to have been treated less coldly, for Lettuces were in many instances full grown, and the many gaps showed where these and Endive had been drawn for marketing. Under this management not only were the Strawberries much forwarder, but the Lettuces and Endive were very fine for the season, the Cos Lettuces being quite I foot in height, and of great The season had been hitherto very favourable for these plants; with snow and frost, results must be poorer, owing to the longer periods of darkness, either from not being able to uncover at all, or because it would be taken off late, and put on again early in the afternoon. Endives are blanched with concave pieces of pottery like Seakale-pot lids, but larger, the diameter being 10 inches, and they are 4 inches high to the top of the dome, which has a knob to lay hold of. I saw only Batavian under these, but I should think that the finer moss-curled would rot very readily under them. There is a benefit from their use, for every morsel of the plant gets blanched, and is, therefore, made edible, which is not the case when the plant is blanched by tying up.

This garden is planted chiefly with Raspberries (Kentish Fillbasket), which have borne enormous crops in this heavy loam, and which still continued to make strong wood. The horse-hoe is used to keep down weeds after the intervals between the plants have had the weeds drawn out of them on to the middle space. After the ground has been cleaned a plentiful mulching of strong manure is given. Strawberries, Currants, and Gooseberries are the other sorts of fruits grown. Rhubarb is forced in sheds, also under tall earthenware pots in the open quarters. These pots are quite 2 feet in depth, and have a lid like a Seakale forcing-pot. They are roomy, strong utensils, costing at Bournemouth, where they are made, £12 10s. per 100. Johnson's St. Martin's is a sort much liked here. There are earlier ones, but this possesses the three great desiderata, colour, size, and great cropping qualities.

The land under Seakale forms a considerable portion of the garden, and the crop is well managed, as was evidenced by 183 seedlings being sufficiently large to force this winter, many of the crowns measuring 1½ inch in diameter—a size rarely seen in one-year-old plants.

The one want of the garden is shelter, the country for miles round being without wood; and, although fruit trees in rows are planted across the quarters, something more is wanted to break the force of the wind to make the ground warmer, and to hinder the parching up of the soil. Nuts, for which the land is suited, would form capital wind-breaks if planted in the lines of fruit trees. An excellent concrete wall has been built to shelter the land on the north side, and this is planted with Peaches, mostly early varieties; other fences are of wood, and are covered with vigorous trees of Plums and Pears trained in the fan

style. Two vineries, each of 30 feet, and two Cucumher-houses of the same length, make up the only range of glass at present existing. The Vine-borders lie high, and slope steeply from the front wall. The Vines, mostly Black Hamburgh and Muscat varieties, are planted inside, but having an almost unrestricted run they have taken possession of both inside and outside borders—a proof that they can find their requirements in each. The Vines were breaking strongly, and looked in good condition.

PULVERISATION.

WHEN during hard winters the frost literally locks up the soil for a time from the labour of man it is performing no mere natural eccentricity, but, by causing expansion of the water within the soil, is splitting, crumbling, and in the most effective manner pulverising the earth for the benefit of those who cultivate and for that of the crops which it is to produce. It is not, however, till the thaw, the sudden change from a low to a high temperature, comes, that the influence of the frost is seen; for then the hard tenacious earth is found to be free, loose, pulverised, and in the happiest possible condition to receive seeds. We have had during the past winter no frost to perform those agreeable functions, but, on the other hand, we have had a remarkably small winter rainfall. Still heavy soils will become stiff, surfaces will become set and hard, and a general breaking up is sadly needed. What the frost, in its harsh and unfeeling way, usually accomplishes so thoroughly, March winds and drought did in more gentle mood. The earth was not frozen, but baked, and whether turned up to the air, or lying dormant from its previous year's work, the effects of a dry baking March were identical, and the absorption of molsture removed the chief adhesive element. April comes, with its intermittent and genial showers, literally thawing the baked earth with warm softening moisture, and there follows that pleasing condition of pulverisation and prospective fertility that gladdens the cultivator and renders work enjoyable. There are few positions in life fraught with more difficulty than that of a cultivator of harsh, stiff, wet land, that is either in a condition resembling that of brickclay, or which is baked into the consistency of brick-March brought much soil into the latter stage of difficulty; April, so far, has left it in the most delightful coodition. We have, however, had a very dry winter, and it may be that Nature, with her tendency to produce compensations, may yet give us a heavy rainfall ere the summer is upon us. Should such be the case, much, perhaps, as the abundant moisture may be welcomed on light gravel soils, through which it can percolate as through a sieve, it would be a misfortune for the stiff land gardeners, and materially hinder the cropping at present so admirably in progress. With all so well, we can but hope it may so continue that a glorious winter may not he marred by an ungenial spring.

foreign Correspondence.

THE HISTORY OF A PASSIFLORA ON THE GENORSE RIVIERA. - All writers who describe tropical forests mention as one of their most remark. able features the existence of creeping plants, or Lianas, which run up the trees like ropes, without a leaf or a flower, to expand at the summit of the tree into branches, leaves, and blossoms when they reach the light and the sunshine. It would appear that these Lianas, passing from tree to tree, form an inextricable network of rope-like stems, which constitute an obstacle to progress through the primeval forest, where there are no roads, and that they have to be cut with a hatchet to admit of a passage. In our northern climates these creepers are represented by the Bramble, the Clematis, the Bryony, the Honeysuckle, the Ivy, &c., and never attain a development like those of tropical climates. When travelling in South Sardinia a few years ago in magnificent forests, probably primeval, I found, however, that these Northern creepers, including wild Vines, emulated their tropical congeners, making desperate and successful efforts to take possession of the trees against which they grew. I scarcely recognised our humble Northern plants, so audacious had they become, developing themselves with extraordinary luxuriance, ascending to the upper regions of majestic old trees,

and throwing themselves gracefully but powerfully from one branch to another. Evidently was approaching the regions of tropical vegetation.

On my return to my Riviera garden I was fired with the desire to produce some such results, and chose for the experiment a Passiflora, which thrives very well with us, flowering in autumn, winter, and spring. It is here called Tacsonia ignea, but a London horticultural authority told me that it is properly P. manicata. The flowers are numerous, and of a deep red, whence the garden name "ignea." It is generally grown as a bush, trailed over another plant, or on It flowers freely in autumn, sparsely in a trellis. winter, and again freely in spring, but only in the most sheltered positions, such as my garden; with me it flowers all winter more or less freely. I chose a vigorous plant, and placed it at the base of an old

covered in this manner with myriads of lovely flowers, forming a floral carpet high up in the air. Thus is forming a floral carpet high up in the air. explained the rope-like Lianas met with below. They are all rushing up to light and sunshine, and that once attained they burst into life and beauty. This tropical effect excited universal interest and admiration, and all my friends came to see the tropical invader that had taken possession of the poor old Olive tree.

I designedly use the words "poor old Olive tree," for a sad change came over the spirit of thiogs as far as he was concerned. Every year many small branches died. They were at once covered over, it is true, by fresh vegetation, but they formed a kind of mat, the weight of which was increased by a new luxuriant vegetation yearly, whilst some of the branches began to invade the neighbouring trees. They hung down,

branches in our Northern fashion, without trying

branches in our Northern fashion, without trying again to get a tropical effect.

I have another Passifiora of the same kind growing as a trailing bush in and out a mass of Opuntia vulgaris, or Prickly Pear. It has nearly buried the latter, but the Opuntia is a very rough customer, and can, I think, hold its own; so I mean to let them fight it out without any interference. The Solanum jasminoides seems to do very well with us as a tree climber, and not to run riot in an unseemly way, like the Passiflora. Henry Bennet, M.D., Torre di Grimaldi. Mentone. maldi, Mentone.

ANEMONES.

THOSE who are familiar with the Riviera go into ecstasies, as well they may, over the heauty of the wild or half wild Anemones there to be seen in



FIG. 102.-ENGLISH WILD ANEMONES.

Olive tree, in a locality where there was plenty of earth for it to root in. Against the advice of my then gardener, who said I should kill it, as soon as it was well established I cut off all the branches but one, which I trailed up the Olive tree. I continued for several years to cut off all laterals, until it was about 15 feet from the ground. Then, left to itself, divided into three or four stems, each rapidly ran up separate branch, and having arrived at the top of the tree, about 30 feet from the ground, they very soon spread over the entire tree like a sheet of verdure, at the same time flowering most freely and abundantly. I was perfectly delighted. Whenever I looked out from my Saracenic tower, which is 65 feet high, there I saw, far below me, a sea of green covering the Olive tree, and studded with hundreds of lovely scarlet flowers. It was quite a revelation of tropical forest vegetation, I then understood how gorgeous these forests must be, seen from on high, if the summits of the trees are

swayed by the wind, until a stronger blast than usual carried them to the trees adjoining, which they seized, beginning at once the same parasitical extension.

The old Olive tree began to bend as if he were about to give way entirely, and also to droop. I saw that if this went on much longer, and the weight increased much more, he would be broken and killed outright by the embrace of the lovely Liana. So with a sigh the order went forth to have him cleared of his burden. One of my men-an old quarryman-climbed up the tree like a tropical monkey and cut off nearly a waggon-load of branches. It was not surprising that the Olive tree was bowed down by the weight, and he now looks very haggard and forlorn. I have not cut the Liana to the ground, only to about 15 feet from the base. I trust it will shoot forth and flower again as freely as ever, but in a more modest, becoming manner. I shall let it run in and out the large

lustrous splendour in early spring. In this country we cannot, it is true, point to such a flush of colour among our wild species; but he must be strangely insensible who does not recognise the singular elegance of the common wood Anemone, so common at this season in our woods. Rose-coloured, and even blue forms may occasionally be met with. The double form, moreover, unlike most double flowers, is scarcely less elegant than the simple form. These are easily grown in a shady nook, or along woodland walks, in the fashion represented in Mr. Fitch's sketch, and with them may be mixed the blue-flowered Anemone blanda and A. apennina and the nowered Ahemone blanda and A. apennina and the yellow-flowered A. ranunculoides. A. Pulsatilla, with its deep violet flowers, we should not expect to see just where Mr. Fitch has placed it, but rather on chalky downs fully exposed to the sun. On the rockery we find it does best, growing in pockets with plenty of mortar rubhish fully exposed to the sun, but at the same time sheltered from side-winds end autoret. winds and currents.

Notices of Books.

Scripture Botany: A Descriptive Account of the Plants, Trees, Flowers, and Vegetable Products mentioned in Holy Writ. By Leo H. Grindon. London: F. Pltman. 8vo, pp. 362.

To all who have an interest in plants, even though it be but feeble, and unaccompanied by much acquaintance with them, the plants of Scripture appeal with special force. The Palm, the Cedar, the Vine, the Olive, acquire fresh interest from the certainty we experience that we do indeed know the very trees. On the other hand our curiosity is roused to know what the Hyssop on the wall, what the Rose of Sharon, or the Mustard tree could have been. We yearn to know what were the Lilies of the field, while other plants from their strictly personal associations, if we may so say, with the Saviour, seem invested with a sanctity which, if it does not forbid inquiry, at least is out of harmony with anything like controversy. Mr. Grindon has special qualifications for the task he has undertaken; he is erudite and sensible in interpretation, his style is correct and agreeable; above all he is reverent. Preachers making use of the botanical allusions in Scripture too often fail in their purpose from ignorance of what was really in-tended, from an inability to look beyond the letter of the text, or to penetrate the symbolic meaning of the utterance. They endeavour to teach a lesson which is not the one that was intended, and draw inferences from a basis that will not hear investigation. Mr. Grindon steers clear of these defects. In the matter of fact spirit of a scientific observer, he sets to work to sketch in a few pages the climatal and other features of the Holy Land, and the general character of the flora as dependent on those conditions. Then he puts before us readable accounts of the agricultural plants, the Palms, the Cedars, the Oleanders, the Sycamores, the Vines, and other plants concerning the identity of which there can be no question. After the manner of an historian of the modern pattern, alive to the importance of details of agriculture and commerce for the com-prehension of the history of a nation, he points out the plants cultivated for food or clothing, and links together for the purposes of instruction details supplied by philology and botany. By way of illustration, we may note in passing the allusion to the Sanskrit word for Cotton labric in the Book of Esther, i., 6-a circumstance of great interest as showing concurrently with negative evidence that Cotton was not grown in Palestine, and that very early communication with India must have existed. Again, in the spirit of a poet, or a philosopher, he very properly insists on the symbolic or figurative sense which is to be attached to several of the plants named. It is worse than waste of time—it is to ignore the whole significance and point of the lesson to be conveyed-to quibble over the identification of the particular plant in such cases. The appeal has to be made to the intelligence and sympathy of the reader, and the means by which the appeal is to be conveyed is, under these circumstances, a mere detail of very subordinate importance. Mr. Grindon then, as it seems to us, has well fulfilled the object he had in view of presenting to the unbotanical reader a correct and agreeable treatise on Scripture plants—one that may be relied on where strict textual accuracy is needed one that will not mislead when figure or metaphor is the main point to be considered. A good index adds A good index ad to the usefulness of the book to the many, while the few will appreciate the list of Hehrew names ap-pended, and wish that the very numerous Greek names and epithets scattered through the book had been similarly brought together.

Onions.—The following experiment with Onions is quite suggestive. The soil was thoroughly pulverised over a small plot of ground, and an adjoining plot equal size was packed as hard as possible by repeatedly pounding it with a heavy maul. The surface of both plots was then covered with finely pulverised soil to the depth of half an inch, and on June 3 three rows on each plot were planted with seed of the Large Red Wethersfield Onion. Late planting was disadvantageous to the yielded 9 lb, 7 oz. of merchantable bulbs, while the three rows on the compacted soil yielded but 3 lb, 3 oz. The percentage of vegetation in the two plots was not noticeably different, although the vegetation was prompter on the compacted soil. E. Lewis Sturtevant, New York Agricultural Experiment Station.

Orchid Notes and Cleanings.

DENDROBIUM THYRSIFLORUM, - A very fine variety of this heautiful Dendrobe is now in flower at Lord de Lisle's, Penshurst Place. It is an imported plant, and last year gave promise of being a fine sort, but it was only a very small bit of flower that appeared, still there was enough to show that it was something out of the common run of varieties. This year it has thrown up a fine strong raceme, to inches long, about 51 inches wide, with forty-one flowers on it; each individual flower is 2 inches across. The great beauty of the flower, of course, is in the colouring; the labellum being of an intense dark orange, while the petals and sepals are of a pure white, a combination that makes it a most attractive flower. this is another good thing among the many that have turned up in this collection is certain. Among others may be mentioned two fine varieties of Odontoglossum Alexandræ, that are in flower at the present time; the white one, having a bold erect spike, with great substance in the flowers, and with very broad and flat sepals and petals-the other is equally good, but different in the markings, and has a beautiful drooping spike. All the Orchids are in splendid health, the Odontoglossums especially; grown, as they are, in low pits, almost on a level with the ground, air being admitted night and day (excepting in the severest weather) - they present example of really good cultivation, having stout bulbs and foliage, with that ruddy colour so sure a sign of health. W. H., Redleaf.

"LES ORCHIDÉES."-Under this title Madame G. VAUGET, of Geneva, has published a series of large folio coloured plates, which for correct draught-manship and grouping are all that could be desired. As pictures they are admirable for their general fidelity the management of leaf-perspective and light and shade, but for strictly botanical and horticultural purposes there is a want of definition as to points of detail, which from that particular point of view impairs their usefulness. The leaf-coloration also would ensure the dismissal of any gardener whose plants were in such condition. But it is probably as an artistic study that the author would wish these plates considered, and as such we have nothing but praise to bestow. It is rare indeed to see such boldness of treatment associated with an equal amount of general correctness. Messrs, Lechertier, Barbe & Co., of Regent Street, are the agents.

CALANTHE VESTITA WILLIAMSI.—A form which originated in the Holloway Nurseries, and which is very remarkable for the deep crimson lip—the other flower segments are flushed with the same colour. It is the brightest coloured Calanthe yet known.

LæLIA AMANDA.—An evergreen species with broad oblong leaves, and erect panielses of flowers. The segments are narrow, oblong, pale rosy-lilac, the lip, convolute at the base, expands in front into an oblong crenulate disc marked with deep purple lines. It is a native of Brazil, and is figured in the Orchid Album, t. 135. Mr. Williams recommends it to be well raised above the pot or basket in which it is growing, and to be provided with plenty of moisture in the growing season.

ANGULOA EBURNEA.—The Anguloas are remarkable for their large egg-like flowers, the yellow A. Clowesii being that most commonly met with. The present species has ivory-white flowers, and is figured in the Orchid Allum, I. 133, from the collection of Sir Trevor Lawrence. Mr. Williams grows them in the cool Odontoglosum house, transferring them to the Cattleya-house wheo showing bloom. Pot culture in rough fibrous peat, with good drainage, is recommended.

CYPEIPEDIUM CALURUM X.—A cross between C. longifolium and C. Sedeni X. and a useful plant, from the beauty of its flowers and the length of time they remain in perfection. The dorsal sepal is reddishgreen, striped with pale purplish crimson; the petals also pale crimson, with a central green vein; the lip is deep crimson externally, greenish-white internally, and spotted with dull purplish-crimson. It does well grown in pots with rough fibrous peat and good drain-

age, and a moderate supply of water at all periods, as the plants have no pseudobulbs to support them.

THE ORCHID MARKET.—At the sale of Orchids in flower at Stevens' Rooms on the 9th the highest bid made was 26 gs. for a very dark variety with large flowers of Odontoglossum vexillarium. Other prices realised were:—Cattleya Trianæ eboracensis, §g.; Cattleya Mendelii, dark-flowered variety, §g. gs.; Odontoglossum Alexandræ, mægnificent variety, 14 gs.; another grand rose-coloured variety, 24 gs.; Odontoglossum Pescatorei, a grand specimen with five spikes and 180 flowers, 21 gs.; Odontoglossum Andersonianum, 10 gs.; Dendrobium Jamesianum, 15 gs.; Cypripedium lævigatum, 5 gs.; Lycaste Skinneri alba, 14½ gs.; Masdevallia ignea, 5 gs. and £5 15:.

DENDROBIUM WARDIANUM.—That this is one of the most beautiful of this charming penus is, I think, very geoerally admitted; and, owing to the large importations which have come to hand during the last few years, is now to be met with in every collection. I had the pleasure a few days ago of seeing some grand examples of this lovely plant in the collection of John Heywood, Eaq., of Stretford, near Manchester. Some of the varieties were much better than others, but taken as a whole I have not seen a more magnificent display of this lovely Dendrobe in any collection. Speaking of varieties, in Orchid culture variety, of course, is everything. The fact of the varieties superior makes the plant valuable, and that collection will be the most choice in which the hest varieties are found. I remember the late Mr. J. A. Turner, of Manchester, when asking what Orchids any one had in bloom, and when told replied, "But what is your variety?—the variety is everything." Now that these plants are getting as common as bedding-out plants, cultivators will no doubt keep only the best kinds. Alpha,



SELDOM has the spring garden presented a better and gayer appearance than it has done this year; this is no doubt to a great extent due to the absence of severe frosts during the past winter, as well as to the exceptionally fine spring we have enjoyed. There is this year no unevenness in the growth of the plants, and no unseemly gaps to deplore and rectify. All the beds are perfectly filled with luxuriant plants, which at the present time, in connection with the very numerous and most charming bulbous plants, produce such a pleasing variety ln colour, and such a softness in tone, as to quite eclipse the effect produced by the more gaudy summer plants. Daily attention is now requisite to keep the beds trim and clean, as well as to protect the plants from injury; at the same time no labour or pains should be spared in keeping walks and the surrounding lawn in the most perfect order possible.

SHIMMER BEDDING PLANTS should now be hardened off by gradual exposure to the open air, so as to fully prepare them for the operation of transplanting as soon as the bloom on the spring plants decay. Calceolarias are especially benefited by early exposure and removal to their permanent positions, for unless they are planted out sufficiently soon to enable them to obtain a good hold of the soil before hot weather ensues they will most assuredly fail, and as the summer garden without the presence of the Calceolaria is shorn of one of its brightest gems every means should be employed to ensure its success. The beds intended for its reception should receive a liberal dressing of well decayed cow manure and fresh sandy loam; after heing dug they should be trodden somewhat firm, and the plants introduced as soon as possible. Should severe frosts occur they should receive the protection of a garden mat placed over hoops or wire netting strained just above the plants; the foliage may possibly become somewhat discoloured by planting t early, but on the approach of mild weather they will quickly recover their healthy appearance.

VIOLETS.—These now demand the little extra care and attention to which they are so justly entitled. As the plants cease blooming the strongest young growth or crowns only should be selected for future propagation; if these can be found with young roots emanating from their base so much the quicker will

they become established in their new positions. In choosing a suitable summer situation for these some care and discretion should be exercised, for while they are partial to a limited amount of sunshine, they exceedingly dislike either a hot situation or a dry or loose soil. In such un wholesome quarters they not only refuse to grow satisfactorily, but they quickly become a prey to red-spider and other insects from which no amount of watering or syringing will free them. In exceedingly hot summers even a north border is far preferable to such a position, but in ordinary seasons, while they will grow well in such a border, they do not receive sufficient sunheat to fully ripen and develope their crowns, and consequently they do not produce such an abundance of flowers as when grown under more suitable conditions. A border situated either on the eastern or western side of a wall I believe to afford the best aspect for them, in which position they seldom fail to thrive satisfactorily, for while they receive sufficient heat they are at the same time partially screened from cold, cutting winds. In preparing the border for them, it should receive, if p a moderate dressing of thoroughly decomposed hotbed manure; but if the soil be rich, a dressing of fresh loam and sharp sand will be preferable, as in too rich a soil the plants do not form those stout, sturdy crowns so essential for the production of abundance of bloom. If the soil is light it will be advisable to give a dressing of marl or well pulverised clay, and after being dug it should he trodden thoroughly firm before the young plants are inserted; this highly important, as no plant suffers more quickly during summer in a soil of loose texture than the Violet. Having selected the strongest young crowns, dibble these into the horder at intervals of 12 inches; when planted prick over the soil between the plants just deep enough to prevent a hardened surface impervious to rain and air, but by no means loosen the plants. If dry weather ensue it will be more conducive to their growth to shade them during the day for a short time by laying mats over them rather than give water; taking off the mats at night, when not frosty, so as to expose them freely to the moist air at night. As they grow the surface of the ground between them must be frequently loosened either with the hoe or fork, for although they root freely in a firm soil, they cannot succeed if the surface will not admit air and moisture. As the side shoots appear pinch them off persistently so as to produce as large and bold a crown as possible, or if they are required for potting in the autumn, six or eight of these lateral growths may be allowed to form crowns round the parent so as when potted to hang over the edge, where they not only partially hide the pot but produce abundance of flowers. An occasional watering with liquid manure will be found very heneficial during the period of growth.

The Pitchen Garden.

PLANTING, — Advantage must now be taken of genial showers to plant out good breadths of Cabbage, Cauliflower, and Lettuce plants, also Brussels Sprouts, which should be planted in rows at from 2 to 2½ feet apart, and the same distance in the rows in rather shallow soil—say from 12 to 15 inches deep where the plants will make a dwarf, sturdy growth and close compact sprouts, in striking contrast to the large loose ones produced by plants which have been set in deep rich soil.

SEED SOWING.—Another sowing of Turnips and Lettuce should now be made; also a sowing of Salsafy and Scorzonera should be made in drills an inch deep and a foot asunder. Where Cardoons are in request the seed should be sown at once in a box or pan, and placed in a frame, and as soon as the seedlings have come through the soil they should be gradually hardened off and subsequently planted in trenches of I foot in depth and 16 inches wide, and 4 feet from centre to centre, and the plants be put in at 16 inches apart. The trenches are prepared similarly to those for Celery. The present will also be a good time to make the main sowing of Broccolis and Kales in beds 4 feet wide with an alley 1½ foot wide between the beds. The ground should be trodden over and raked before the beds are marked out. The seed should be covered with a quarter of an inch thickness of soil from the alleys, or, what is better, sifted potting-hench soil, which should then be neatly

levelled, and the surface of the beds patted with the back of the spade so as to compress the soil and seed. After this the attacks of chaffinches and sparrows must be guarded against, as recommended in our last Calendar. The following excellent varieties, which I will divide into four classes, and in the order in which the respective varieties come into use, may be depended upon viz.:—Autumn varieties: Veitch's Self-protecting, Grange's Early White Cape, and Early Purple Cape. Early winter varieties: Snow's Winter White, Backhouse's Winter White, and Early Penzance White. Early spring varieties: Sprimstone, Chappell's Cream, and Frogmore Protecting. Late spring varieties: Cooling's Matchless, Carter's Champion, Cattell's Eclipse, Richmond Late White, Model, and Ledsham's Latest of All.

SCARLET RUNNER BEANS .- As our mode of growing these is somewhat different from that generally practised, and the results are thoroughly satisfactory, I will briefly state it. We grow two rows, each about 60 yards long and 8 feet asunder, which run east and We plant our first row on or about April 24 (a few days earlier or later is of no consequence), in drills 3 or 4 inches deep, and the second row about two months later, and in front (south) of the first row. And instead of using sticks 8 or 9 feet long as supports for the haulm, we use Ash poles as long as we can get them without being too thick and heavy-say from 12 to 13 feet long-which are stuck firmly in the ground I foot apart, on either side of the runners, and braced together by a line of bean-sticks fastened longitudinally on either side the upright sticks at 6 or 7 feet from the ground by means of cross-ties made of tarred string, by which means the rows of sticks are made secure. Instead of stopping the runners, as is generally done with a view to hastening the formation of pods, we allow them to grow uninterruptedly, and so cover their allotted space, thereby prolonging considerably the supply of runners, inasmuch as the individual plants yield a succession of Beans from hottom to top, the finest Beans being on the top. gather good supplies of Runners to the middle and end of November, by the aid of a long pair of steps, from the row sown at the end of June, which is protected by the shelter afforded by the first row from the effects of cutting winds and autumn frosts.

GARDEN WORK .- This will coosist in the earthingup of Cauliflower and Cabhage plants, and rows of Peas and Broad Beans; sticking the former and stopping the haulms of those coming into flower, which owing to the temporary check the plants thus experience, causes them to pod quicker than they would otherwise do. All Peas which have been earthed-up and sticked, should now have a good mulching of rotten dung put on either side the rows, which will act as a manure, and also prevent the soil from getting too dry. Beans are benefited by the same treatment. This done, it will be advisable, on light soils, to give both crops a good watering at the roots. Prick out in nursery-heds on a warm border, young plants of the first sowing of Cauliflowers, Cabhages, Brussels Sprouts, Savoys, Leeks, and Lettuce, the last named 3 inches apart every way, and the other sorts 6 inches; and water them through a finerosed pot, if the weather is dry. Thin out Turnips, Carrots, and Spinach, to a few inches apart in the rows, and subsequently thin them out to 9 inches. Vigorous use must now be made of the Dutch hoe, not only with a view to accelerating growth in the rising crops, but the cutting down of weeds wherever they appear, an operation for which the weather which we have been having has been highly favourable. Potatos just coming through the soil should have a little of the latter drawn up to them, and a slight protection in the shape of a little Fern or straw afforded them when there is likely to be frost. Failing a readier, though not a more efficient means of protection, a flower-pot may be placed over each haulm (where the plantings are not extensive) at night, and removed in the morning.

THE HERE BORDER.—As the demand for herbs is a constant one, in order to maintain a young and plentiful supply it will be necessary to make fresh plantations of the respective kinds, those most required being Tarragon, Mint, common and Lemon Thyme, Sage, &c. These are easily increased by division of the roots and slips, and should be planted in rows at from 10 to 15 inches asunder; and this, like all other departmental work, should be performed neatly. Seeds of herbs may be sown this

month, to be afterwards thinned out, or planted in beds, as may be found convenient.

FORCING DEPARTMENT. -Trophy Tomatos of the sowing made at the end of February for planting outof doors in May, and subsequently potted off in small 60's, should now he shifted into 48's, and grown on steadily for a few weeks longer, so that they may become good sturdy plants for planting out on south walls or fences by the third week in May. Another batch of French Beans should be sown in pots, to be transferred to pits later on; and see that those at present in Peach-houses and vineries are kept free from red-spider by giving them copious supplies of water at the roots, and syringing the plants overhead thoroughly a couple of times a day. See that Celery plants in frames have sufficient water at the roots, and have the lights taken off on warm days, and tilted up at night, so as to prepare them for planting out shortly. H. W. Ward, Longford Castle Gardens.

The Handy Fruit Garden.

THE weather so far has been favourable for the blossoming and setting of our hardy fruits. Plums are quite a sheet of bloom, Pears and Cherries are equally so, while Apples promise well, and the blos-

soms are fortunately not open as yet. Apricots and Peaches have set well, so that with another fortnight or three weeks of fine weather and freedom from frost we may hope for an ahundant crop of fruit. For the present do not remove the coverings from the wall trees, the second week in May being soon enough in the Southern and Midland Counties. Apricots will soon require thinning, leaving the fruits which are finest and best placed; the thinnings make excellent tarts. This operation should be carefully done at three times in as many weeks. Stop any overluxuriant shoots, especially in the centre of young trees, as it is desirable to restrain these and to promote the growth of the side branches. It should be boroe in mind that the foliage of the Peach tree is more susceptible to injury than the blossom, and that with continued cold weather and harsh winds in exposed localities the disease known as "curl" is almost certain to appear, and this is generally followed by a host of aphides, which multiply very rapidly, sucking the very life out of the tree; therefore have a good supply of some trustworthy insecticide at hand, such as Gishurst Compound, Fir-tree oil, or home-made Tobacco-water and soft-soap, or Quassia-water. Any of these used in time will save much labour in the future, and the first growth of the trees, which in turn will produce better hearing wood for next year, will be rescued from destruction.

The unusually dry weather will render the watering of newly-planted Strawberries a necessity, so let this be done effectually. Where the Strawberries have not been mulched, no time should be lost in getting it done; the time-honoured practice of using straw is the hest, the worst material is lawn grass, which in wet weather becomes mouldly, spoils the fruit, and rots too quickly. Any digging of fruit tree borders which remains to be done should be performed with care, using digging forks in preference to the spade, more especially in the case of trees like Cherries, Figs, and Plums, whose roots are near the surface. J. Rust, Eridge Castle, Sussex.

THE TRITOMAS. — Without presuming to indicate the exact position these fine hardy herbaccous plants should occupy in the flower garden and pleasure grounds, it may be stated that the plants from their large growth and pendulous foliage, that reaches to the ground, require much free space around them, so that they can be advantageously seen, and this consequently fits them much less for the border than for solitary plants or groups on the turf of the lawn. By this kind of planting we also get rid of the bare earth, as it is only necessary to leave quite a small circle free of grass round each plant to prevent injury when mowing. Planted in this way five or more together, leaving enough space between each for proper development, the Tritomas make fine effective masses in garden landscape, almost equal to the Pampas grass when at its best; and as the Tritomas are never seen in the shabby state a Gynerium presents after a severe winter, they should be preferred in sites seen from the windows, or they may be used with advantage planted around the Pampas grass to screen its foliage in part.

APPOINTMENTS FOR THE ENSUING WEEK.

APPOINTMENTS FOR THE ENSUING WEEK.

MONDAY, April 21

Sale of the late Mr. R. Hanbury's Collection of Stove and Greenhouse Plants, at Stevens' Rooms (Harrier days).

TUESDAY, April 22

FRUIT AND THE STATE OF THE S

THE ANNUAL REPORTS of the ROYAL GARDENS, KEW, have of late years so largely developed in interest that they have become not only the formal record of work done in that establishment, and in the colonial gardens more or less closely connected with it, but constitute a sort of year-book of economic botany. It is with regret, therefore, that we have only now received the report for the year 1882. Pressure of work, the ill health and absence from duty of the Curator, whose duties thus devolved in a great measure on others, as well as other personal reasons of a similar regrettable character, account for the delay-a delay, moreover, for which the officials are not wholly responsible, as, to make matters worse, nearly six months have elapsed since the report was sent in. The most important matter (from a purely horticultural point of view) alluded to in this report is the formation of the new rock garden. The history of this undertaking is alluded to, and fitting tribute paid to the memory of the late Mr. JOAD, whose fine set of herbaceous plants was handed over to the Kew authorities, and served as the nucleus for the collections now displayed. We have more than once referred to this very satisfactory piece of work, to the rapidity with which it was constructed, and have given illustrations of it, so that it is not needful now to say much more than that the rockwork improves apace, and that it constitutes, as we expected it would do, one of the most popular features of the garden. The association in its formation of rocks and stones with tree-stumps has been criticised adversely by some, and no doubt the roots are objectionable as harbouring insects and slugs, and promoting the growth of fungi. Against these objections may be set the fact that the association in question is very picturesque and perfectly natural, as any one who has traversed a Swiss mountain road knows, and that by means of the different conditions of soil, shelter, shade, and moisture thus afforded it becomes possible to grow in association plants which otherwise

could not be brought together. The "Wild Garden" formed on the slopes of a mound near the Cumberland Gate, is to our thinking, scarcely so satisfactory. The idea is an excellent one, which we should like to see carried out at Kew on a much larger scale, but in its present conspicuous position near the dressed portion of the ground, close to formal walks, and in the immediate vicinity of the rigid architectural lines of the Museum, it scarcely seems in place. If carried out at all in such a situation we should have preferred planting a mass of some one thing which should give a great breadth of colour, such as Anemones, Crocuses, and the like in their season, rather than isolated patches of particular things which give a sort of impression as if they wondered how they got there; but this is a matter for individual opinion.

The gradual development of the Arboretum is matter for unmixed satisfaction. An accurately named collection of hardy trees and shrubs is essential to a public establishment of this kind. Private arboreta get neglected, or,

as in the case of the once celebrated one at Chiswick, disappear altogether, and our nursery establishments are necessarily tied by business considerations, so that really admirable plants go out of cultivation, and become lost because they are no longer the fashion. The consequence is that when by chance some of them reappear there is great difficulty in naming them correctly. Some day or other the taste for hardy shrubs will revive, and then the value of the Kew collection will become more than ever apparent.

Into the details of the colonial correspondence relating to economic botany we cannot now enter, as we may have occasion to make some extracts from them at a future time. We cannot, however, help adverting once again to the splendid service to humanity that Kew and those associated with it have been enabled to effect in the case of the Cinchona in India. Ceylon, Jamaica, and elsewhere, to which may now be added the introduction of the three most important sources of indiarubber into our Eastern dominions, where it has now been proved that they will yield products in no wise inferior to those yielded in the native countries of the trees in question. The commercial importance of this subject can under the existing demand for rubber hardly be over-estimated.

The intimate relation between botanical science and practical utility is singularly borne out in the history of these two enterprises, Even the question of nomenclature, a dry enough subject, apt to be looked on by the profane as at the best laborious trifling, and to be slightly considered by the new biological school of botanists, is incidentally shown in the pages of the present report to be a point of first-class importance, to the full as necessary for the successful carrying out these great and beneficent schemes as any other department of

botanical science.

In quitting for the present the consideration of this report we must not omit to mention one of its most valuable features, which, like the traditional postscript to a lady's letter, occupies the appendix. This is a list of the Palms cultivated in the garden, amounting in all to 420 species. These have, so far as circumstances permitted, been identified by Sir JOSEPH HOOKER, who here gives us a list of the names HOOKER, who here gives us a list of the names and localities of the species classified under the several tribes, sub-tribes, and genera, adopted by him in the last volume of the *Genera Plan-*tarum. In many cases the dimensions also are given, and references made to the illustrations of the plants in the "North Gallery."

One more postscript, devoted to figures.

One more postscript, devoted to figures. The number visiting the garden in 1882 was 1,244,167 !—the largest number on any one day

being over 95,000.

— THE GARDENERS' ROVAL BENEVOLENT INSTITUTION.—During the past week the annual list of subscribers, which seems to increase in bulkiness every year, has been issued, together with the following special and important appeal, signed by Mr. EDWARD TIDSWELL, the Treasurer, and Mr. JOHN LEE, Chairman of the Committee :- " Referring to our letter of December 15 last, we beg to remind you that the committee have had under their consideration for some years past, the question of augmenting the pensions by the sum of £4 each, but before this desirable object can be carried out they consider it necessary that the reserve fund should be raised to £20,000. For the last three years they have caused collecting cards to he issued among gardeners, nurserymen, and others interested in horticultural pursuits, and the result has been that the sum of £2400, including the 'Arthur Veitch Memorial' Fund, has been sub-scribed. A further sum of £2250 is required before the committee can recommend the proposed increase of the pensions. The sum of £1312 was distributed in pensions last year. tleman (who for the present wishes his name withheld) has promised that if the sum of £1750 be raised before the end of the year he will give the munificent sum of £500 to complete the amount required. have had a legacy of £500, and we have at the bankers the sum of £150; with these amounts in hand only £1100 remains to be secured. Under

these special circumstances we take this opportunity of bringing the matter prominently hefore the subscribers, feeling assured that those who take an interest in the Institution will second, to the hest of their ability, the exertions of the committee in their endeavours to alleviate the distress and minister to the comforts of old and deserving horticulturists. To the affluent and generous lovers of horticulture we appeal with confidence, and to gardeners we also appeal, in the hope that they will assist their poorer brethren. Friends to the cause will kindly fill up the enclosed form and return it to the Secretary (Mr. E. R. CUTLER, 14, Tavistock Row, Covent Garden), who will on our hehalf gratefully and thankfully acknowledge any contribution, no matter the amount."

- BOTANIC GARDEN, GHENT .- M. A. VAN EECKHAUTE, son of one well known in connection with the nurseries of M. VAN HOUTTE, has been appointed Curator of the Ghent Botanic Garden in place of M. VAN HULLE. We trust that M. VAN EECKHAUTE may succeed in inducing the authorities to remodel this garden or establish it on another site, for, to say the least, it is not worthy of the city of flowers in its present condition.

- M. LUDDEMANN, -The death of this famous Orchid-grower on the 15th. ult., at Bourg la Reine, demands notice. He was formerly gardener to Mr. PESCATORE, at St. Cloud, and subsequently established a husiness in Paris. His name will be long remembered by Orchidists.

- NEW ZEALAND PLANTS.-Mr. JOHN F. ARMSTRONG, of the Public Gardens, Christchurch, has published a useful list of timher trees, alimentary, fibre, fodder, medicinal, oil, and dye plants, plants for tanning and basket-work, for binding sand-drifts, and for making hedges suitable for cultivation in New Zealand.

- BOMAREA CONFERTA. -We had the pleasure last week of seeing a splendid tuft of flowers of the handsome new Bomarca conferta, figured and described in our vol. xvii., p. 187. It consisted of fifty-six perfectly developed crimson blossoms, and was the finest example of home growth that has yet come under our notice. As a cool greenhouse climber it must, when better known, become a very popular plant. Messrs. Shuttleworth, Carder & Co., who introduced it from Bogota, have every reason to be proud of their acquisition.

- A NEW HYBRID ANTHURIUM. -Mr, ERNEST BERGMANN informs us that another hybrid Anthurium has been raised at Ferrières, and is now in bloom. It is the result of a cross between A. Andreanum and A. Lindeni, the produce being a Lindeni with a cherry-red spathe and violet spadix.

 SAXIFRAGA STRACHEVI ALBIFLORA PUBES-CENS. - Herr LEICHTLIN has just flowered an interesting new form of the Saxifrages of the Megassea group. It is a white-flowered form of Stracheyi, with oblong sepals, and very hairy peduncles, and calyx closely allied to var. Milesii, and matches a plant gathered by Dr. AITCHISON on Mount Sikaran in Afghanistan, at an elevation of 11,000 feet ahove sea-level.

 KEWGARDENS.—The Royal Botanic Gardens at Kew received 53,000 visitors on Monday last, all respectable and orderly. Last Easter the number was only 38,000; the previous year it reached the high total of 56,600. With that exception so large a return as Monday's has not been reached on any Easter Monday, at least since 1878.

GIANT INCOMPARABLE ! - Since the Daffodil Conference a giant among the incomparabilis section has made its appearance. Some correspondents have obligingly given us the history of the plant, and fowarded us drawings. As the name is not quite settled, we defer mentioning it for the pre-It rather looks as if the Peerless Daffodil was not satisfied with its condition, but had puffed its cup out to emulate that of the Maximus variety of Daffodll.

DAPHNE GENKGUA, -A charming species, of dwarf habit, having the appearance of a small Lilac (Syringa). It is a Chinese plant, requiring the protection of a greenhouse in winter, but the pot may be GARDENERS' CHRONICLE

sunk in a bed of sand or ashes in summer in a situation sheltered alike from too much sun and

- STRAWBERRY CULTURE.-The cheap little brochure about Strawberries, in which Mr. W. DOUBLING about Strawberries, in which Mr. W., LOVEL, of Driffield, Vorkshire, gives particulars of their cultivation in garden and field, has reached a fourth edition. With such a recommendation we need only add that the publisher is Mr. G. R. JACKSON, of Driffield.

- BEGONIA REX VAR. COMTESSE LOUISE ERDÖDY.—A remarkable plant, the issue of a cross between the Begonias known as Alexander von Humboldt and B, argenteo-cupreata. The leaves are sowing it to come in between the Onions stored away for winter use and the autumn sown Tripoli varieties. It is a most useful variety when the stock of it is true and good,

- STEPHANOTIS FLORIBUNDA. - It is well known that some varieties of this popular stove plant bloom more freely than others, and this characteristic is strikingly apparent in the case of a plant in the Priory Gardens, Warwick, the residence of THOMAS LLOYD, Esq. Mr. GREENFIELD, the gardener, has forwarded the terminal point of a shoot, not more than 4 inches in length, which contains sixteen very fine expanded flowers and ten unopened buds, in clusters issuing from the leaf axils. The plant, which covers the inside of the roof of a lean-to house, is at present

the hands of those interested in the show. That the show is fixed some three weeks later than usual will cause no regret, and northern growers specially may benefit. The Civic patronage vouchsafed to the Potatos is still continued, and it is hoped that whatsover may he the fortunes of the old London Corporation, the new one may not be less interested in our national tuber. Following within a few days of the close of the Crystal Palace show comes the Potato competitions at the National Health Exhibition, arranged by the Royal Horticultural Society, and the liberal prizes offered show that the right influence has been at work in the preparation of the schedule. Special interest attaches to these South Kensington classes, because they include garden kinds, field kinds, English raised kinds, American kinds, and others,

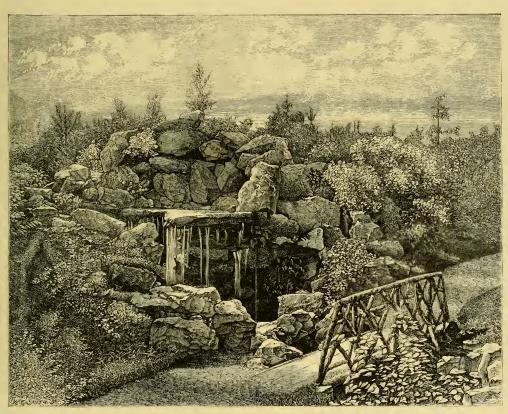


FIG. 103.—THE DRIPPING POOL AT GLENCORMAC, CO. WICKLOW, (SEE P. 510.)

obliquely cordate, ovate-acute, the smaller of the two basal lohes twisted in a spiral manner, with as many as four coils. The upper surface is silvery, with the veins deep green, the lower surface reddish, pilose. The spirally coiled lobes of the leaf give to the latter an appearance of a funnel or of the filtering-paper used to line funnels, only the coils are separate, not an approximation. Illustration Horticole, t. 516.

- THE WHITE QUEEN SILVER - SKINNED -This is a most valuable Onion for autumn sowing, for already it is bulbing-in quite fast. Mr. BARRON has it at Chiswick from two or three sources; the best is that from Messrs. VILMORIN, ANDRIEUX & Co., of Paris. Long before the Tripoli or Lishon varieties show signs of forming bulbs, the White Oueen partakes of this character, and is ready for use early in April, Gardeners should make a point of

a compact mass of bloom, and is surprisingly free; he has been cutting from it for a month past, and he expects to be able to cut abundantly up to June and even July. It is treated to copious supplies of liquid manure, and the more liberally it is treated in this respect the more floriferous it is.

- POTATO EXHIBITIONS .- As the schedule of the International Potato Exhibition is somewhat late in appearing this year, many growers have begun to fear that the annual gathering of Potato exhibitors at the Crystal Palace had fallen through. They will, however, he reassured on learning that the schedule of prizes-which promises to be an admirable one, and may possibly include some classes for those exhibitors who hitherto have been unable to secure first prizes, and thus may find more encouragement than they have in the past-is nearly ready, and may soon he in

thus creating distinctions that are somewhat novel on the show table. How far the distinctions may in some cases be clearly defined is uncertain, but at least the kinds, whether specially suitable or not, can hardly be the same. It is to be deplored that with so many able and practical cultivators brought to London at the same time, as will be the case in October next, no effort should be made to utilise so much knowledge in a conference or some other gathering. Surely the cultivation of the Potato, especially In relation to protection from disease, is of as much importance as the cultivation of Daffodils, and some may think it to be even more so.

THE STAPHYLÆAS. - One of these bandsome deciduous shrubs, S. colchica, has heen introduced of late years for forcing purposes and from its beautiful appearance is likely to be yet

more largely grown. The sprays of the purest white, resembling tapering bunches of small Snowdrop bells, are set off by cheerful green compound foliage, making it even more effective, and decidedly a more graceful plant than forced Lilac of any colour. As yet the major portion of the plants seen are of continental growth, but our growers on warm soils in the southern counties should succeed with the plant equally well. S. pinnata is a rather more common shrub, still not everywhere met with; the flowers are quite as numerously produced, the racemes being as long, but they are less purely white, still the shrub is a bandsome one in flower and foliage, and is a vigorous grower, attaining a height of 12 feet or more. S. ternata is similar to the last-named, but smaller in all its parts. In warm situations seed is freely produced from which plants can be raised. The seeds of S. pinnata are the size of small Horsebeans—those of S. ternata about half that size. When seed is not obtainable propagation may be carried out by autumn cuttings and layering, or by suckers. The plants are handsome subjects for a grass plot.

- ROSACEÆ.-Messrs. VEITCH have sent us from that garden of delight, Combe Wood, specimens of flowering trees of this order, which show that they are fit associates for the Rose.—Pyrus spectabilis is a Japanese tree with tufts of rose-coloured Apple-like flowers, most freely produced, and quite hardy .-Cerasus avium multiplex is the double-flowering Cherry, of which there are two varieties, one of which is better than the other, though both are very lovely; and Cerasus Sieboldi rosea is a Cherry of profusely flowering habit, the flowers large pale rosepink, semi-double, but not quite symmetrical enough to please the florists .- Spiræa prunifolia, fl.-pl., is a delightful little shrub, with its compact balls of white petals on long slender stalks. It is an excellent plant for forcing, as well as being perfectly hardy.-Pyrus Maulei: It is still the opinion of some that this fine species, described and figured by us at p. 756 of our volume i, for 1874, is no other than a form of P. japonica. In any case, it is abundantly distinct for garden purposes, and the peculiar shade of orangecrimson is quite uolike anything we know of among varieties of Pyrus japonica. Moreover, in foliage and fruit it is quite distinct,

- AUBRIETIAS .- The large collection of these which Mr. BARRON grows on the rockwork at Chiswick is now in flower, and affords a good opportunity for comparison and selection. Taking it for granted that the deep coloured varieties are preferable, the three best are Campbelli, Eyrei, and violacea, the last-named having the largest flowers and deepest colour. They form excellent patches on the rockwork, and are very gay in the spring sunshine. But it is at Belvoir that one sees Aubrietias used with marvellous effects in spring. Here Mr. INGRAM trusts mainly to seedlings of his own raising, and in course of selection he appears to have endowed them with wonderful precocity—"educated them," as he terms it. On the warm sunny slopes of Belvoir they grow and flower in native freedom; they pour themselves over the rockwork in large patches, looking like a cataract of blue; and they run themselves over the sides of raised beds with all the profusion vigour can impart. There, amid surroundings so congenial to early flowering, they bloom a great part of the winter, and are at their greatest beauty when, else-where, scarcely more than the earliest flowers are putting in appearance. At Belvoir, mingling with the blue flowers, can be seen some approaches to rose-coloured varieties; but the best of these falls a long way behind a most charming rose-coloured form that can be seen in Mr. INGRAM's interesting reserve garden. This came from Mr. MAX LEITCHLIN, of Baden-Baden, and adds another to the list of valuable novelties which have already come from the same source, and not only are the flowers novel in colour, but they are also large and finely formed.

—— COTTAGERS' SHOWS,—Is it not time that the element of surpicion which always seem to float about in the minds, not only of horticultural committees, but equally so in the minds of writers on cottagers' shows, was obliterated? If anything could tend to counteract the attempts at good, always kindly and well meant, though often misdirected, put forth by cottager patrons in the interests of the labourers, surely it is that constant expression of doubt and distrust which seem to pervade horticultural committees as to the honesty and integrity of those they would

seem desirous to benefit. Quite recently a wellknown and kindly intentioned writer suggests that cottagers' gardens should always be visited the day before the show, to ascertain whether their exhibits arc bond fide their own or not. Is not that offering a boon with one hand and with the other giving a nasty slap in the face? Is a man necessarily dishonest because he is poor? or do cottagers' exhibitions or their competitions with garden produce for many prizes of necessity lead to deceit? If this latter position be admitted then better quash the exhibitions at once than maintain that which only tends to cheating and deception. We venture, however, to believe that not only is this carping suspicion unwarranted, but that the constant expression of it, in the shape of visiting committees, and of warnings by writers in the Press, are calculated to lead to the very evil it is desired to keep in check. An intelligent cottager said with much truth the other day, "Why select us only for the honour of visits from a committee, and not serve amateurs and gardeners the same?" The indignation thus expressed at the humiliation sought to be imposed upon one section of the exhibitors only is just what is largely felt by cottagers, who desire to do that which is right and honest, and yet know that if they are ever so virtuous they cannot escape the degrading suspicion that they are less so than their superiors.

— EXAMINATION IN FORESTRY, — At the recent examination of candidates for the certificates of the Highland and Agricultural Society there were only two in the Forestry Department—Mr. Peter Reid, Waulkmilton, Linlithgow, and Mr. John Wilson, St. Andrew's—and both obtained First-class Certificates.

- MISPLACED CONFIDENCE .- Whilst admitting that some deceit was practised, it is yet difficult to avoid laughing over the consternation of the would-be cultivator of cheap flowers who, caught by an advertisement of "100 kinds of flower seeds for one shilling," invested that sum, and got bit for his pains.
Of course it is not possible to regard such tempting yet impossible offers to the public as other than baits for the unwary and deliberate attempts at deception. Still, not only our complainant, but probably many others, were wanting in ordinary common sense and discretion when they ordered so attractive a shilling's worth, in the full expectation of getting a hundred distinct packets of seed for their money. tiser carefully excluded all reference to packets, mentioning only as a bait a hundred kinds of flower seeds, and his response to purchasers was found to be a most incongruous mixture of flower seeds of perhaps almost a myriad of kinds, all tumbled into one considerable-sized packet, about as useless and perplexing a collection as could well be desired. It really is not possible to avoid a strong sense of merriment when we reflect upon the puzzled aspect of the recipients of this novel shilling's worth, or to help moralising over the little cupidities which now and then, as in such cases as this, manifest themselves in the human family. The vendor no doubt meant to convey to the ignorant public the impression that his hundred kinds were in separate packets, though nothing was said about them. On the other hand, he may have practically fulfilled the bargain made in sending the number of kinds of seed named without rendering himself amenable to legal punishment. It is surprising that there should be found any so silly as to be taken in by such craftiness. It is even more surprising that, having regard to the marvellously cheap rate at which flower seeds are now offered by respectable seedsmen, tradesmen of dubious business morality should receive patronage. Clearly in the case above quoted, if the vendor was a knave, the purchaser was hardly less than a fool.

—— PROPAGATING EUPHORBIA, FICUS, &c.—
Most of those plants that exude gummy or milky
juices are amongst those which are found rather difficult to root from cuttings, if the cuttings have not
been exceptionally treated before being inserted in the
cutting-pan or bed. It has been found by long practice that the rooting process takes effect sooner and
with better results if the viscous juices are allowed to
ooze out—a process that may take from twelve hours
to four weeks, according to the species. As a rule the
cuttings are best taken off just as growth has commenced, and therefore when the juices are rather
abundant, still less so than during full growth. In
the case of species with ligneous structure the cuttings

may be of one, or two, or three years old wood, and should never be less than one year old. These cuttiogs, after being made fit for insertion, should be buried completely head downwards in a pot sufficiently large to contain them without bruising, and then be covered with some moderately moist soil or leaf-mould. They should remain till all sweating-out has ceased, when they should be taken out and washed clean with a soft sponge, when they can be inserted in the usual way. Cuttings so treated will be found to succeed in a shorter time than those not so handled, and there will be fewer losses in the cutting-pans.

- A MAST FOR THE TURIN EXHIBITION .-Our Naples correspondent writes :- "A magnificent mast has been sent from Verona to the Agricultural Department of the Turin Exhibition. The tree grew in the woods of Cadore, and five other majestic Pines had to be hewn down and cut to pieces before the one destined for the mast could be removed. When the lower branches had been cut off, this fine trectrunk was divided into two pieces, the bottom part measuring more than 120 feet, and the top part, still adorned with its green branches, 18 feet. The weight of the tree, after being thus prepared, was 41 cwt. On examining the base it was found that that part was 205 years old; while the summit was only sixty-three years old. The mast was dragged from the forest to the station on two waggons, drawn by eight horses, and the whole of it took up seven railway trucks. Three days were employed in the transport by rail, as the special train could only travel by daylight, proceeded very slowly on account of the curves, and had to stop continually, not being able to pass another train. The mast is slender in comparison to its height, being 65 centimetres at the base and 15 at the summit. The stem preserves an equal width up to the height of about 90 feet, after which it diminishes rapidly. Including the expenses of transport, the mast will cost more than £50 sterling."

—— PLECTRANTHUS FGETIDUS.—In the Palm-house at Kew a fine plant of this handsome Australian Labiate is now in fine flower, and a figure prepared from it will appear shortly in the Botanical Magazine. It makes a very fine pot plant for warm-house decoration; the Kew plant is about 5 feet in height, and each branch is terminated by a densely flowered slightly branched panicle of brilliant blue Salvia-like flowers.

— THE WEATHER,—General remarks on the temperature, rainfall, and duration of bright sunshine, for agricultural and sanitary purposes, during the week ending April 14, issued by the Meteorological Office, 116, Victoria Street, London, S.W.:
—The weather during the first part of this period was very fine and dry, but subsequently it became rather cloudy or dull generally, with a few slight showers of cold rain or hail. The temperature has continued a little above the mean in "Scotland, N.," but elsewhere it has about equalled its normal value or been from 1° to 2° below it. The maxima, which were registered during the first few days of the week, varied from 56° in the "Channel Islands," and 57° in "Scotland, N.," to 64° in the "Midland Counties" and "Ireland, N.," and 66° in "Ireland, S." On the 13th and 14th the thermometer in many parts of Great Britain did not reach 50°. The minima, which were recorded in different ratio in the various districts, ranged from 25° over central northern and northwestern England to 35° in "Scotland, N.," and 41° in the "Channel Islands." The rainfall has been less than the mean in all districts. Bright sunshine percentages show a considerable increase in nearly all places, ranging from 30 in "Scotland, E.," to 53 in "Ireland, N.," and to 69 in the "Channel Islands." To Epperasions observed,—During the earlier days of this period pressure was highest over Scandinavia, and relatively low in the south and southwest. As the week progressed, however, the area of high pressure was transferred to the north-west-ward of our islands, while over Scandinavia and relatively low in the south and southwest. As the week progressed, however, the area of high pressure was transferred to the north-west-ward of our islands, while over Scandinavia and relatively low in the south and southwest. As the week progressed, however, the area of high pressure was transferred to the north-west-ward of our islands, while over Scandinavia and relatively low in the south and southwest. As the week progressed, ho

— GARDENING APPOINTMENTS, — Mr. JAMES MACKAE, late Foreman at Harefield, Cheshire, as Gardener to Viscount MASSEREENE AND FERRARD, Oriel Temple, Co. Louth, Ireland, — Mr. J. VICKERY, formerly Gardener at Potter's Park, Shenley, Hetts, as Gardener to WILDMAN CATTLEY, Esq., Oak Dene, Holmwood, Surrey.

CLIVIAS.

In few plants has a greater advance been made Truly it was a noble than with the Clivias. Truly it was a noble subject to begin with, but our gardeners, or some of them, have done their best to aid its development. In the first place we must explain why we 'adopt the name Clivia in preference to that of Imantophylium or Imatophyllum. The only difference that we are aware of between the two so-called genera resides in the fact that in the original Clivia, of which C. nobilis is the type (and which was called Imantophyllum Aitoni by Sir W. HOOKER), the flowers are pendulous, and rather more open at the throat, while in Imantophyllum proper they are erect, as in Vallota, of which also they have the form, but from which they differ in their succulent, not capsular, fruit. Botanists, therefore, have generally adopted Clivia as the geous, and this course is followed in BENTHAM and HOOKER'S Genera Plantarum, to the ruling of which work we hold ourselves bound to adhere, unless we can supply valid reason to the contrary. Moreover, on the Continent, whence, till lately, we have derived our finest specimens, the plants are usually called Clivias, As, therefore, for various reasons, Clivia is the preferable name, we trust it may be adopted here. Its shortness should give it the preference over the longer name. Clivia miniata was first described, and in these columns, by the late Dr. LIND-LEY as Vallota? miniata. (See Gardeners' Chronicle, 1845, p. 119.) The plant was shown by Messrs. at one of the meetings of the Horticultural Society, who obtained a Banksian Medal for it. Messrs. BACKHOUSE, of York, however, were the first to introduce the plant from Caffraria. At that time the flowers were described as smaller than those of Vallota purpurea, and of a "clear delicate brilliant vermilion colour, passing into indian-yellow in their lower half." So showy a plant was sure to become popular with gardeners, the more so as its cultivation is simple; but it is only comparatively recently that attention has been paid to the raising of varieties, and more especially in Germany and in Belgium, Those who visited the last Ghent Quinquennial noted as among the greatest differences between the exhibition on that occasion, as compared with its predecessor, the great development of these Clivias. Some of our English gardeners, we are glad to see, are turning their attention in this direction, and among them Mr. DAVIDSON, of the gardens, Iwerne Minster, who sends us two fine trusses from seedlings grown by himself from native seed, one of which is particularly good. The first of the two-that nearest to the type of the species -has a truss or simple umbel of about a dozen flowers, the flower-stalks 2 inches long, flattened. The flowers measure 4 inches across, and in place of being funnel-shaped are markedly trumpet-shaped. outer segments rather narrower and more pointed than the inner, but all of good texture, and of a rich orangesalmon colour, with the throat yellow. The stamens are of equal length, shorter than the segments, and all spring at the same level from the short tube. The style is longer than the stamens, and declinate. second variety, though it has smaller flowers, is really superb. The truss consists of about a dozen flowers, with subangular or compressed stalks, each about 1 inch long. The flowers themselves do not much exceed 3 ioches across, and are of a bright orangesalmon colour, with a yellow tube. What especially characterises this noble variety is the outward curva-ture or rolling back of both the outer and the inner segments, their regularity and substance, and the breadth of the inner segments. Owing to the recurving of the flower segments, the clear yellow tube is shown to great advantage.

Mr. Davidson writes:—The enclosed trusses of Clivia blooms are from plants raised from seeds gathered by Colonel Tufnell in South Africa. The seeds, seven in number, all germinated freely in heat under a bell-glass; and when the plants were big enough to handle they were potted off in small pots, in three parts of peat and one-third of loam, placed near the glass in a temperature of from 60° to 70°, where they soon made strong plants fit to transfer into 6 inch pots, this time in equal parts of loam and peat, adding each time a little sand and small pieces of charcoal. The final shift was into 10-inch pots. When the pots are full of roots we water about twice a week with Standen's manure or guano-water. Excepting when in a very young state they only require cool greenhouse treatment. I have found them invaluable for conservatory and house decoration. P. Davidson, The Gardens, fewerne Minster, Shaftesbury.

Çhe Kosery.

MARÉCHAL NIEL ROSE.-How often has one been asked the question, "If you were only to grow one Rose which would it be?"—a question which seems always to me on a par with that of the bashful young man once described by Mr. Punch, who in striving to get up a conversation with his partner asked her if her brother liked cheese, and on being told that she had no brother, nothing daunted, again asked, "If you had a brother, do you think he would like cheese?"-for I cannot imagine that if any one could grow one Rose he would be contented with that. The reply very often is made—"Oh, of course Gloire de Dijon," as if it were the most popular Rose; but I think the palm of popularity must be given to the Rose about which I now want to say something— Maréchal Niel, a Rose in which I have somewhat of a personal interest, for how vividly do I call to mind the morning when at my hotel in Paris M. Eugène Verdier brought me some of his new Roses to see. and when, after showing me some reds and crimsons which have long since faded from memory and from nurserymen's catalogues, he brought out from the bottom of his box a golden goblet which he said he was going to send out under the name of Maréchal Niel; how I gazed in astonished rapture at its heauty, and could not help exclaiming, "That Rose, if you manage properly, will make your fortune." He did not manage properly, but sent it out as a bribe to those who would take his other lot; but it has been a mine of wealth to the Rose nurserymen ever since. Whatever other Roses may be left on hand Maréchal Niel never is. Tens of thousands of it are raised every year, and are exhibited all over the world. Go into the central avenue at Covent Garden, and you are sure to find it in abundance, ever meeting with a ready sale, and ever attracting the passers-by by its rich golden-yellow flowers; and yet there are mysteries connected with it which we can hardly You are told that after a few years it perishes, and hence consequently the demand for it; that it is not an out-of-doors Rose, and that it will not withstand the vicissitudes of our climate; that some winters kill it, or that it smells unhealthily at the junction with the scion; that canker supervenes, and the Rose languishes and dies.

That it is not an out-of-doors Rose in one respect at least I am quite willing to grant-nay, have always insisted upon; it has, as all who know it (and who does not?), one great defect—the foot-stalk is not stout enough to bear its massive blooms, and consequently it always hangs its head down; thereby the outer petals become damaged by weather, and looking at it from a distance it seems as if the tree were covered with decaying flowers; but go to it, gather one of its blooms, and you will see that when held up or placed in a vase this only extends to two or three petals, and that the rest of the flower has benefited by its very defect, for probably had it held its head upright it would have received so much moisture in its ample folds that it would have become soddened and never opened; nevertheless, as an object of beauty it is not in this position to be compared with such a Rose as Rêve d'Or or Belle Lyonnaise, but that it will stand our climate and not succumb to our severest winters I have ample evidence close by in this county (Kent). There is in the adjoining parish to this a row of cottages which face the south, and on these the Maréchal, which has been introduced from a neighbouring man sion, flourishes à merveille. There is one tree of it which I have seen every year for the last thirteen or fourteen years; during that time it has had to endure the severe winters of 1880 and 1881, which destroyed thousands and tens of thousands of Roses throughout the country, and yet it is as vigorous and full of bloom These trees are worked on standard Briers, as ever. and quite cover the walls of the houses. Contrary, too, to all that we are told about not pruning Noisettes, they are pruned sharply every year, and if not actually cut with a pair of shears, as Mr. Wolley Dod suggests, they are cut as hard as Gooseberry bushes are, and yet they bloom, as I have said, pro fusely. On the other hand, there is one on a neighbour's house, which has much of the same position, which did well for a couple of years, but ever since has been so subjected to mildew that it is quite useless, and rarely produces a bloom worth looking at. It would thus seem that there is a capriciousness

about it, which is very puzzling in an out-of-doors plant. [We find it useless on a cold clay soil, even against a wall. Ed.]

The true position for it is doubtless planted out in a conservatory, where it can be trained overhead, and its golden cups hang down to be looked at in all their beauty and purity, and yet here it too often displays the same capriciousness. About nine or ten years since I gave a plant of it to a neighbour who planted it in a conservatory at the back (it was on a standard Brier). the house being about 16 feet wide; it grew most rapidly, covered the back wall, and then the entire roof, from whence hundreds of blooms hung in great profusion and beauty; and so it went on for some years. Two years ago it began to show symptoms of goutiness at the junction, and last year it entirely perished. I know, on the other hand, trees which have lived in the same conditions for a much longer time, but I believe the general testimony concerning it is that is not a long-lived Rose; and that they who wish to continue to grow it should be prepared, after a few years, with a young plant, which may take the place of the old favourite when it begins to decay.

For the encouragement of those whose space is limited I would like to say that at the back of my small annexe to my greenhouse, where I grow a vine, I planted two years ago in a large pot a plant of this Rose, and another in the same way in a small house where I bloom my Pansies in pots, and these have grown very well, have pushed their roots through into the soil, and have this, their third year, fully fifty or sixty blooms on them; they do not interfere with the Vine, for before that begins to grow their blooming time is over, and the wood gets sufficiently ripened during the summer to enable it to throw out good shoots for the following year. The soil in the pots is renewed each year by a thorough good top-dressing of loam and manure as far down as one can get without much disturbing the roots.

I have said that Marechal Niel is the most popular Rose grown, and so I think it is; perhaps Niphetos runs it very close, and being a white flower is in much request; but, withal, I think ninety-nine persons out of ahundred would prefer the Maréchal. It is well known that many have built houses on purpose to grow them in, and in two or three years have paid for the bonse by the sale of blooms; these golden days are gone for People say that these Tea Roses are not so popular as they once were, but this is not so; the fact is that the thing has been overdone, and by the inevitable laws of supply and demand, the former being in excess of the latter, prices have gone down; as many are sold, but they do not now fetch one fourth of the price they did some years ago-the admiration is as great as ever, but there are more means of gratifying it.

I cannot conclude this brief record of the Maréchal without telling a story I heard the other day concerning two brothers whose names are as well known in Rose world for their love of the flower, as in their native town for their benevolence and largeness of heart. They were driving out together one day in the neighbourhood of M ----, when one of them caught sight of a Maréchal on a small cottage, the horse was pulled up and one brother went in to look; when he came out he was met with "Why, what an unconscionable time you have been in?" "I never saw conscionable time you have been in? such a sight in my life," was the reply. "Gave the woman half-a-crown." This excited the brother's curiosity; he too went in, he lingered and when he came out was met by the same remark. "Ah! well, was the reply, "never did see such a sight. Gave the woman another half-a-crown." Thus dnes Maréchal win favour, not only from the fashionable frequenters of balls, &c., but from every true lover of beauty and fragrance, that he is ever likely to be dis-placed from his high position is exceedingly unlikely: it has but one fault, and I do not fancy we are likely to get a Rose equal to him in other respects and more such than he is: he is as yet facile princeps, Wild

CONVOLVULUS CNEORUM.—Of all the numerous wall plants now in bloom at Kew, the subject of this note is one of the most beautiful. A native of the south of Europe, it succeeds well io sheltered spots in the open air in this country, and only succumbs during exceptionally severe winters. The persistent lancolate foliage, clothed with silvery hairs, and the terminal bunches of large whitish flowers, facely produced during the spring months, combine to form a charming effect; and as cuttings root freely it is always worth while to put in a few each autumn in a cold frame, so as to guard against the risk of losing so charming a shrub.

A FLORAL REGISTER.

THE following register of spring-flowering plants, showing the dates of flowering at the Royal Botanic Garden, Edinburgh, during 1883 and 1884, has been obligiogly sent to us by the Secretary of the Edinburgh Botanical Society:—

	1883. oril 8	1884.
	oril 8	
		March 26
2. Arabis albida Fe	b. 19	Jan. 23
3. Aubrietia grandiflora Fe	b. 15	Feb. 10
4. Bulbocodium vernum Fe	b. 6	Jan. 26
5. Corydalis solida M:	arch 30	March 13
6. Corylus avellana Ja.	n. 26	Jan. 14
7. Crocus susianus Fe	вb. 9	Jan. 19
8. ,, vernus Fe	b. 17	Jan. 28
9. Daphne Mezereum Fe	b. 10	Jan. 2n
10. Dondia epipactis Fe	b. 6	Dec. 29 (1883)
rr. Draba aizoides M	arch 12	Feb, 12
12. Eranthis byemalis Ja	n, 27	Jao. 22
-317 taroniant - 110 tand tand	arch 24	March 12
14. Fritillaria imperialis Ag	pril 9	,
15. Galanthus nivalis Ja		Jan. 19
" "	b. 6	Jan. 26
17. Hyoscyamus scopolia Ap	pril 3	March 20
	arch 2	Feb. 28
19. Leucojum vernum Fe	b. 4	Jan. 26
20. Mandragora officinalis Fe	b. 20	Feb. 9
21. Narcissus pseudo-Narcissus Ap	prit 2	March 18
	arch 12	Feb. 28
23. Nordmaoniz cordifoliz Fe	b. 20	Feb. 15
24. Omphalodes verna		
25. Orobus vernus M	arch 30	Feb. 9
		Jan. ro
27. ,, Nobleanum Fe	b. 22	Feb. 2
28. Ribes sanguineum M.	arch 28	Feb. 20
29. Scilla bifolia Fe	eb. 20	Feb. 14
30. ,, ,, alba M	arch 3	Feb. 21
31. ,, præcox Fe	, ,	Jan. 20
3 ,,	eb. 16	Jan. 30
33. ,, taurice M	arcb 3	Fcb. 24
34. Sisyrinchium grandiflorum Fe		Feb. 14
35. ,. ,, album , Fe	b. 22	Feb. 12
3	pril ro	Feb. 15
37. Symplocarpus foetidus Fe		
38. Tussil2go alba Fe	ъ. 6	
39. ,, fragrans Ja		Dec. 26 (1883)
40. ,, nivea Ap	pril 1	Feb. 14

ORCHIDS AT LAURIE PARK.

WHILE not pretending to rank with the first collections in the country, that contained in the well-kept little span-roofed houses here frequently furnishes rare and beautifully-flowered specimens, of which even the most ambitious cultivator might be proud, while at all times an abundance of bloom is given in each department by healthy well-grown plants of more than average merit. Mr. Sillem has been an Orchidgrower for many years, and the interest which he has taken in his plants is plainly to be seen in many of the oldest inhabitants of his Orchid-houses, among many other evidences on this point being a remarkably fine mass of the beautiful scarlet Sophronitis grandiflora, with seventeen blooms, which has been grown from a small scrap obtained nearly twenty years ago. It is needless perhaps to say that the plant was always grown cool and moist, although years ago it was most likely the only representative of its species so treated. It would be interesting to know how many importations this plant has seen killed by heat while it has been growing into its present robust beauty in the more congenial cool temperature. The Odontoglossum-house is a well arrayed mass of bloom, the mingled spikes of the numerous well-flowered Odontoglossum Pescatorei, O. Alexandræ, O. Andersonianum, O. phans, O. Halli, O. luteo-purpureum varieties), O. cordatum, many varieties of Masdevallias, &c., making the whole house look like the Orchid display at one of our leading flower shows. In this cold house, too, the large pans of Disa grandiflora are very healthy, and showing well for bloom; the Dendrobium Jamesianum are vigorous, short and stout bulbed, and a large pan of the fleshyleaved Nanodes Medusæ suspended overhead, gives

another instance of what careful treatment, extending over a number of years, can do with a slow growing and reputedly capricious plant. The Cattleya and Lælia house is now spare of bloom, but the good appearance of the plants more than promises that each section will be well represented in its season. Some of the difficult things are grown to perfection, viz., C. Acklandiæ, C. Regnelli, C. superba (this flowers twice every year), and the different varieties of Pleione which are grown in shallow pans suspended near the glass. Coelogynes, Cymbidium eburoeum, &c., and many showy plants of Anthurium Scherzerianium, make that bright appearance in the house, without which no Orchid grower is content-each house must have a show of bloom. The several intermediatehouses are enriched by a plenteous display of most of those thiogs which flower at this season, noteworthy being some grand Dendrobium crassinode, D. Wardianum, D. thyrsiflorum, D. superbum, the pretty D. triadenium; Masdevallias of the M. chimæra section, Cattleya citrina, Colax jugosus, Oncidium Marshallianum, and many Cypripediums, which are well cultivated here, among them being one of the finest forms of that noble C. Lawrenceana in existence, both as regards size and beauty of the leaves and flowers, and a very good example of C. caudatum.

The Barkerias are well grown here without trouble or losses by growing them on rafts with only a little sphagnum to hold the moisture, and by keeping them continually moist. They are suspended on the light side of a cool, rather dry intermediate-house. Leaning to



Fig. 104 -PHAIUS TUBERCULOSUS

the houses is a very pretty adjunct in the form of a case about 25 feet in length and 5 feet in width, containing a very fine collection of grand specimens of Filmy Ferns—Todea superba, T. Fraseri, T. pellucida, &c., and many varieties of Trichomanes and Hymenophyllum, and all beautifully clean and verdant. The case is provided with a hot-water pipe to use in the event of hard frost, but artificial heat is found to be more harm than good. The Phalænopsis-house, although containing the object of our visit, comes last. It is a span house, which was formerly what is called "close," but as it is glazed with large squares Mr. Billiald got over the difficulty by passing strips of thick sheet lead between the laps, and in consequence it is now well ventilated, and the Phalænopsis, Aërides, &c., which occupy it are in fine order, notwithstanding that the temperature is what many would consider cool and airy for such plants.

Here, too, is the subject of our illustration (fig. 104), Phains tuberculosus, which Mr. Sillen's gardener, Mr. Billiald, has succeeded in growing so well and flowering so freely that several Orchidgrowers have expressed a desire to know the conditions under which his plants were brought to such perfection, while theirs have dwindled away. P. tuberculosus was collected in Madagascar by the Brothers Humblot, and introduced, together with the equally beautiful P. Humblotti and P. Henryi, by Messrs. F, Sander & Co., of St. Albans. In 1881 Sir Trevor Lawrence flowered it, and obtained a First-class Certificate for it in March of that year. Since that time the best efforts of most of the growers

have been defeated by the plant, Mr. Billiald alone having continued success and progress with it. year again all his plants flowered, one of them (a very grand variety) having eleven flowers on two spikes. His plants are in a shady corner of the Phalæ-nopsis-house (temperature 65°-70°), where they get plenty of air, but no cold current. They are kept moist all the year round, and, what is considered as important, they are generally sponged over once a week, as that has been found to be the only means of keeping off the thrips which seem so fond of this plant. The manner in which the plants are potted is peculiar, and it may supply a clue to others by means of which they may get better success in future. The pots (which must be amply large) are filled two-thirds with crocks and charcoal, a layer of peat is placed on this, then the plant is held in position and filled round with living sphagnum moss. When so fixed the plant is in precisely the same condition as would be if growing on the surface of a bog, and it is would be it growing on the surface of a log, and it is prohable that that is its natural position. So potted, it may receive coplous waterings with rain-water and never get sodden. The chief points to be observed after the plants are so potted, are to keep them shady and always moist, and to sponge them frequently, and keep them in a warm but not close place. There is great variety in the plant—sepals and petals white, lip crimson, rose, and yellow in different shades. shades.

A CHAT ABOUT CEYLON FRUITS.

MANY, and widely spread over the length and breadth of Ceylon, as are its indigenous, its introduced and acclimatised fruits-highly salutary, too, as they are acknowledged to be in the dietary, both of the European and the native inhabitants-it is remarkable that, owing to an almost total neglect of culture, even of the roughest kind, how poor in size and coarse in quality they are mostly found to be, and how very badly they compare with the same fruits grown in other tropical latitudes even less favourable to their habits and idiosyncracies. The Pine-apple of Ceylon, except we can manage to secure it from the botanical gardens near Kandy, or from some experienced cultivator, is as a rule a hard, skinny, tough, and sour production, vastly below that same Ananas of the West Indies, the Bahamas, the "White Man's Grave," in Africa, and other places we have visited.
The very "first chop" Mango, which the Low country Cinghalese or the Kandyan grower will bring to market, is, in one word, trash, as compared to the large yellow fleshy Bombay fruit overflowing with luscious juice, or even with the smaller but equally delectable "No. 11" of Jamaica, and when you find a Ceylon Mango quite free from stringy fibre and without the smell and the taste of turpentine more or less strong, make a gustatory note of it-it is a rara avis of its At Jaffira, in the Northern Province of the island we are dealing with, and there only from the garden of the late Mr. Dyke—an expert in horticul-ture—have we ever tasted Mangoes worthy of the name. The Pummelow, or Shaddock (Citrus decumana), that cannon-ball sort of an orange which nowa-days we so frequently see in the windows of our fruiterers' shops, when grown in the West Indies is a tender fleshy fruit, a regular bonne bouche, overrunning with an abundant sub-acid refreshing juice, delicious to revel in when fevered. But if we happen to meet this same Brobdingnagian Orange in Colombo, Kandy, Trincomalee, or elsewhere in Serendib (the old name for Ceylon) -and meet it we are sure to do, for it is common enough-cave, for ninety-nine times out of every hundred it is a cannon-ball outside and a cannon-ball within, the pulp contained in its closely packed tough, leathery sections, being hard, bltter, and as dry as a bone. And apropos of the Orange itself, how seldom does the thirsty traveller get one as succulent, sweet, and refreshing as those grown in other of their well-known habitats, even though he, the traveller, tramp all over the island for the cooling fruit. The Ceylon Orange tree is a deception and a It blossoms as sweetly, it bears as freely, its product is as enticing to the eye as any of its species anywhere, but barriog the Mandarin, and one other variety, which now and again, literally and metaphorically, crop up, the ordinary native-grown fruit is an Orange by name only—vox et praterea nihil. Better to call it the "sweet Lime," and by which appellation indeed it is sometimes known.

Alas I that in our chat anent the fruits of "the spicy isle," where, according to Bishop Heber, "man

alone is vile," we should still continue to disparage, but io truth the Tamarind and the Lime, the Guav -that emperor of fruits, for its toothsome jelly, and "dolce" of the West Indies-the Cashew (Anacardium occidentale), who does not know the kernel of its roasted nut as an after-dinner wine flavourer? The Papaw (Carica papaya) and the Plantain-we are enumerating the commoner fruits found in almost every native's garden-are very much below par with those same flourishing wild around the hut of any West Indian or African negro.

Space is wanting for our specifying in what particular characteristics the differences between the fruits we have alluded to exist, but, nevertheless, our statement may be accepted as fact—"'Tis true, 'tis pity, and pity 'tis 'tis true."

And now, if we take a very rapid glance at two or three of the fruits which are less common, and upon which some horticultural pains have been bestowed, or they would not be there at all, we shall yet see that these, too, fall far short of the every-day quality of their kinds in other lands. The Avocado Pear (Persea gratissima), the Subaltern's Butter of the West, is here in the East a smaller, harder, less buttery, thicker-skinged, and more stony production. The Custard Apple (Anona reticulata) is the worst of its kind we have ever eaten or tried to eat in "all our walks abroad." The Anona squamosa (Sweetsop) and the A. muricata (Soursop) are wretched, sapless, "cottony" imitations of their saccharine and inifrateroity in Jamaica. And as for the Grenadilla (Passiflora quadrangularis)—I had a vine of the plant growing in the compound (yard) of my quarters in a certain up-country station; I treated the sparse but yet white jelly-like contents of the soft green capsules as systematically as I had seen them treated and enjoyed them in other tropical climates, but I could never get rid of a sort of uncanny twang-spice, wine, and sugar the stuff as much as I pleased.

From the remarks I have made it can be quite understood that a dessert table in Ceylon spread with its fruits, decorated with its brilliant many-hued flowers, and adorned artistically with leaves and the ivory-like spray blossoms of the Cocoa-out Palm, which latter the Cinghalese or Jamil never omits to use liberally, is, indeed, an attractive picture to look upon—very I but it is eye-taking to the guests, and that only, for save and except certain dainty dishes of fruits, to be spoken about, be included, the whole collection, from the aristocratic Pine to the plebeian Plaiotain, will be left untouched. And why this? Because, as we said at starting, even the most rude, haphazard cultivation has been pertinaciously neglected. The tree once planted must take care of itself, to hear, or not to bear, as Heaven chooses. And this laissez-aller sort of unconcern is somewhat remarkable too-at least, among the natives, who are Buddhists in religion, for their sacred books tell them, and Gotama Bhudda, their high-priest in Ceylon, encouraged them to plant fruit trees in bighways and byeways for the use of all itinerants—to plant unquestionably, say they—but never a word of tending they

Just now we wrote that if certain fruits happen to lie upon the dessert-table they were sure to find favour in the mouths of the epicurean guests. Primus ante et inter omnes will be the Mangosteen, that most delectable of all Eastern fruits, and which Sir Emerson Tennant lauds as in delicacy resembling "perfumed snow," Be certain if host or hostess has got for love or money Mangosteens they will be pounced upon and devoured. Some of our readers may not know this, the alpha of fructaceous edibles. It is the fruit of the Garcinia mangostana, natural order Guttiferæ, a native of Java, the Straits of Malacca, and the whole archipelago thereabouts, but introduced and cultivated sparselyalas I sparsely,-in Ceylon. It is about the size of a small Orange, purplish-black in colour when quite ripe—if any one has seen the Star Apple, Chryso-phyllum Cainito of the West Indies he may form a very good idea of its appearance-and three-celled, each cell containing a seed thickly enveloped with a pure white pulp of exquisite odour, and a taste entirely its own. We have eaten a vast number of the fruits of the tropics and know not one which at all resembles it. Some say the Sapodilla-credat Judaus.

Another fruit which treads closely upon the heels of the Mangosteen is the Rambutan (Nephelium Lappaceum), of the Sapindaceæ or Soapwort tribe. about the size of a large Date, oblong or roundish in shape, grows in thick clusters on the tree, and consists of a seed stone, covered with a white pulpy substance within a fibro-elastic capsule, reddish-brown in colour, and from which many soft, long spiculæ or points spring. When this indiarubber-like capsule is bitten through, the seed has a great tendency to be forcibly ejected, and we have seen it thus catapulted into a neighbour's face.

If the eater can get over the highly offensive civetlike smell of the Durian (Durio zibethinus, nat. order Sterculiacese)-but it requires much nerve to do so-there is hardly a greater treat in Ceyloo than this The real Durian is not indigenous to island; it comes from the same localities as the Mangosteen, and was introduced by the Portuguese in the sixteenth century, but it has another and more odoriferous brother, the Sterculia feetida, to which the name of Cinghalese Durian has been applied. And now that we think of it, the Mangosteen has a very near relation in the Goorka, found wild in the juogles, uneatable save by the not-over-particular The despised and rejected by Europeans, Jak (Artocarpus integrifolia) is by no means as bad as it is made to be, bar again the effluvium of its ripe and freshly cut fruit, which is the largest of all the edible ones in the world, and is made up of an infinity of stones, around each of which is a toughish, straw-coloured substance, sweet almost to mawkish ness, and overflowing with juice. The Eastern substitute for roasted Chestouts are its seeds aforesaid.

Lastly, one little word of chat about the Cocoanut, not as we know it in this country, but as we gather it-young, unripe, from its Palm in one of the thick belts by the sea, where it flourishes so luxuriantly—nowhere better than in Ceylon. white, soft, gelatinous pulp scraped gently with a spoon from the yet unsolidified inner lining of the shell and mixed with the sweet, turbid, and cool " milk " is as nectar, and not so intoxicating. Old wives say that it is unwholesome-ne crede Teucros.

Home Correspondence.

Daffodil Names. - About four years ago I had my say on this question, and as the subject seems to have got into good hands, perhaps it is superfluous to say more. I proposed, however, to limit fancy Daffodil names to four letters, and pointed out that it would be easy to find a thousand such combinations which would be easily written, easily pronounced, distinct, and distinguishable, and there would then be no excuse for not writing them legibly on the labels, As for retaining Haworth's names, we must first know to what they were applied by him, for some of them are now applied to varieties very far from answering to Haworth's description. Besides, there are many undoubtedly natural varieties which Haworth probably never saw, and certainly never described, which would have an equal right to claim classical names.
As an instance of the divergence of Haworth's descriptions from the modern appplication of his names, he describes N. nanus as having leaves half an inch wide (" folia semiuociam lata "); which of us can identify this? C. Wolley Dod, Llandudno,

The Balsam Poplar .- Why is it that this tree is ot more planted in and around gardens? The fragrance of the opening bud is very agreeable, and during the evening or morning is perceptible a long way off. It is a good grower, preferring a rather moist situation, and comes into leaf quite a month before most of the species, thus making a good shelter tree, and as the foliage lasts well in the autumn and changes to a bright yellow it is also useful in the landscape, the tree is a much neater grower than most of its kind, and is in every way a desirable object near walks and boundary fences. We grow it here, and the other evening just before rain I remarked that its balsamic fragrance scented the whole garden. 7. Rust, Eridge

lensen on the Disinfection of Seed Potatos —In the communication upon this subject at p. 446 I was rather ambiguous in my statements as to the necessary temperature. It must be borne in mind that the object to be attained is to raise the temperature of the tubers, not only upon their surface, but also for some distance towards their interior. For also for some distance towards their interior. For this purpose a rather higher temperature is required than would be understood from my communication. The tubers must for not less than four hours have a temperature not below 104° F., and if this rises to 115 F. no harm will be done to them. If the cylinders are 5 inches across it will be found even with narrow vessels that a thermometer placed in the middle of the tubers a few inches below the uppermost layer, will take a considerable time to rise to 104°, even if the water placed outside the vessels has a temperature of 110° to 130°, beyond which point it is not safe to go. Respecting the experiments to be made with disinfected seed-tubers Mr. Jensen has, during the coming season, made arrangements with experimenters lo several European countries, including Denmark, Germany, Norway, France, &c. In Denmark alone more than a hundred experiments will conducted, so that we shall be in a position to judge of the value of this process from pretty extensive data. In this country we are not, as a nation, fond of experimental investigation; we have many excellent critics amongst us, but experimentally we are slow to move, and somewhat hard to convince that anything new can be true in mycology, at any rate we have a wholesome dread of new-langled notions concerning the life-history of parasitic fungi. Charles B. Plowright, 7, King Street, King's Lynn, April 9.

Mignonette in Pots (Single Plants).—Havirg been remarkably successful with Mignonette during the past twelve months, and knowing how many there are who are anxious to cultivate it well, I send you a note of the mode of treatment I adopted. In the last week in April, 1833, I made a sowing of Miles' Pyramidal, and when the plants were strong enough I potted them io 60-size pots, and afterwards shifted them ioto 48's, in which pots they made compact little bushes after being stopped or pinched back three times. They flowered in June, and lasted until the end of July. When going out of bloom I cut them back, and potted them into 24-size pots the first them back, and potted them into 24-size potenthe first week in August. They again started into growth, and flowered throughout October and November, averaging thirty spikes of bloom each. In the begio-ning of December I again cut the plants back, and potted them on into 16-sized with the same good results, for in March, 1884, they again bloomed with results, for in March, 1834, they again bloomed with about sixty bloom-spikes each, and they are now, and are likely to be for some time, beautiful bushes, averaging 18 inches across. The former mode of proceeding 1 shall continue to repeat, in order to see how long it will answer. The plants were always grown in an ordinary cold greenhouse, and at each potting I used turfy loam and leaf-mould mixed with a little Clay's Fertiliser. To the use of this excellent manure I attitute in a great measure my success. manure I attribute in a great measure my success. Its beneficial effects are wonderful on all plants, and It have never yet used it on a plant, either mixed with the soil used in potting, or afterwards for top-dressing, which did not at once show how well it liked it. The action of Clay's Fertiliser on plants is natural and auton or Clay's Fertiliser on plants is natural and lasting, and oot spasmodic and quickly passing away, as with volatile manures. I shall be glad to know if any of your correspondents have had any such experience with Migoonette as a perential and almost perpetual blooming plant. F. King, The Gardens, Kenton Grange.

Hova carnosa. - About seven years since I had a specimen plant of Hoya in the stove near a blank wall on the east side. The young shoots, instead of heing trained in the wire trellis, took hold of the wall, and I found had sent out roots in the cemented surface of the wall. They were allowed to grow. After a time we required to move the plant, and I cut one of the shoots, to see if it would stop its growth. As I found it made not the slightest difference I severed all the shoots and removed the old plant. severed all the see a flourishing Hoya covering a wall to feet by 18 feet without soil or pot. It is very healthy, and blooms well every year. T. Hughes, Wyehdon Lodge, near Stafford.

Roses out of Season .- Some of your readers may be interested to know that I gathered on the morning of April II (Good Friday) a bud from a Gloire de Dijon Rose-arch, and that I also saw a bud already showing crimson on a Charles Lelevre trained upon a south wall. Surely these are much earlier than usual. Leirion, Ealing, W.

Preparing Plants for Winter Forcing: Moss v. Soil.—During the last few years we have treated the plants lifted for forcing in a manner that we think is not usually followed, and the results bave been far superior to those obtained by the old method. Instead of potting the evergreen and deciduous plants which on potting the evergence and declared plants when. We lift them from the open with a large ball, so as to cut the rootlets as little as possible; then with a special tool in the shape of a curved table-fork we remove all unnecessary soil, but take great care not to hurt the unnecessary soil, but take great care not to hurt the roots. In this manner we reduce the ball to a reasonable size. Before mossing, if the ball is at all dry, we plunge it and leave it for five or six hours in water. The plants must not merely be plunged for a few miontes and then be taken away; this is a bad practice, as the water could not in such a short time go thoroughly through the balls, and the result might not be up to expectations. The ball being thus pre-pared it must next be carefully mossed and tied round

I fear that is a query very difficult to answer, simply

with thin galvanised wire that can be as easily worked as string. If during the process of forcing a ball is noticed as getting dry it will be necessary to plunge it again in water for a few hours. It is essential to have in the forcing-house itself a tub or tank of some sort or other full of water, which will adurally be of the same temperature as that of the house itself. However, this is seldom necessary, as the frequent syringing required to induce the buds to open is, as a rule, onlie sufficient to keep the balls moist. When syringing required to induce the bods to open in as a rule, quite sufficient to keep the balls moist. When the plant has done flowering the moss is taken away, and the plant can be put in the same place it occupied before being forced. If care is taken to plant with good sound soil and not to touch the roots the plant good sound soil and not to touch the roots the plant will recover, and grow sooner and quicker than if it had been potted. With this mossing system smaller balls are easily obtained, and this renders the plants more movable for use in furnishing rooms or houses, and also for cutting flowers from. There is no doubt great economy in this method, as the moss costs very little, if anything at all, while pots cost much and are easily broken. The best moss for this work is that gathered on our lawns with a rake. We get a lot in a short time, and at the same time clean the lawns. It is easily understood that success is greater in working as described than in the potting system. In potting plants you cannot avoid cutting roots to reduce the balls to an ordinary size. It seems also as it the moss afforded some kind of nourishment to the plants. We often notice when we take the moss away that the roots have grown in it, and look plants. We often notice when we take the moss away that the roots have grown in it, and look plump and healthy. We have proceeded in this way with Rhododendrous, Azalea indica and mollis, Hoteia japonica, Deutzia gracilis, &c. This year we have been able to compare both systems with Rhododendrons. Those potted gave less flowers than those mossed, and the latter did not drop a single bud. Ernest Bergman, Ferrières.

Stimulants for Chrysanthemums .- Last year I Stimulants for Chrysanthemums.—Last year I was induced to try an experiment in Chrysanthemum growing, and for this purpose I purchased I lb. of sulphate of ammonia, which I bottled and corked up, as the ammonia evaporates very rapidly. I then selected four plants from my collection, and put them by themselves, and gave them a teaspoonful of ammonia in a gallon of water twice a week. In a fortnight's time the result was most striking, for although I was a support to the contract of the cont night's time the result was most striking, for although I watered the others with liquid cow-manure they looked lean when compared with the ammonia-watered plants, whose leaves turned to a very dark green which they carried to the edge of the pots until the flowers were cut. As a matter of course the flowers were splendid. The ammonia which I used is rather expensive, as I bought mine from a chemist's shop; this year I intend getting agricultural ammonia, which is much cheaper. I have also tried it on Strawberries, with the same satisfactory result, the crop being nearly double that of satisfactory result, the crop being nearly double that of satisfactory result, the trop pening fearly advanced in the others; it is very powerful and requires to be used with caution. I would suggest that others would give it a trial, and don't forget the corking business to stop evaporation. I have never heard of sulphate of amevaporation. evaporation. I have never near or surpluse or ammonia used in this concentrated form, so I think the idea is quite original. A. McMillan, The Gardens, Oakley Park, Norfolk. [By no means original. It has been used for years by some of our readers, and with the best results in careful hands. Ed.]

Myosotis dissitiflora alba,—We have in the York Nurseries the blue and white striped form of the above. It has originated here, being a seedling of M. dissitiflora alba sown last autumn. It is yery the above. It has originated here, being a seedling of M. dissitifora alba sown last autumn. It is very pleasing, and is, I consider, worthy of propagation. R. Potter.

Nectarine Brugnon.—Your correspondent "X.," Gardeners' Chronicle, p. 423, March 29, asked a question as to the first use in England of the word Nectarine and Brugnon in France, when, where, and by whom? I looked anxiously in last week's issue for replies to his query, wishing for information on the subject, but was disappointed at the non-response. I had taken some little trouble to try and answer the question myself, but failed to do so satisfactorily. Howsubject, but was disappointed at the non-response. I had taken some little trouble to try and answer the question myself, but failed to do so satisfactorily. However, in my research I obtained some facts which may be interesting to your correspondent, and perhaps assist him. The Nectarine, which is a most delicious fruit, obtained its name from being compared to nectar (the supposed drink of the gods), but upon whose authority, or by whom, I have failed to ascertain. Pliny (Pliny, lib. xw., cap. 11, 262) calls the Peach the Persian Apple, and in the next chapter describes the variety "duracinus," which is to carry off the plam as the best variety; this is supposed to be our Nectarine, from the firmness of its flesh as compared with the Peach. Martyn, in his notes upon a passage in one of the ecloques of Virgil's Bucolies (Martyn's English translation and notes upon Virgil's Buc. Eccl., 11, 51), questions this quotation of Pliny's, and doubts whether Peaches or Apricots are mean; ignoring Nectatines altogether, but certainly his further argument tends to strengthen the fact that Nectarines were the "duracinus" of Pliny, and not Apricots, as he would, at first, imply.

In a further chapter (lib. xv., cap. 13) Pliny describes the Peach as having been introduced from describes the Peach as having been introduced from Persia into Egypt, thence of late years, with considerable difficulty, into Italy. Our own Certard (Gerard's Left-bad, Johnson's ed., 1633) says.—"Mr. Mullen, Old Street, hath also of that kind of Peach which some call Nucipresica or Nectorins these following kinds (6)," but as my edition is the revised one of Johnson I am not sure whether I quote the former or the latter. Parkinson, in 1629, in Paradins, p. 582, under Nucipersica—Nectorins—says:—"I presume the name Nucipersica doth most rightly belong unto that kind of Peach which we call Nectorins; and although they have been with us not many years, yet have they been known both in Italy to Matthiolus (Matthiolus, b. 1500, d. 1577) and others before him, who it seemeth knew no other than the yellow Nectorin, as Dalechampilis, Delechampius, b. 1528, who it seemeth knew no other than the yellow Nectorin, as Dalechampius (Dalechampius, b. 1528, d. 1597). But we at this day doe know five severall sorts of Nectorins, &c.," He adds, "the fruit is more firm than the Peach, and more delectable in taste, and is, therefore, of more esteem, and that worthily." The word Nectarine, as we now have it, was used by Evelya in his Kalendarium Hortense in 1679, under February. "In the Nectarine and like delicate mural fruit the later your pruning the better—and in March. Now also plant Peaches and and like delicate mural fruit the later your pruning the better—and in March. Now also plant Peaches and Nectarines early, but cut not off the top rootes as you do of other trees, for it will much prejudice them." Ray, in his History of Plants (Hitt. Plant, 1685), p. 1516, mentions it as the sixth of the seven species of the Peach given by C. Baubin in his Pinax, 1623 (b. 1560, d. 1624), which he thus describes:—"VI, Nuclpersica, quod mucum Juglandium faciem representet. C. B." "Nuclpersica. Park., Parad. J. B." "THE NECTARINE sapore delicatissime nectareo." Of this he describes twelve varieties. Ray also says that Theophrastus saw the Peach in Persia, and brought away plants. Ædile.

Bees and their Relations to Fruits and Bees and their Relations to Fruits and Flowering Plants—At present I will not reply in detail to your correspondents Mr. J. Sheppard and Mr. J. Horsfield, as other correspondents may possibly wish to relate their experiences of this, to me at least, very interesting subject. The meaning I intended to convey was that by bees generally confining themselves to one particular kind of flower when gathering pollea, they thereby fructified another flower with pollen, not its own but of the same species or variety of the same, thereby preventing inbreding, and in cases when the sexual organs of the flower do not come to maturity at the same time, insect agency by visiting flowers in various stages of develop-ment would accomplish that which otherwise would remain undone, and sterility would be the natural conremain undone, and sterillity would be the natural consequence. The apparent reason why bees confine themselves to one kind of flower when gathering pollen is that the pollen grains of different genera are of different shapes, sizes, adhesiveness, and consistency, or, in other words, they would not mix well. Mr. J. Horsfield had better not arrive at hasty conclusions, by watching three bees in a greenhouse, his bee number three might have been gathering pollen, or honey, or both. If "J. H." will be kind enough to refer me to the "more recent authorities," in which Huber's theory of wax making by the honey bee, and Aristotle's theory of bees confining themselves gener-Aristotle's theory of bees confining themselves generally to one particular genus of flower when gathering pollen is contradicted I shall be much obliged. ally to one particular genus of flower when gatheriag pollen is contradicted I shall be much obliged. To Mr. J. Sheppard I will plead my ignorance and consess that I have much yet to learn about plants (and bees also,) but if I said anything to lead him to suppose that believed inheterogeneous impregnation I regret having done so. My experience in that direction is quite the reverse. I "1," S. "have the opportuoity and the liking for observation he can convince himself that the pollen balls conveyed by the bees are of a uniform colour throughout, which would not be the case if they collected pollen "just as it comes in their way," and they instinctively avoid "having things rather mixed." To me there is evidence of design in the creation of the honey-bee for some special purposes, and I have yet to learn, that in the earlier period of man's existence, a suitable substitute could be found for honey or beeswax. For the enlightenment of "J. S.," I believe the generally received opinion based upon experiments is, that pollen is gathered by the bees to feed their larva, after undergoing a process of mixing, &c., and what they do not require for immediate use they store. If any proofs were wanting of the evidence of design as manifested in the creation here is one. Let it be required to find what shape a given quantity of matter must take, in order to have the generate the same time the Let it be required to find what shape a given quantity of matter must take, in order to have the greatest capacity and strength, occupying at the same time the least space and consuming the least labour in its construction—when this problem is solved by the most refined mathematical process, the answer is the hexagonal cell of the honey-bee. North Norfolk.

The Best-keeping Potato.—I presume in asking the question he did at p. 489, "W. J. M." really desired to know which is the best-keeping Potato, cropping and quality being taken into consideration,

I fear that is a query very difficult to answer, simply because Potatos vary so much in diverse soils and localities. Still farther, each locality seems to have its favourite, and by these, without perchance knowing much of others, local growers will swear. Now we can hardly hope to get any very first-class old Potatos in the spring. Our winters now are so mild that it is almost impossible to prevent the tubers, store them how we will, from pushing more or less; and during the past winter, for instance, more has been the rule. In such case we cannot expect to have old tubers possessing good quality, as the starchy compounds in them disappear fast when growth sets in, and, what is almost worse, frequent moving to rub off the shoots, In such case we cannot expect to have old tubers possessing good quality, as the startopy compounds in them disappear fast when growth sets in, and, what is aimset worse, frequent moving to rub off the shoots, or help check growth, does but serve to bruise or blacken the tubers, so that when cooked they are anything but pleasing in appearance. We can keep seed tubers fairly well in check by storing them thinly, and in a dry, airy place, but such storing would render other Potatos unfit for food; the obvious remedy seems to be cultivating some kinds that are late in pushing their growth for late consumption. But against that suggestion we have to set the difficulties presented by the operations of the disease, which not only necessitates early planting, and the culture chiefly of early maturing sorts, but disease, which not only necessitates early planting, and the culture chiefly of early maturing sorts, but foliage, and thus checks the growth so early as a rule, that even these late kinds find their eason accelerated, for if matured in August, rather than in September, they are thus all the much more precocious in the following spring, if not in growth in the ground, at least in the store. At the present moment, out of some sixty kinds, I have not a sort in commerce that has not some time since pushed its buds, though kept as exposed as pressible, and under the coolest conditions the season will afford. Of course tubers required for consumption must not be so exposed, and they suffer from the higher temperature necessarily found in pits, boxes, tubs, or other places in which tubers are in bulk. Of one kind not yet in commerce I may say that more than any other it presents evidences of unusual good keeping qualities, though all others have pushed. This kind has not an eye-bud yet showing signs of vitality, indeed it is the very latest to make growth wheo planted, so that it is usually a fortnight behind even the latest of other kinds, although not so late at the end of the season. Many growers, I fear, would re able acquisition, especially as the Kinu exhibits appear table quality. Most of the American kinds are bad keepers, indeed, when they push at all, it is not one or two, but nearly a score of eyes that start into growth, and thus exhaust the tubers in a short time. One peculiar value of smooth, handsome kinds is that they have as a rule tewer eyes, and the prominence of these coables the shoots, when they start, to be very easily rubbed off. Even this operation, which may be quickly done occasionally as the season advances, still necessitates much moving of the tubers, and from ne quickly done occasionally as the season advances, still necessitates much moving of the tubers, and from this motion or friction between one and another, of course they greatly suffer. Seed Potatos in bulk are now being offered at absurdly low prices. Purchasers must be careful lest such stocks have been already exhausted in pits by two or three growths. A. D.

Which is the Best Table Potato at Present? Which is the Best Table Forder at Fleschir, W. J. M.," p. 489, has done good service in raising this question just now, as the majority of cultivators have not enough of new Potatos yet to meet all demands, and the old ones must still form the bulk of have not enough of new Folatos yet to meet all demands, and the old ones must still form the bulk of the eatable tubers. As most of us know, at this time of the year there are old Potatos and old Potatos, some kinds being pasty, bitter, and nauseous, while others are dry, floury, and sweet—better, indeed, than many of the new ones are at first; and growers would profit by bearing these facts in mind when planting late Potatos at this season. What "W. J. M." says of the Champion is true of it here, as, besides being black in the centre, it is too often hollow there, especially if the tubers are of a large size. Magnum Booum has not these faults, but it is not always as mealy as could be desired. The Victoria is most subject to disease, and this is its worst fault. White Elephact and Beauty of Hebron are behind dezens which could be named for quality. I eschoolmaster we cannot admit a fault for a spring Potato of the highest quality. Here not 1 per cent. of it is lost with disease; it crops uncommonly beavy, and from January until new Potatos are fairly in it is not to be surpassed on the table. I send you an ordinot to be surpassed on the table. T send you an ordinary sample of our roots, of this variety that you may judge of its merits croked and uncooked. 7. Mair, Margant Park, S. Wales. [We are stannch advocates for the schoolmaster—a good one—in more senses than one. ED.]

Fruit Prospects .- These have seldom been more promising, and the promise of plenty may be said to extend to all sorts of fruit. Apricots have been literally white as a sheet; Peaches and Nectarines have followed suit, with such a show of pink as to make the red bricks pale in contrast. And now Plums of all sorts—from Golden Drop to Damsons—are smothered with bloom. Cherries are also all that can be desired. Apples are most promising, and Plurs a good average show. Bush fruits and Raspberries are full of embryo fruit or opening blooms, and Filberts are plentiful. With anything like a favourable spring, a full fruit basket will be one of the most pleasing features of the current year. As we are now well into April, and every day's sunshine adds to the chances of saving the crop, these probably are now greatly in favour of a full crop. Up till now too, there have been few or no insects. The aphides, that seem either to come on the wings of the east winds, there have been few or no insects. The aphides, that seem either to come on the wings of the east winds, or, if not, to thrive so vastly upon that hard fostering as to seem as if they did—have not yet appeared on Peaches or Plums, though a week of south-east wind has prevailed. But we must not halloa till we're out of the wood, and it is a fact that the aphides seldom come till the wood-buds have so far developed and the section of the section of the wood will be wood with the wind the section of into shoots as to furnish them with a sufficiency of food. This correlation between the advent of insects food. This correlation between the advent of insects and the growth of their food is one of those mysteries of Nature that are most difficult to unravel. The ants are, however, already about the Peach trees, rushing about in a very restless manuer, as if looking for something they cannot find; and, no doubt, should they be able to pick up a few aphides they will soon post them most advantageously on the Peach trees, on which they would feed and thrive like bees in Clover. It is to be hoped the ants may not find any aphides, and that thus the trees may escape their blighting influence. Few things at first sight may seem more independent of each other than the growth of Peach trees on walls, the development of aphides, of Peach trees on walls, the development of aphides, and the revival of ants in the spring, and yet the safety or wreckage of the Peach crop depends on the safety or wreckage of the Feach crop depends on the meetings or missings of these three at a certain stage of growth. Hence, vitally important as the weather is, it is not the only factor that ensures success or causes failure directly. How far its indirect effects on growth, and the fostering or checking of insect lile, contributes to either, is a far more difficult matter to determine. As growth advances and hardens it to determine. As growth advances and hardens it becomes less attractive to insect pests; the latter also make far lessimpression upon it. In this composing make far lessimpression upon it. In this composing way genial spring weather favours the freedom of fruit trees from insect pests, and also enables them to withstand them the better should they be attacked. Experience also points to the unexpected fact, that cold rather than warmth promotes the multiplication of aphides. No doubt it is a popular error that they come on the wiogs of the east wind, though few can doubt the fact that when the east wind is the coldest the aphides are the strongest and the most numerous; the fact being, I believe, that the checking of the sap sweetens it the more, and renders it more palatable to the aphides, and probably also more easily accessible. Be also that as it may, the abnormal multiplication of aphides during cold winds is a fact with which all fruit growers are only too familiar, multiplication of aphides during cold winds is a fact with which all fruit growers are only too familiar. And hardly have these pests been established on the trees when the ants appear to assist their slow locomotive powers by lifting them up and quickly conveying them from place to place. Thus the distinctive powers of the aphides are virtually increased and extended in the ratio that the ant travels so much faster than an aphide. Up to the present date (April 7) no aphides have appeared on our Peach trees, and should they continue clean a few weeks longer trees and crops alike may be pronounced safe. Notwithstanding all the modern remedies for aphides there is nothing less hurtful to the trees or more effective against the modem remedies for aphides there is nothing less hurtful to the trees or more effective against the insects than tobacco in powder or in liquid. In the former case the infected branchlets must first be sprinkled, and the tobacco-dust or snuff applied through a dredge-box. In the latter the liquid should be dashed on with a springe. It is good practice first to dash as many aphides off as possible by the mere force of pure water applied through a garden engine, and thus, while the leaves are still wet, and the aphides are half disammed and balf dead by their battering and bruising, apply the tobacco liquor, which speedily destroys the aphis, already three-quarters killed. There is another great advantage in applying killing mixtures to wet leaves and branches; they prove far more penetrating, and reach every part of the leaves and branches with more facility, and certainly tobacco-liquor, parafin oil, or other insect the leaves and branches with more facility, and certainly tobacco-liquor, parafin oil, or other insect destroyer, applied to dry leaves and branches, are resisted by the dryness, as if they were protected by oil. Much of the mixture glides off insects and foliage alike, doing little execution on the pest; but, applied to thoroughly wet leaves and branches, the distinctive agents mix with the water, and are thus brought into direct contact with the insects. From the amount of moisture already on the trees, the observative or other insect destroyers may also be the amount of moisture already on the trees, the tobacco-water or other insect destroyers may also be applied stronger than when used on dry trees. This, however, will not involve any loss of material, but rather the contrary, as much less of it will go further; and a larger proportion of that applied being brought into closer contact with the applieds will prove far more destructive. D. T. Fish.

FORESTRY.

INTERNATIONAL FORESTRY EXHIBITION .- The Executive Committee have been very busy during the last fortoight completing arrangements for laying-out the buildings and grounds, and the contractors (Messrs. BEATTIE & SONS) for the erection of the galleries have already made considerable progress with their portion of the works, so that all promises to be ready in good time for the reception of the exhibits early in June. The applications for inside space are much in excess of the accommodation originally provided, and considerable extension of the galleries will be necessary to make room for all the valuable and interesting exhibits which have been entered. Large as the open-air space is, it is being rapidly filled up, the large number of applications coming in at the last moment rendering it a matter of some importance how hest to accommodate and display the various extensive collections. The list of foreign countries who will exhibit is by no means complete, but it includes Canada, New Brunswick, Mississippi State, Columbia, Denmark, Persia, Chili, Boroeo, Japan, Salvador, and Honduras, The Ducal Government of Coburg, and other Governments who have not time to send actual collections of timber, will send administrative reports and maps. The collections of the Scottish foresters will be placed in a separate court, and already the chief landed proprietors or their managers have sent in applications for space. Side by side with the Pines of Scotland will be exhibited a large section, 8 feet high, of one of the gigantic Sequoias of the Yosemite Valley. The tree from which this is taken measures 18 feet in diameter, or nearly 40 feet in circumlerence.

Sweden and Norway will only he officially repre-sented by collections of forest seeds and contributions of maps and charts, but the timber and pulp and paper industries of these important countries will occupy a space of from 1500 to 2000 square feet. From Italy, France, Russia, and Germany many applications are being daily received. In the last-named country Mr. Charles Hugo, Hamburg, has been appointed official agent; the Government of Denmark has appointed Mr. Lauritz la Cour their commissioner; and other countries and colonies bave made similar appointments. Further telegrams from the Viceroy of India have increased the space already applied for, so that the court will now include 6500 square feet. The preparation of the Timber Trophy from the Andaman Islands, which embraces some grand specimens of the native woods, has been entrusted to Mr. Shillinglaw, Edinburgh, who may be expected to do it ample justice. The time for receiving exhibits has been fixed between June 10 and 18, but already the secretary's office is beginning to wear a foreign aspect from the contributions sent from Canada and India, and a large store-room at the Great Northern Depository is getting gradually filled with exhibits from foreign residents who have been unaware of the date of opening.

Che Arboretum.

ARAUCARIA IMBRICATA,—In answer to your correspondent, "P. F. L.," I have an Araucaria imbricata here and a good specimen. Tradition says it was planted in 1822. The present height is 55 feet, girth of trunk 3 feet from ground, 6 feet 6 inches. a male tree and bears every year abundance of catkins, but a few years since it hore one cone from which I raised several plants. It is very dense in habit and a few years since looked as if it had finished its growth, the top of the tree looking almost flat. Last year, however, it made a start again though a small one. The bole is clear of branches for 12 feet from the ground line, but none the less the ends of the branches nearly touch the ground. I have many Araucarias here, but no two alike in habit; one, a female with twenty-three tiers of branches feathered to the ground is the most graceful tree of the kind I know, it must he close upon 40 feet high, and was planted in 1851, being then about 4 feet high. It is much finer and more delicate both in the wood and "leaves." The large Araucaria is very badly placed, only 14 feet from the conservatory, and for some time it has looked as

if the following year it would reach the conservatory, but it fails to do so, the weight of the branches bringing them down. W. Rolles Fryer, Lytchett Minster, Poole. [We shall be glad to receive details of dimensions, &c., from other correspondents. ED.]

FRUIT NOTES.

ROYAL RUSSET APPLE,-This may be said to be the most ornamental looking Apple that could be selected for the table, the subdued richness of its colouring not being equalled by that of any other variety, the russet-brown, dark crimson, and amber tints being harmoniously bleuded, the crimson seeming to glow like a smouldering fire in a dark place. texture of the skin is rough, like that of a Regent Potato, and, like it, having excellent qualities under the rough coat. The shape is also just what is to be seen in a good race of Apples, being bluutly pyramidal, as in Golden Spire, but rather more acute.

RASPBERRY LORD BEACONSFIELD,-The January number of the Florist and Pomologist, t. 602, contains a plate of this new Raspberry, raised as a chance seedling in the garden of Mr. Faulkner, of Inkpen, near Hungerford. The canes are stout, nut-brown, leaflets very pointed, silvery beneath; fruit very ahundant on the summer branches, large, roundish, or somewhat conical, crimson,

APPLE REINETTE ROUGE ETOILÉ. - A remarkable German or Belgian Apple of medium size, globular form, with a short stalk in a deep basin and a shallow eye. The colour is a reddish-crimson, streaked, and a few lighter specks. The flesh shows 5-rounded white lohes forming a central cinquefoil surrounded by a broad belt of a reddish colour. The tree is productive, and the quality of the fruit good. Season, January-March. Figured in the Bulletin d'Aboriculture, January, 1884.

Reports of Societies.

Edinburgh Botanical: April 10.—The Society met in 5. St. Andrew Square, Mr. W. B. Boyd, President, in the chair. The death of Professor Allen Thomson, M.D., a son-resident Fellow, was noted. The following communications were received:—
1. "The Development of the Organs of Reproduction in the Jungermannie." Part II. By John Mac-

The following communications were received:—

1. "The Development of the Organs of Reproduction in the Jungermannie." Part II. By John Macmillao, Sc. B., F.R.S.E., Perth.

II, "On Some of the Methods of Geographical Botany, with a Proposal to Resuscitate the Committee for Local Observations, Suggested in 1876 by Mr. Buchan." By Andrew Taylor, Secr.

The Committee noticed in the title had been formed to investigate the influence of the sea on selected plants, specially along the coast of the Firth of Forth from North Berwick to Grangemouth. It included the names of Sir Robert Christison, Professor Balfour, Messrs, Gorrie, Sadler, and Alexander Buchan, who was now the ooly surviving member. From illuess and other causes no work had been done. The attention of the Society was also directed to the Petrage sur Phânologie, by Drs. Ihne and Hoffman, of Geissen, just issued, in connection with a sub-committee charged by the Council to prepare a new scheme of phenological observation and report—an enlargement, in truth, of the meteorological observations so long issued in the Society Transactions. Dr. Pickering's Chronological History of Plants also showed a method of investigation susceptible of local applications. The islets of the Forth were, as is well-known, occupied by religious orders for lengthened periods, and the Society might investigate their floras, contrasting those introduced by such human ageocies with indigenous species.

periods, and the Society might investigate their floras, contrasting those introduced by such human ageocies with indigenous species.

In view of Blackford Hill being acquired as a new public park for Edinburgh, means should be taken for conserving its local flora, and the same care indeed was needed for the native plants of the Queen's Park.

III. "On the Progress of Open-air Vegetation at the Royal Botanic Garden," by Robert Lindsay, Curator.
"The month of March has been very mild compared with that of last year, still it has been the most severe of any mouth during this unprecedentedly mild season. The thermometer was at or below the freezing point on twelve nights. The lowest readings occurred on the 3d, 28°; 11th, 27°; 22d, 29°; 21th, 28°; 26th, 27°; the highest morning readings ranging from 47° to 53°. Collectively 29° of frost were registered for this order of the state
ceous plants are on an average a fortnight earlier than last season. Trees and shrubs are developing their leaf-buds about a week earlier. Thoms were in full leaf by the end of the month; Poplar, Llae, Horse Chestnut, and Maple being far advanced. Magnolia conspicua and purpurea, which last year at this date were in full flower, are not yet expanded. These plants are trained on south walls. Their lateness in flowering can only be accounted for hy their wood being insufficiently ripened last summer and autumn. To the same cause may be attributed the lateness and poor condition of several other flowering plants on walls, notably Prunus triboba.

"Of the forty spring-flowering plants whose dates of flowering are annually recorded, the following six came into flower, which now completes the list, viz.:—

March	24
	-
	30
April	3
p	2
**	8
- 11	9
	,,

"In the rock garden sixty-three species and varieties of dwarf berbaceous and alpine plants came into bloom during the month, as against twenty-eight last March, the various spring flowering bulbous plants being very fine and well flowered. Amongst the most conspicuous which flowered were-

Erythrooium graediflorum Puschkiela scilloides Chiooodoxa Luciliæ Corbularia oivalis Soldaeella moutana Primula ciliata " iategrifolia " cashmiriana

Primula viscosa Primula viscosa
Iberis petræa
Meoziesia cœrulea
Erica mediterracea
Adoois vernalis
Rhododeodron ciliatum
Saxifraga oppositifolia, varieties

"Such favourable weather for outdoor work rarely

"Such favourable weather for outdoor work rarely occurs as that of the past month has been."

IV. "Report on Temperature and Vegetation in the Garden of the Royal Botanic Institution of Glasgow, March, 1844." By Robert Bullen, Curator.

"The bighest day temperature registered was 64° on the r6th, an unusually brilliant day for this season of the year. The lowest temperature was 26°, or 6° of frost, during the night of the roth. The thermometer field below the freezing-point eight times only during the month, giving a total of 21°.

"During March last year the thermometer fell below the freezing-point twenty-three times, giving a total of 115°. Snow lay on the ground during the first four days of the month; since then the rainfall has been light. Another storm of great severity falls to be recorded during the inght of the ryth; these storms have visited us monthly of late, and always at night, doing considerable damage in the way of uprooting trees, &c., when we could least guard against them; otherwise we have experienced one of the most favourable spring months recorded for several years, which has enabled us to overcome arrears of out-the most favourable spring months recorded for several years, which has enabled us to overcome arrears of out-the most savules, smoke-clouded climate, being more fatal than a hard one. The season is quite a normal one as regards vegetation."

V. Miscellaneous communications:—

The following plants in flower were exhibited from the

V. Miscellaneous communications:—
The following plants in flower were exhibited from the Garden:—Narcissus bulbocodium minor, N. moschatus, N. rupicola, N. juncifolus, N. ruhandrus, Primula ciliata Balfour, P. acaulis, varieties having leafy and coloured calyx: Tecophylae cyanocroons, Saxifraga fiagellaris, ec. From 1. Anderson-Henry, Esq., Hay Lodge:—Primula poculiformis, Androsacea roundifolia, Anemone thalictorides flore-pleno. From the Garden were exhibited plants in flower of Pinguicula candata, Corbularia bulbocodium sulphureum, Saxifraga Burseriana, S. Boydil, a yellow flowered form of S. Burseriana; S. Stracheyii, Soldanella alpina, Galanthus nivalis, a late flowering variety, received from Mr. Melville, Dunrobin Castle. Miscellaneous communications :-Castle.

Obituary.

THE death is announced of the DUKE OF BUCCLEUCH on the morning of the 16th inst., at Bowhill, Selkirkshire. The Duke had some connection with horticulture, not only as the owner of two of the finest garden establishments in the country, Dalkeith Palace, and Drumlanrig Castle, as well as half-adozen or more smaller ones, but in virtue of his association with the Royal Horticultural Society, the Royal Caledonian Horticultural Society, and the Gardeners' Royal Benevolent Institu-His connection with the Royal Horticultural tion. Society commenced early in 1862, shortly after the lamented death of the Prince Consort, when, the Queen's wishes being consulted as to the choice of a new President, her Majesty was graciously pleased to recommend the Duke as the person it would be most agreeable to her Majesty's feelings to see holding that position. This office he held until April, 1883, when, with other members of the Council, he resigned, his successor in the office of President being Lord Bury. On the death of the late Duke of Devonshire, the Duke of Buccleuch was

elected President of the Gardeners' Royal Benevolent Institution, and by his death the Institution has lost a munificent supporter.

- We should also ere this have recorded the death, about a month ago, of one of the Duke's oldest servants, in the person of Mr. MATTHISON, the much respected gardener at Bowhill, whose successor's appointment we noted last week. Mr. Matthison, who was ninety years of age, had served the Duke of Buccleuch for fifty years, and was previously gardener for twelve years at Armiston House, Midlothian.

The Meather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON, FOR THE WEEK ENDING WEONESDAY, APRIL 16, 1884.

MONTH AND DAY. Reading BB Re		Temperature of the Air.					Hygrome- trical De- ductions from Glaisher's Tables 6th Edition.		WING.	1
Mean Reading Reduced to 32° Fahr.	Departure from Average of 18 years.	Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 50 years.	Dew Point,	Degree of Humidity. Sat. = 100.	Average Direction.	RAINFALL
In.	In.						,			In.
29.80	+0.06	\$2.0	39.0	13.0	44.6	- T.T	38.3	78	N: NW	0.00
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29.87	+ 0.13	52.5	38.0	14.5	43.7	- 2.2	39.8	86 {	N.E.	0.00
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		1								0,00
29.68	-0.07	49.5	39.0	10 5	43.0	- 3.6	38.4	83	N.	0.00
29.81	+ 0.07	51.2	38.4	12.8	43 • 7	- 2.5	38 8	83 {	N.: N.N.E.	0.06
	Mean Reading No. 20 80 80 80 80 80 80 80 80 80 80 80 80 80	Mean Reading R	Mean Reading Reading No. 1	T. H. W.	THE / V V	THE AIR.	THE AIR.	BAROMETER THE AIR. TEMPERATURE OF CITY OF THE AIR. THE	BAROMETER. TEMPERATURE OF TIGAL Deductions. Grainber's Tables (Mr. 2014). The Air. The Air. The Air. Tables (Mr. 2014). The Air. Tables (Mr. 2	BAFOMETER. TEMPERATURE OF CHICAL DO GUELLONG THE AIR. WING. CHISCHER THE AIR.

10.—Fine bright day and night.
11.—Fine, dull day and night.
12.—Dull day and night.
13.—Few gleams of sunshine in morning, dull afternoon and night.

and eight.
14.—Raie in morning, dull day and eight, slight raie ie

evening.

15.—Gleams of sunshine occasionally, dull day and night.

16.—Fine, overcast day, cold wind, fine clear night.

LONION: Atmospheric Pressure.—During the week ending April 12, the reading of the harometer at the level of the sea increased from 29,51 inches at the beginning of the week to 29,64 inches by 3 P.M. on the 6th, decreased to 29,64 inches by 3 P.M. on the 7th, increased to 29,95 inches by 3 P.M., and increased to 29,99 inches by 3 P.M., and increased to 29,95 inches by 3 P.M. on the 10th, increased to 29,95 inches by 3 P.M. on the 10th, increased to 30.07 inches by 3 P.M. on the 12th, and was 30.06 inches by 4 P.M. on the 12th, and was 30.06 inches by 4 P.M. on the 12th, and was 30.06 inches by the end of the week.

The mean reading of the barometer for the week at the level of the sea was 29.89 inches, being 0.32 inch higher than last week, and 0.03 inch below the average of the week. LONDON : Atmospheric Pressure .- During the week

of the week.

Temperature. — The highest temperature in the shade in the week was 60°.9, on the 9th; the highest reached on the 7th was 51°.2. The mean of the seven high day temperatures was 58°, on the 12th; on the 12th; on the 17th the lowest temperature was 36°, on the 12th; on the 17th the lowest temperatures was 40°. The mean of the seven low night temperatures was 41°.7.

of the seven low night temperatures was 41°.7.
The greatest range of temperature in one day was 10°.4, on the 9th; the smallest was 5°.2, on the 7th.
The mean of the seven daily ranges was 12°.5.
The mean temperatures were — on the 6th, 50°; on the 7th, 48°; on the 8th, 47°.7; on the 9th, 49°.1; on the 10th, 44°.6; on the 11th, 44°.8; and on the 12th, 43°.7; of these the first four were above their averages by 5°, 2°.8, 2°.3, and 3°.5; respectively, and the last three were below by 1°.1, 1°, and 2°.2 respectively.

The mean lemperature was 46°.8, heing 4°.1 lower than last week, and 1°.3 above the average of the week.

the week.

The highest reading of a thermometer with blackened hulb in vacuo placed in the full rays of the sun was 122°,5, on the 9th. The mean of the seven readings was 90°.

The lowest reading of a thermometer with its hulb placed on grass was 30°,2,2 on the 12th. The mean of the seven readings was 34°,4.

Rain fell on the 6th and 7th to the amount of 0.45 inch, of which 0.27 inch fell on the 6th.

ENGLAND : Temperature .- During the week ending April 12 the highest temperatures were 63°.4 at

Cambridge, 62° at Truro, 61°.4 at Nottingham; the highest at Bolton was 57°.7, at Brighton 58°, and at Bristol 58°.5. The general mean was 60°.

The lowest temperatures in the week were 28° at Sunderland, 29°.5 at Wolverhampton, 31° at Cambridge; the lowest at Blackheath and Bradford was 38°, and at Sheffield 37°. The general mean was

bridge; the substitute of the great mean was 38°, and at Sheffield 37°. The greatest ranges were 32°.4 at Cambridge, 32° at Sunderland, 29°, 5 at Wolverhampton; the smallest ranges were 20°.6 at Bradford, and 22° at Brighton and Sheffield. The general mean was 25°.5.

and Shenied. I he general mean was 25.5.

The mean of the seven high day temperatures was highest at Truro, 59°, at Plymouth 59°, at Nottingham 56°.3; and was lowest at Hull, 52°.7, at Sheffield 53°.2; and at Blackheath 54°.2. The general

field 53°.2, and at Blackheath 54°.2. The general mean was 55°.2.

The mean of the seven low night temperatures was highest at Sunderland, 43°.5, at Blackheath 41°.7, at Bradford 41°.5; and was lowest at Wolverhampton, 36°.4, at Bolton 38°.3, and at Nottingham, 39°. The general mean was 40°.4.

The mean daily range of temperature was grealest at Wolverhampton, 19°.1, at Truro 18°.3, at Nottingham 17°.3; and was least at Sunderland, 11°.4, at Sheffield 12°.5, and at Blackheath 12°.5. The general mean was 14°.8.

The mean temperature was highest at Truro.

mean was 14.'8.

The mean temperature was highest at Truro, 48°.3, at Plymouth and Sunderland 47°.7; and was lowest at Wolverhampton and Hull, 44°.5, and at Bolton 45°.2. The general mean was 46°.3.

Rain.—The largest fall was 0.57 inch, at Hull, and 0.45 inch at Blackheath and Sheffield; the smallest fall was 0.60 inch at Truro, 0.07 inch at Liverpool, and 0.09 inch at Plymouth. The general mean fall was 0.28 inch.

SCOTLAND: Temperature.—During the week ending April 12, the highest temperature was 60°.9, at Dundee; at Greenock the highest was 55°. The general mean was 58°.

The lowest temperature in the week was 26°, at Perth; at Leith the lowest temperature was 36°. The general mean was 32°.

The mean temperature was highest at Edinburgh, 46°.4; and lowest at Perth, 43°.4. The general mean was 45°.1.

Rain.—The largest fall was 0.09 inch, at Aberdeen, and the smallest fall was 0.09 inch, at Greenock. No rain fell at Glasgow. The general mean fall was 0.19 inch. SCOTLAND: Temperature.-During the week end-

o. to inch.

JAMES GLAISHER, F.R.S.

Answers to Correspondents.

ASPHALT COURT: ? Raine. You have put too much tar, and your materials are too finely comminuted. Use ½-inch spar gravel, &c., quite dry—autificially dried at this time of the year. Put only enough tar to coat the material well, and do not make it like soft mortar. Do not use any fine material; we do not see the use of lime. It will not slake with the tar, and will absorb moisture afterwards. You can sprinkle Derby spar on the surface, and ram it smooth; the appearance will be improved thereby. For really good work some bitumen ought to be added to the tar while boiling, as it causes the stuff to set quicker, and is hard in hot weather. hard in hot weather.

BOOKS: Hortus. British Grasses, by Miss Plues (Lovell Reeve & Co.). What do you mean by horticultural engineering? Please state more distinctly what you want.

What you wall:

CRICKETS: W. C. Large flower-saucers, or the like, half-filled with treacle, form a good trap for these pests. There are phosphorus beetle-pastes, which crickets will eat; they then die in their holes in great numbers, causing a noisome stench. Treacle is cheap; they like it, get in it, and seldom get out again. When it gets foul renew the store.

gets foul renew the store.

CUCUMBER LEAVES DISEASED: J. A Breeze. The leaves were covered entirely on the underside with mildew; even the youngest leaves showing signs of it. You will be able to do nothing with the plants so as to effectually get rid of it, although you might keep it in check with sulphar used in the water with which you syringe, and also by keeping saucers filled with water in which the same has been mixed. It would be better to clear out all soil and manure, then burn sulphur in the pits, and limewash all brickwork, and make a fresh start with healthy plants and soil. We fancy your top-heat is not quite sufficient, or the ventilation was excessive in cool weather.

DENDROBIUM CAMERIDGEANUM. — Mr. De B. Craw-shay's specimen of this Orthid, exhibited at the last meeting of the Floral Committee, was awarded a Cultural Commendation, and not a Vote of Thanks, as stated by us last week.

FUNGUS: J. Gregory. We have heen unable to identify the specimen.

Fungus on Plum Trees: T. S. Ware, Fungus known as Hypoxylon concentricum.

INSECTS: 7. 7. The caterpillar found boring into the stem of an imported Leelia is that of a moth, and looks very like that of one of our common English Switt moths (Hepialus sp.). Has the burrow made by the insect the appearance of having heen made before the

plant was imported, or more recently? In the former case the insect would most probably be an American. I, O, IV, P, P, IV, T. A weeval (otion/puchus) very common in gardens, and very destructive. They mostly feed at night, and if on trees are existly caught by spreading a cloth underneath the tree and giving it a good shaking. In your case we can only recommend you to capture them by hand picking. In doing this, make as little noise as possible, as the weevis sham death when disturbed.

LICHEN AND SYCAMORE: H. H. It should be pronounced like Lyken. Sycomore is so spelled in the revised version of the New Testament, because that is in accordance with the original Greek.

revised version or the New 1 estament, because that is in accordance with the original Greek.

Names of Fruits: *Frigland.* Your Apple was not recognised from the sample sent.

Names of Plants: *W. A. 1. Rhododendron nilagificum? 2. Arthrotaxus cupressoides. — R. B. L. The Loquat (Eriobotrya japonica). — Dido. Funkia snbcordata variegata. — Gruee Waddedt. Narcissus incomparabilis flore-pleno (Butter-and-Egg). —Hortus. Lucula campestris. — E. H. C. Alhum nepolitanum. Samophia. Hortus. Lucula campestris. — E. H. C. Alhum nepolitanum. Samophia. —Hry. 1. Erica ventricosa var.; 2, E. vestita. —C. W. Callistenon lanceolatus. —Ath. 1. Biggonia speciosa; 2, Amelanchier canadensis; 3, Nottos-cordon fragrans; 4, Ornihogalum umbellatum; 5, Epimedium alpinum; 6, E. pinnatum; 7, Pelargonium ardens; 8. Calecolaria violacea. —W. H. 1. Arpophyllum spicatum, very fine; 2, Alsophila Cooperi; 3, we cannot name without flowers; 4, Arundinari japonica; 5, A. falcata. The Eucharis bulbs appear to have been over-watered during the resting period. —W. IV. Anthurium Scherzerranum, small spathed var., and Oncidium ampliatum.

Oddontollossum: Ireland & Thomson. O. luteo-

ODONTOGLOSSUM: Ireland & Thomson. O. luteo-purpureum; a fine spike of a good variety, concerning which we shall have something to say in an early

PEACH TREE DISEASR: G. H. The cause is at present unknown. Your tree will get worse if nothing be done. The only remedy known is to cut the branches all back to their bases, and let them break again; and see that their roots are in a healthy soil, free from fungoid growths: next September.

SCHOOL OF HORTICULTURE: T. K. There is only the one at the Crystal Palace, Sydenham, Write to the Secretary of the Palace Company for particulars. Lectures suitable for gardeners are also given at the Birkbeck Institute, Chancery Lane.

INTELLIGENT READERS, PLEASE NOTE: — Letters re-lating to ADVERTISEMENTS, or to the supply of the Paper, should be addressed to the Publisher, and NOT to the Editor.

CATALOGUES RECEIVED.

LOUIS DE SMET, Ghent, Belgium - General Plant

Catalogue.

M. BRUANT, Poitiers, France—General Plant Catalogue,
ELLWANGER & BARRY, Rochester, N.Y., U.S.A.— Select Roses.

RAWLINGS BROTHERS, Romford — Descriptive List of Dahlias.

COMMUNICATIONS RECEIVED.—E. S. D.—E. V. B.—J. A.— P. B.—J. W.—W. S.—W. B.—W. H. B.—C. W. D.—Julico Vesque.—Frettingham & Soo (many thanks; later on in the season).—C. A.—K. & S.—C. T. C. P.—A. D. W.—P. F.— M. D. (many thanks).

Markets.

COVENT GARDEN, April 17.

HEAVY supplies have come to hand, met by a lifeless trade. We have been completely at the mercy of buyers. Some new Grapes have made their appearance, and the first dish of Peaches arrived on the 10th, a full week earlier than usual. Janes Webber, Wholesale Apple Market.

FRUIT .- AVERAGE WHOLESALE PRICES.

s.d. s.d.	s. d. s. d.
Apples, 1/2-sleve 3 0- 5 0	Pine-apples, Eng., lb. 1 6- 2 0
Cobs. per 100 lb 125 0 150 0	-St. Michael's, each 2 o- 8 o
Grapes (new), lb. 4 o- 10 0	Strawberries, per lb. 2 o- 6 o
Lemons, per case 10 0- 14 0	

VECUTABLES - AVERAGE RETAIL POICES

s. d. s.	d. s. d. s. d.
Artichokes, Globe,	Herbs, per bunch o 2- o 4
per dor 3 0-	5 o Horse Radish, bund. 3 o- 4 o
- Ierusalem, bush, 4 o-	Lettuces, Cabbage,
Acraraone English	per dozen 1 6
Asparagus, English, per 100 8 o-	French Cos, each o 6
Caralah harada a 6	Mint man busch 0 0
- Spanish, bundle 2 6-	
- Toulouse, bund. 3 o-	
- Perpigaon, bund. 1 o-	
Beans, French, p. 100 1 6-	- Spring, per bun, o 6
Beet, per doz 1 o-	Parsley, per bunch o 4
Cabbages, per doz 1 o-	
Carrots, per bun o 4-	
- New French, per	
bunch 1 0-	
Continue I o	Salsaly, per buodie o o
Cauliflowers, Eog-	
lish, dozen 2 o-	
Celeriac, per root o 4-	
Celery, per bundle 1 6-	2 6 Sprue, French, bund. 1 6
Cucumbers, each o 6-	I o Tomatos, per lb 3 6
Endive, French, per	
doren 2 0-	New 1 3
Garlic, per lb o 6-	3
POTATOS - Kept Magnums	. Sos. to roos, per ton do Regents

Potatos.—Kent Magnums, 8os. to 100s. per tou; do., Regeots, 8os. to 100s.; Champions, 5os. to 65s.—New: Jersey, 4d. lb.

TEAMIS IN FOIS.—AVERAGE WHOLESALE I AICES.			
s. d. s. d.	s. d. s. d. Ferns, in variety, per		
Aralia Sieboldi, doz. 12 0-24 0	Ferns, in variety, per		
Arbor-vitæ (golden),	dozen 4 0-18 0		
ration-vita (golded),	To dozet		
per dozen 6 o-18 o	Ficus elastica, each 1 6- 7 o		
- (common), dozen 6 o-12 o	Foliage Plants, vari-		
Arum Lilies, dozen 8 0-12 0	ous, each 2 0-10 0		
Azaleas, each 2 6- 5 0	Genista, per dozen 9 0-:8 0		
Begonias, per doz 6 0-12 0	Hyacinths, per doz. 6 o- 9 o		
Bouvardias, doz 12 0-18 0	Lily of the Val., pot 10-16		
Cinerarias, per doz, 8 o-12 o	Marguerite Daisy,		
Cyclameo, per doz12 c-30 o	per dozen12 0-18 0		
- Extra size, each 5 o- 10 o	Myrtles, per doz 6 o-12 o		
Cyperus, per dozeo 6 o-12 o	Narcissus, per dozen 9 0-12 0		
Dracæoa term. doz30 0-60 0	Palms in var., each 2 6-21 0		
mindia and described to			
- viridis, per doz., 12 0-24 0	Pelargoniums (show)		
Erica, various, doz. 9 0-24 0	rer dozen 12 0 24 0		
Euonymus, various,	- scarlet, per doz., 4 o 12 o		
per dozea 9 o-18 o	Primula, single, per		
Evergreeos, in var.,	dozen 4 0- 6 0		
	Tulips, per dozen 6 o- 9 o		
per doze 0 0-24 0	a disps, per doren si e e g g		

SEEDS.

London: April 16.—Messrs, John Shaw & Sons, Seed Merchants, of 37, Mark Lane, report a quiet, steady inquiry for field seeds. Of choice red Clover seed the supplies are not over abundant, but some quantity of low seed will have to be carried over. For Trefoil the demand has been disappointing throughout; fine white, being exceedingly scarce, is substantially dearer. Alsike is without change. Bird seeds sell slowly on former terms. Linseed steady.

CORN.

Monday heing Bank Holiday there was no market held at Mark Lane. On Wednesday, at the early mar-ket, Wheat was firm, but not much business doing. Flour steady, Maize held for slight advance, Oats tending dearer, Barley and other articles quiet. Weather dull. At the close of the market, prices of Wheat remained the same as last week. The week closed nearly at the morning's figures.

CATTLE.

At the Metropolitan Market on Monday, fully 2d. per 8 lb, advance was realised in the current trade for beasts, and more in some cases for prime qualities. Lambs were very scarce, and fully as dear as on last market day. A good supply of sheep met a steady sale at rather better prices. Very few calves were on offer. Quotations:—Beasts, 4t, to 5, 6d, and 5, 8d, to 5t, 10d.; calves, 5t, 8d, 10, 7s, is sheep, 4t, 8d, to 5t, 2d, and 5t, 4d, to 6t, 1 lambs, 8t, to 8s, 8d, 10g, 5t, 4d, 6d.—On Thursday beasts met a slow sale, at Monday's prices. Sheep were dull, and hardly so strong; but lamb maintained its value. Calves and pigs sold on former terms. former terms.

HAY.

HAY.

Tuesday's Whitechapel Market report states that supplies were mederate, and trade very dull. Quotations:
—Clover, first quality, 90s. to 1082; inferior, 60s. to 755; prime second cut, 90s. to 1062; jebst meadow hay, 80s. to 87s; inferior, 405. to 65s; and straw, 28s. to 37s. per load.—On Thursday there was a rather large supply offered. The trade was very quiet, at late rates, Quotations:—Prime Clover, 80s. to 108s; inferior, 60s. to 80s; prime meadow hay, 70s. to 87s; inferior, 60s. to 60s; and straw, 30s. to 36s. per load.—Cumberland Market quotations:—Superior meadow bay, 84s. to 90s.; inferior, 63s. to 74s; superior Clover, 10s. to 112s.; inferior, 70s. to 88s.; and straw, 34s. to 38s. per load. per load.

POTATOS.

From the various market reports we learn that there bave been plentiful supplies on offer, but trade slow at the following prices: Flukes, Magnums, 70x. to 80x.; Victorias, 80x. to 90x; Regents, 60x. to 80x; Chambians and the following the forms and the following the forms and the pions, 50s. to 65s. per ton.

COALS,

The following are the prices current at market during the week:—Lambion, 152. 6d;. Lyons, South Hartle-pool, and Wear, 143. 6d;. Hetton and Tees, 16c; Ravensworth and Hartley, 143. per ton. Owing to the cold weather prices seem to have improved about 11. per ton all round.

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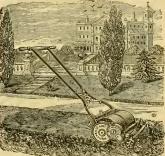
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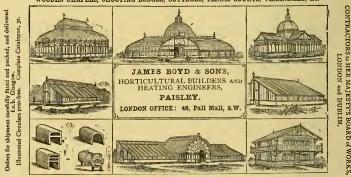
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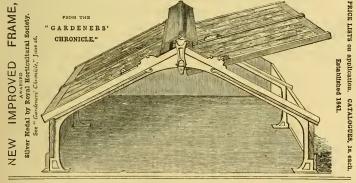
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 chronic debility. Holloway's Pills are infallible remedies for
 agreeable symptoms which render the lives of thousands
 miserable indeed. These Pills Pills are approved by all classes.

GREEN'S PATENT "SILENS MESSOR" AND OTHER

LAWN-MOWING, ROLLING and COLLECTING MACHINES for 1884.

THE WINNERS OF EVERY PRIZE IN ALL CASES OF COMPETITION.

Patronised by Her Most Gracious Majesty the Queen on many occasions, His Royal Highness the Prince of Wales, the King of the Belgians, the late Emperor of the French, the Emperor of Russia, and most of the Nobility, Clergy, and Gentry of the United Kingdom.

Royal Horticultural Society's Show, South Kensington, London, June 3 to 7, 1881.

The "Yournal of Horticulture," of June 0, 1892:—"Mowing Масиния». After a critical examination the Sliver Medal was granted to the old firm of world-wide fame, Messrs, T. Green & Son, of Leeds and London. As the Machines are known in all lands where good lawns are cherished, it is quite unnecessary to give any description of them."

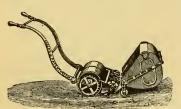
Upwards of 115,000 of these Machines have been Sold since they were first introduced in the year 1856,

And thousands of unsolicited Testimonials have been received testifying to their superiority over all others.

They have been submitted to numerous practical tests in Public Competition, and in all cases have carried off every Prize that has been given.

1st. Simplicity of Construction—every part being easily accessible.

4th. They make little or no noise in working. 5th. They will cut either short or long Grass, wet or city.



SINCLE-HANDED LAWN MOWER.

To cut 6 inches		Price	£1	15	0
To cut 8 inches			2	10	0
To cut 10 inches					
To cut 12 inches	•••		4	10	0
To cut 14 inches	•••		5	10	0
DOUBLE HANDED	I ANAZA	1 844	WE	D	

DOUBLE-HANDED LAWN MOWER.

DOODLE HAN	DLD					
To cut 16 inches			Price	£6	10	0
To cut 18 inches				7	10	0
To cut 20 inches						
To cut 22 inches				8	10	0
To cut 24 inches	•••					
* If made stronger,	suitabl	e for D	onkey, 3	os, e	xtra.	

Prices of Donkey, Pony, and Horse Machines, including Patent Self Delivery Box, with Cross-stay complete, suitable for attaching to Ordinary Chaise Traces or Gig Harness:—

DONKEY and PONY MA	CHINE	3.	
	£14		
	16		
To cut 30 inches	18	0	0
	1	0	0
Leather Boots for Pony	I	4	0

		TTOTOL	,,,,	344 14 0 2	*****				a
0	To cut 30	inches		•••		£22			
0	To cut 36	inches				26	0	0	
0	To cut 42	inches				30			
О	To cut 48	inches				34			
0	Leather B	oots for	Ho	rse		1	9	0	l
Do	nkey the 20 it	oches by	a P	onv. and	the larg	er sizes	hv	2	ı

Leather Boots for Pony ... 1 4 0 Leather Boots for Horse 1 9 0

The 26 and 28 inches can easily be worked by a Donkey, the 30 inches by a Pony, and the larger sizes by a Horse; and as the Machines make little noise in working, the most spirited animal can be employed without fear of it running away, or in any way damaging the Machine.



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Small Bags of Marking Composition, Mat, and Packing, 11. 6d.

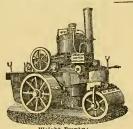


Specially designed to meet a want that has long been felt in cutting the overhanging grass on the edges of walks, borders, flower-beds, &c., and do away with the tedious operation of cutting with shears.

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SUITABLE FOR HAND OR HORSE POWER.





Weight Empty: 6 TONS. 7 TONS.
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Green's Patent Steam Road Rollers and Traction Engines combined,

Which are made in sizes of 6, 10, 12½, 15, and 20 Tons weight, and both the Driving and Steering of them are under the easy control of ONE Man.

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They are specially recommended to Noblemen, Gentlemen, Borough and Road Surveyors, Corporations, Local Boards, Highway Trustees, Contractors, Road Makers, and others.

Specifications, with Prices and Testimonials, furnished on application.



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Delivered Carriage Free at all the principal Railway Stations and Shipping Ports in England, Scotland and Ireland.

No Lawn Mower Manufacturer keeps so large a stock of Mowers as is to be found at our London Establishment, Surrey Works, Blackfriars Road, where purchasers can select out of several hundred Machines, of Hand, Pony, and Horse Power, and have their Orders supplied the same day they are received.

The above Machines are Warranted to give entire Satisfaction, otherwise they may be returned AT ONCE, free of cost to the Purchaser.

N.B.—Those who have Lawn Mowers which require repairing should send them to either our Leeds or London Establishment, where they will have prompt attention, as an Efficient Staff of Workmen is kept at both places.

Garden Seats and Chairs, and Horticultural Implements of every description, Wire Netting, &-c., &-c.

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Editorial Communications should be addressed to "The Editor;" Advertisements and Business Letters to "The Publisher," at the Office, 41. Wellington Street, Covent Garden, Loadon, W.C. Frinted by WILLIAM RICHARDS, at the Office of Messrs, Brandury, Achiew & Co., Lombard Street, Precinct of Whitefriars, City of London, in the Country of Middlesex, and Published by the said WILLIAM RICHARDS, at the Office, 41. Wellington Street, Parable of St. Faults, Covent Garden, in the said Country.—SATURDAY, April 19, 1884.

Agents for Sucheder—Joint Harwood.

Agents for Sucheder—Joint Harwood.

CHRONICLE. **GARDENERS**

Established 1841.

No. 539.—Vol. XXI. (NEW SERIES.)

SATURDAY, APRIL 26, 1884.

Registered at the General Price 5d.
Post-office as a Newspaper. Post-free, 5½d.

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GRAND INTERNATIONAL POTATO
EXHIBITION will be held at the Crystal Palace, on
WEDNESDAY, THURSDAY, and FRIDAY, October 8, 9,
and 10, 1881, For schedules apply to
P. McKINLAY, Esq., Headley Lodge, Croydon Road,
Anceley, S.E.

ROYAL BOTANIC SOCIETY of MAN-FLOWER SHOW in the Town Hall, Manchester, on TUESDAY, the 29th inst. For particulars apply to the under-signed.

BATH FLOWER SHOW,
First Prizes: -Twelve Arzaleas, £9; twelve Stove or Greenhouse Plants, £12; fifteen Ornamental Foliage Plants, £63 twelve Rhodededproos, £3; isix Ornidis, \$33. The 2d and prizes in proportion. Many other classes for Plants, and Prizes for Cut Flowers, Fruit, and Vegetables. For Prize Schedules, apply to the Secretary,
BENJAMIN PEARSON, 14, Milsom Street, Bath.

POYAL BOTANICAL and HORTICUL-TURAL SOCIETY of MANCHESTER and the NORTHERN COUNTIES. The GRAND NATIONAL HORTICULTURAL EXHI-BITION of 1884 will open at the Gardens, Old Trafford, on MAY 30, NEXT, at 2P.M. ONE THOUSAND POUNDS IN PRIZES. For Schedules apply to the undersigned,

Royal Botanic Gardens, Manchester.

N.B.—Entries close May 23.

GRAND EXHIBITION of HARDY PLANTS, commercing on FRIDAY, May 3, and following days, mentioning on FRIDAY, May 3, and following days, and following

J. F. JOHNSON, Secretary.

HORTICULTURAL EXHIBITION, to be held at the BOTANICAL GARDENS, SHEF-FIELD, JULY 24 and 25. Price Schedules may now be obtained on application to Mr. J. EWING, Curator.

HREWSBURY GREAT FLORAL FÊTE, WEDNESDAY and THURSDAY, August 20 and 21. FUR HUNDRED POUNDS in PRIZES, open to 12 England. Twenty Plants, £25, £20, £15. Schedules and full rarriculars from Messrs, ADNITT and NAUNTON, Hon. Secs. Strewbary.

A BERDARE HORTICULTURAL SOCIETY and COTTAGGRS'SHOW.
The FRELIMINARY ANNOUNCEMENT.
THE FIRST ANNUAL FLOWER, FRUIT, and YEGF-TABLE SHOW will be held on THURSDAY August 28, Next. President: The Right Hon. Lord Aberdare. Suberious already promised over ONE HUNDRED POUNDS.
For Schedule of Prizes and full particulars, on or after May 5, to

LEONARD ACOMB, Hon. Sec. Aberdare, April 16, 1884.

PUTNEY and DISTRICT CHRYSANTHEMUM SOCIETY. The ANNUAL EXHIBITION will be held on NOVEM-BER 11. Schedules can be had on application to

JOHN MOORE, Hon. Sec. Richmond Nursery, Upper Richmond Road, Putney, S.W.

SQUELCH AND BARNHAM, Long Market, Covent Garden, London, W.C., to receive consignments of GRAPES, TOMATOS, CU-CUMBERS, STRAWBERRIES, and CHOICE FLOWERS.

S Q U E L C H AND BARNHAM, giving personal attention to all consignments, they are thus eoabled to obtain the HIGHEST MARKET PRICE.

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ACCOUNT SALES sent daily, and
CHEQUES forwarded week!
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BASKETS and LABELS supplied.

HOLLY for HEDGES, 12 to 15 inches, 25s.; 15 to 18 inches, 351.; 18 to 24 inches, 50s. per 100. Forest List, containing heights and prices of well-grown Quick, Ash. Larch, Spruce, Pines, Oaks, Underwood, &c., free. RICHARD SMITH AND CO., Nurserymen and Seed

Forest and Ornamental Trees and Shrubs.

THE LAWSON SEED AND NURSERY
COMPANY (Limited), Ediburgh, have an immease
Stock of the leading kinds of Seedling and Transplanted
FOREST TREES and SHRUBS, &c.—all in healthy condition and prices moderate. Special offers on application,

Hardy Evergreens,

BUSHY AUCUBA, LAUREL, RHODODENDRONS, HOLLIES, and other EYERGREENS.
Covering many acres. Splendidly rooted.
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HERBACEOUS and ALPINE PLANTS. Now is the season to plant and insure success. Write for R. H. VERTEGAN'S Pocket CATALOGUE, and make your choice from his unrivalled Collection.

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JAPANESE MAPLES, FREESIA REFRACTA ALBA, LILIUM WALLICHIANUM, rare
seeds (Alpines), from New Zealand.
PALMIST of New Excland.
ORCHIDS in Clower, &c.
NEW PLANT and BULB COMPANY, Lion Walk, Colchester.

PRIMULAS, from my first-class strain, strong plants, now ready for sending out, at 1s. 6d. per

dozen.

JAMES GILL, Spring Place Nursery, Horton Road, Bradford.

STRONG BEDDING GERANIUMS, Vesuvius, Madame Thibaut, Courted Britania vius, Madame Thihaut, Crystal Palace Gem, and others, strong stuff, 8s, per 100. Choice named Zonals, best, 16s. per 100, in pots. FUCHSIAS, splendid plants, in 48's for market, W. JACKSON, Blakedown, near Kidderminster.

FOR IMMEDIATE SALE, a splendid Stock of SPECIMEN PLANTS for Exhibition pur-poses. LISTS from J. C. PADMAN, Frovidence Nursery, Boston Spa, Yorkshire.

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CATTANEO, COMMISSION SALESMAN,
W.C., is speed to Refer to American Warter, Covent Garden,
W.C., is speed to RECEIVE CONSIGNMENTS of CHOICE
CUT FLOWERS in any quantities. Terms of application.

WANTED, choice cut Maréchal Niel and Nyphotis ROSES; also EUCHARIS, CAMELLIAS, STEPHANOTIS, GARDIENIAS, TÜBER ROSES, OR-CHIDS, Maidenhair FERN, &c.
A. CATTANEO, Flower Salesman, 44, Hart Street, and New Flower Market.

WISE AND RIDES, FRUIT and FLOWER SALESMEN, Covent Garden, W.C., have special facilities this season for the SALE of MARKET PRODUCE of the best quality.

BASKETS, BOXES, LABELS, and Directions for Packing forwarded upon application.

CUT BLOOM and MAIDENHAIR
FERN WANTED Weekly, from Private Gardeners.
Send sample, ar. 6d. worth, THURSDAY NEXT, addresed.
J. EDWARDS, Seedsmen and Florist, 9, Drury Hill,
Nottingham.

WANTED, GARDENIAS, in 16 size pots, good bushy plants. State size and price. -T. D. 1RVING, The Gardens, Sefton Park, Slough. WANTED, MARECHAL NIEL and NIPHETUS ROSE GRAFTS. Quote price and

quantity to The LIVERPOOL HORTICULTURAL CO. (John COWAN), Limited, Vineyard and Nurseries, Garston, near Liverpool.

WANTED, GOLDEN EUONYMUS.
State size, and price in quantities, for cash, 10
W. MILES, West Brighton Nurseries, Hove, Brighton,

SUTTON'S PRIZE LAWN GRASS SEEDS, DIPLOME D'HONNEUR, AMSTERDAM,

SUTTON'S PRIZE LAWN GRASS SEEDS. Special Gold Medal, Melbourne, 1880.

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New White Perpetual Flowering Tree Carnation.

OUISA ASHBURTON.—Freest bloomer
ever offered. Perplant, 3r. 6d. We are now booking orders
for this lovely white, delicately scented fimbriated Carnation, to
be sent out June 65, 1884. Further particulars free by post.
W. J. CROSS and STEER, Canal, Salisbury.

NEW ROSES of 1884.—The above are now ready—all the best varieties, Lists of which may be had on application. The plants are very strong and healthy, in fact better plants could not be wished for, certainly could not be KEYNES, WILLIAMS AND CO., The Nurseries, Salisbury.

SEEDLING OAK, 2-yr., 6s. per 1000; also LARCH, 3 to 5 feet; Spanish CHESTNUT, 2 to 6 feet; BEECH, 4 to 5 feet; SCOTCH, 3 to 4 feet, GEO. CHORLEY, Coaster's Norsery, Nidhurst.

SPECTIMEN HOLLIES.—Standards, on stems of various heights and of such kinds as Gold Queen, Milkmaid (Weeping), New Golden Weeping, Bronze, &c., 7s. 6d., 15s., 21x., 31s. 6d., 42t. each.
Handsome Fynnids of the above, 5s. to 21s.
RICHARD SMITH AND CO., Worcester.

POSES in Pots.—All the best New (1884) and Old English and Foreign sorts, from 18s. to 36s, per dozen, These world-kamed Roses cannot fail to give the greatest satis-faction. Descriptive LISTS on application. RICHARD SMITH AND CO., Worcester.

Two Acres of Daffodils.

BARR AND SON'S Grounds, Lower Tooting;
acrly soo varieties. Visitors admitted to inspect, TUBDAYS, THURSDAYS and SATURDAYS, from sow to May.

TIVE THOUSAND PELARGONIUMS to offer: in Bloom, roor, per root; in Full Bud, 8ss, per root; later, por, and 9ss, per roo. Really fine stuff, all in 3-meh ports. Cash or references from unknown correspondents. TURNER BROS. Naverymen and Florists, Green Hill Nursery, Alletton, Liverpool.

POLEMONIUM CŒRULEUM VARIEGATA, strong clumps, 6d. each, per dozen 4s., post and package free.
HOWDEN AND COMPANY, The Nurseries, Inverness, N.B.

CHRYSANTHEMUMS. — Strong hardy Plants, of all the new leading sorts. from 6s. per dozen, T. JACKSON AND SON, Nurseries, Kingston-on-Thames.

DANCRAIN AND SOM, NUMBERS, KINGSONDO-ITAINES.

PANCRATIUM CARIBŒUM, the best variety, large, white, fragrant flowers, 25r. per 100.

AMARYLLIS GRANDE, easily flowered, 25r. per 100.

ZEPHYRANTHES TUBENZATHA, white Sweet-cented flowers, 15r. per 100. The Track supplied.

THOSE CHRISTY AND CO., 125r. Fenchauch St., London, F.C.

FOR SALE, a fine three-quarter specimen LAPAGERIA ROSSA in fine health, would cover a large space of wall on roof.

JAMES BAIN, Brereton Nursery, Rugeley.

GRAPE VINES.—A fine stock in leading varieties, Planting and Fruiting Canes. Apply to FRANCIS R, KINGHORN, Nurserymao, Richmond.

SALES BY AUCTION.

Sale this Day, at half-past 12 o'Clock precisely.

SEEDLING CAMELLIAS from America, &c.

M.R. J. C. STEVENS will SELL by
AUCTION at his Great Rooms, 38, King Street,
19 o'Clock precisely, a consignment of about 450 Seedling
19 o'Clock precisely, a consignment of about 450 Seedling
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19 o'Clock precisely, a consignment of a consi

On view morning of Sale, and Catalogues had.

Wednesday Next.—(Sale No. 6646).

WEDORTED ORCHIDS.

M.R. J. C. STEVENS will include in his
Sale by AUCTION, at his Great Rooms, 38, King
Street, Covent Garden, W.C., on WEDDENSDAY NEXT,
April 39, a grand importation of CATTLEVA TRIANZE,
April 39, a grand importation of CATTLEVA TRIANZE,
bague varieties, and OUDNTOGLOSSUM ALEXANDRZE,
so lets of good imported ORCHIDS from Mersta, 27, Hersman & Co.

On view morning of Sale, and Catalogues had.

On view morning of Sale, and Catalogues had.

Highly Important Sale of Established Orchida,

M.R. J. C. STEVENS has received instructions from John Symonds Bockett, Esq. The Hall,
Stamford Hill, whose lease is now excired and the estate
required for building purposes at once, to SELL by AUCTION,
at his Great Rooms, 28, King Street, Covent Garden, W.C., on
WEDNESDAY, April 29, at half-past 12 of Clock precisely, the
REDNESDAY, April 29, at half-past 12 of Clock precisely, the
last the DORCHIDS. Amongst other grand things will be
last the DORCHIDS. Amongst other grand things will be
last the DORCHIDS. Amongst other grand things will be
last the DORCHIDS. Amongst other grand things will be
cattled to the Control of the Control of the Control
Cattleya Science, Lexila anceps Dawsoni, L. elegaos,
Cattleya Science, Lexila purpurata, and many other fine
varieties.
On view morning of Sale, and Catalogues had.

Choloe Established Orchids.

MR. J. C. STEVENS will SELL by AUCGarden, W.C., or THURSDAY, May r. at half-past 120 Clock
ORCHIDS, from the well-know collection of Challes Domana,
Esq., including many rare and valuable specks, amongst which
are the following:—
Cattleya Sanderiana
, Backhousiana
Angraccum sesquipedale
Oncidium cuntum decuma
Dendrobium nebile nobilius
Zygopetalum rostratum
Maddwallia Harryana Marshallii

Maddwallia Harryana Marshallii

Phaius tuberculcous
Epidendrum Wallisii Choice Established Orchids.

following:—
yev Sanderiana
Backhousiana
Backhousiana
Backhousiana
Backhousiana
Linii auceps alba
Linii

shallii Odontoglossum Krameri Cattleya aurea

Un view mcming of sale, and Catalogues had.

Thursday Next.—(Sale No. 6647)
CATTLEVA SPECIOSSISSIMA,
AUGULOA UNIFLORA.

M.R. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent
Garden, W.C., on THURSDAY NEXT, May 1, by order of
Mr. F. Sander, a very grand importation of CATTLEVA
SPECIOSSISSIMA. This is the Cattleya known as autumnamong which Dawgoni flowers; also are not all the conanong with Dawgoni flowers; also are not all the condition.

Condition.
On view morning of Sale, and Catalogues had. Important Sale of Established Orchids.

M. R. J. C. STEVENS will SELL by AUCTION, at bis Great Rooms, 38, King Street, Covent
Garden, W.C., on WEDNESDAY, May 7, at half-past 12,
Oclock presiety, the choice COLLECTION of ESTABLISHED ORCHIDS formed by W. Turaer, Esq., of Over Hall,
SIGNED ORCHIDS formed by W. Turaer, Esq., of Over Hall,
Valuable Specience; including fine plants of many rare and
valuable Specience; including fine plants of many rare and Winsford, Chesnie, included waluable species.

On view morning of Sale, and Catalogues had.

On view morning of Sale, and Catalogues had.

Cholee Collection of Nepenthes.

R. J. C. STEVENS has received instructions from Albert E. Ratcliff, Esq., of Edghaston, to SELL tens from Albert E. Ratcliff, Esq., of Edghaston, to SELL tens from Albert E. Ratcliff, Esq., of Selfpaston, 38, King Street, Covert Garden, O.C., of Selfpast, 19, Covert Garden, 1

The Down House Collection of Orchidge

The Down House Collection of Orchidge

N. J. C. STEVENS has been favoured

with instructions from Sir William Marriet, to Stept

by AUCTION, at his Great Rooms, 48, King Street, Covent

Garden, W.C., on TUESDAY and WEDDNESDAY, May zo

and zr, at half-past 12 o'Clock precisely each day, his wellselected with the greatest CRHIDS. The plants have been

selected with the greatest CRHIDS. The plants have been

during which time the inferior varieties have been several times

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cerve, and bothing cisposed of prior to Sale. Amongst other ce lings with personal continuous continuous care and continuous c

Flowering Orchids.

M.R. J. C. STEVENS begs to announce that take place on THURSDAY, May 8. Gentlemen desirons of ortering plants for this Sake will please seed particulars of same and later than THURSDAY, NEXT, May 1. Action Recommand Offices, 8, Ring Street, Covent Garden, W.C.

Tuesday Next.—Special Sale of Flowering Orchide.

MESSRS. PROTHEROE AND MORRIS

Will SELL by AUCTION, at their Central Sale Rooms,
67 and 68, Cheapside, E.C., on TURSDAY NEXT, April 29,
at half-past 2 o Clock precisely, over 300 lost 0 GRCHIDS, in
Flower and in Bud. Amongst them may be mentioned specially
flow the state of the s Cypripedium ciliolare Lælia Schilleriana rubra

of varieties of the following:
Odontoglossum Alexandræ,
several extra fine
varieties
, Pescatorei, in the way
of Veitchianum
, Halli
, Ruckerianum
, Coradooei

Oo view morning of Sale, Catalogues may be had of the Auctioneers, 67 and 68, Cheapside, E.C.—(Telephone No. 1809.)

Friday Next.

Taha Schilleriana rubra
, purpurata
Masdevallia trochilus
Vaoda tricolor
Oncidium uosiferum
Odoptoglossum sceptrum

Friday Next.

From Messrs. Fredk. Horsman & Co., Colchester.

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Plants healthy and well grown, in varieties of first quality, selected by

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100 STOVE or GREENHOUSE PLANTS (young plants), no yarieties, 425.; 100 Varieties, 625.
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OUR MAGNIFICENT COLLECTION, suited for Exhibition, and Decoration of Rooms and Dinner Tables. The colouring of the leaves of this group is of rare and exquisite beauty, it swarieties, for; stronger, 122.; and to include golden-leaved varieties in the collection, 161. and 121. per discopi. its earts for box. 79 varieties, 6, 5):ce, 347.

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NEW GOLDEN SPIGULA—the most beautiful goldencoloured plant for edging, and small beds, ribbon lines, &c.
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HOLLYHOCKS.—Fine named Hollyhocks, clean, healthy, and vigorcus; 18s., 24s. to 30s. per JOHN FORBES, Nuiseryman, Hawick, N.B.

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MAZALEA NIADAME VAN DER CRYSSEN, semi-double CORVPBA, AUSTRALES, good, 17 to CORVPBA, AUSTRALES, good, 17 to Cort. per doren, CRASS heads of bloom, 5r, per doren, catta sire, also, sea cort. per doren, per doren, catta sire, also, sea cort. per doren, per doren, per doren, per doren, per doren, catta sire, also, per doren, per doren, catta sire, also, per doren, per doren

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Seedlings from three best whites, large tubers, per dozeo 125. Producing fine decorative plants. Most useful for cutting. Free by Parcels Post.

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Golden, of all sires up to 10 feet. We have many thousands as Pyramids, Globes, Standards, 10 point of variety and size unequaled.

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NEW CATALOGUE of FERNS for 1884, now ready, with Engravings of New and Rare Varieties, prepared specially for this Catalogue. In the matter of Eritish Ferns, this Catalogue is declared by high authorities to be far superior to any other Trade List yet issued. Post-free 3

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BEAUTIFUL HARDY PLANTS in about 2000 of the finest species and varieties of the best kinds for garden decoration. All lovely, some fragrant; may be grown without a greenhouse, will bloom this year, all named some of proved merit. Catalogues with all particulars for a

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CARNATIONS and PICOTEES, many thousands well-rooted plants, last auturnus stayers, of the beautiful Show, Self and Clove varieties, all named. Lovely fragrant flowers of rich edged, others stightly pencilled, all lovely, fragrant, and useful for bouquets or garden. Show varieties, 12st, per dozen plants, Self and Clove varieties, 12st, per dozen plants, and and Clove varieties, 12st, per dozen plants, and Clove varieties, 12st, per dozen plants, and Clove varieties, 12st, per dozen plants, 12st, per dozen p

DYRETHRUMS, POTENTILLAS, DELPHINIUMS, a trio of the finest border plants known, all colours, bright, distinct, showy, blooming freely, useful for cutting, grand for the garden, easily grown; lovers of flowers only need to know them more to grow them in quantity. The finest sorts, Fyrethrums, ss. per dozen; Potentillas, ss. per PHIONES, PENTISTEMONS, PANSIES.—The gay and hardy Phlox, with its lovely flowers and fine spike, strong a-yrclumos, st. 6d, per dozen; annaller, st. per dozen. The beautiful Pentstemon, with its Gloxinia-like flowers, white, pink, passy, lovely in all its varieties, Show sorts, sr. per dzzan, Fancy warieties 5t. 6d per dozen, or 48 plants and clumps, 120 feach for 13d.

HERBACEOUS and ALPINE PLANTS. The finest kinds for the Borders or Rock Garden. We offer (as may be seen from the Catalogue) about 750 of the fines sorts, our aim being to discard the weedy, and grow the fine varieties. We can offer suitable sorts for hot, cold, dry, damp, suncy or shady positions—various varieties blooming almost every month in the year, interesting and instructive to the student from the diversity of forms, &c., and equally desirable to the lovers of a gay garden for their beauty. 12 varieties, 4x: 3g for 8x. 6x. 3y for 17x. 6x!, 100 varieties 3xt. 6xt, all named, For other. Collections and other Plants see Catalogue, free for two stamps.

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White, Scarlet, Crimson, and Rose, from cutting-pots, 6r. per rec, 5or, per acco, or from single pots, 100, per 100. 100 in 110 choice show sorts for 8r. Jackage included. Tenns cash.

CREEPERS for Walls, Trellises, &c., in great variety. By planting what is suitable an unsightly object may easily be made beautiful. Descriptive LIST and advice on application.

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SEAKALE for Forcing, and ASPARAGUS. SEAKALE, extra strong, 125. per 100; sec

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The above can be supplied in large quantities, and of first-

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W. M. PAUL AND SON respectfully invite INSPECTION of their very large collection of POT ROSES now in bloom.
To all interested in the forcing and general cultivation of Roses under glass a good opportunity is afforded of judging of the most suitable varieties for these purpose. When the suitable varieties for these purpose was suitable to the Creat Eastern Railway, about half an hour's field from Loadon.

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VERBENAS, White, Scarlet, Purple, Pink, and other varieties. ALTERNANTHERAS amenca, magnifica, zaropticides, major aurea, and versicolor grandis. COLEUS Verschaftelt and other varieties. HELIOTROPE Miss Nightingale, edition of the varieties. HELIOTROPE Miss Nightingale, 100, post, per roca, Ermen cash, continuing, st. &c., dp. per 100, oz. Per 100.

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NOTICE.—On and after MAY 1st., I make
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THE HORTICULTURAL SUPPLY
ASSOCIATION is the cheapet and best House in the
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Also the best and cheapest house for LOAM, SAND (coarse
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RAFFIA, GOR, per bushel; per truck of a tons, 535. The best
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DOARS SIAND, R. SAND, 12.6.d. per busnel; 122. 6d. per /2, 160; IEEE VELLOW EETCHWORTH LOAM, 12. per bushel, LEAF MOULD, 12. for bushel, DEAT MOULD, 12. for bushel, COMPOST for Potting or for Garden, 12. per bushel. SPHACEUM MOSSAY, 6d. per blag. PAPER. Universal MANUKE. The best yet offered—a very powerful Fertiliser, 328, per cwit.

Fertiliser, 13t, per cwt.
FERUVIAN GUANO, as imported, 18t. per cwt.; 56 lb.,
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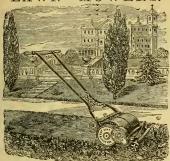
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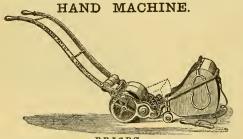
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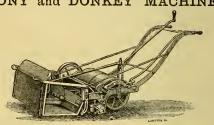
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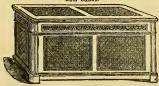
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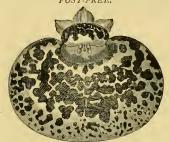
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Gardeners' Chronicle.

SATURDAY, APRIL 26, 1884.

PRIMROSES.

THE Narcisso-maniacs have had their fieldday, as we duly recorded at the time. Some devotees of the Primrose cult had theirs on the 19th., but however excellent their motives, we fear they did not advance the knowledge of Primroses beyond the modicum possessed by Peter Bell, of established renown. Poor Peter, we fear, is not held in much esteem by the members of the National Auricula Society, Southern Section, and most assuredly the earnest members of that body would scorn the idea of degrading the object of their predilection into a political badge. Long may they continue in that frame of mind. The culture of flowers and political partisanship have nothing in common, save that the devotees are liberal in their practice, and conservative in their principles. While they are generous and free-handed, they are apt to resent innovation upon the "properties," as an attack upon the British Constitution, whatever that may be. In any case, the worshippers carried out their "function" at South Kensington on Tuesday last, as the Daffodil lovers did theirs a week or two previously. The record of their proceedings is given in another column. In this place we desire to call attention to the very interesting collection of species of Primula shown by Mr. Llewellyn and others, and trust that the excellent example set by those gentlemen will be followed on other similar occasions. There is no need for us to enlarge upon the beauties of Primula Sieboldi, the elegant drooping flowers of P. sikkimensis, the chaste purity of P. nivalis, the lovely tint of P. rosea, or the striking appearance of P. denticulata-for all these are, it is to be presumed, well known to plant lovers and growers. Our object now is to show that our resources are not yet exhausted-that many more remain to be introduced, some of which will bear comparison with any now in our gardens, and possibly are destined, by the skill of the gardener, to play a large part in the gardens of the future. illustrations at p. 545, have for the most part been made from dried specimens by the skilled pencil of Mr. Fitch, but we introduce them here with the view of stimulating inquiry and pro-moting their introduction. Most of the species in question were described by Dr. Watt in the Fournal of the Linnean Society a few years ago, and these, as well as others, were illustrated by Miss Smith in that publication.

Beginning at the upper left-hand corner of our illustration, the large-flowered species is P. ELWESIANA, a Sikkim Himalayan species, with entire oblanceolate leathery glabrous leaves and solitary hairy flower-stalks, each bearing a solitary large purple flower, having much the appearance of a single Dianthus, though, it need hardly be said, the resemblance is quite super-ficial. To the right of this is P. GAMBELLIANA, a species with orbicular, cordate, toothed, glabrous leaves, on long stalks. From the centre of the tuft of leaves rises a slender shaft, bearing at the top a simple umbel of purple flowers, in shape like those of the common Primrose, but with a more open

throat. This is also a native of Sikkim Himalaya.

Beneath P. Elwesiana, towards the centre, is P. PULCHRA, a species with oblong lanceolate crenate glabrous leaves, glaucous on the under surface, and raised on long stalks. The purple flowers are borne in simple umbels at the end of a simple flower-stalk. This also is from Sikkim.

To the right, below P. Gambelliana is the very striking P. UNIFLORA, a Sikkim species with a tuft of long-stalked ovate toothed glabrous leaves, from amid which rises a single flowerstalk, bearing at the top one, or sometimes two, sessile horizontal flowers, of a pale lilac colour. No other species, we are told, has flowers so large in comparison with the foliage. resemblance to Shortia galacifolia will be seen by those who refer to our figure of this rare species in volume xv., 1881, p. 596.

To the left, again, beneath P. pulchra, is the low-growing P. SAPPHIRINA. In this the tusted leaves are not more than a quarter of an inch in length, obovate, coarsely toothed. From their centre rises a slender stalk, bearing a simple umbel of small pale blue flowersvery elegant little species," collected in the Lachen Valley by Sir J. D. Hooker.
Below this, in the lower left-hand corner,

is P. MUSCOIDES var. TENUILOBA. leaves are something like those of the common Daisy, but smaller. The flowers are solitary, sessile; the corolla lobes are deeply two-lobed. The colour of the flowers is not stated. Next to it to the right is P. MUS-COIDES, "much the smallest of the genus forming moss-like tufts among the roots of creeping alpine plants," and in the centre at the bottom is P. TENELLA, "a remarkable little species, very unlike any other," native of the Chumbi Valley between Sikkim and Bhotan. Its leaves are obovate or trapezoid, tapering to a slender stalk, and from the centre of the tuft springs a solitary flower-stalk, with a single bluish-white flower nearly an inch across the limb. Lastly, in the lower right-hand corner is P. SOLDANELLOIDES, a small species, with ovate, wedge-shaped, crenate leaves; the flower-stalk is thread-like, and bears a solitary nodding white flower, with a long cylindrical tube and bilobed segments. This, like all those above-mentioned, is a native of Sikkim.



TULIPA GRISEBACHIANA, Pautoesek, in Oester. Bot. Zeit., 1873, p. 265.

The following is a description, drawn up from a living plant which has just flowered at Kew, of this new Tulip. It is a native of Gliva, near Trebinje, in the Herzegovina, and we are indebted for it to Herr Leichtlin. I should class it as a variety of T. sylvestris; bulb middle-sized, ovoid; outer tunics brown, glabrous, stem a foot long, one-flowered, lacte, very glaucous; leaves, three, placed near together below the middle of the stem, lorate, very glaucous, erect, deeply channelled down the face, quite glabrous, 6-7 inches long, the outer 4 inch broad, the inner 4 inch, flower faintly scented, erect, oblong-infundibuliform, an almost uniform pale lemon-yellow, under 2 inches long. Peduncle erect, overtopping the leaves; perianth segments, all acute, the outer oblong-lanceolate, ½ inch broad at the middle, only faintly tinged with green, especially towards the pubescent tip and base; inner twice as broad, ovate-spathulate, bright lemon-yellow with a slender green keel. Stamens, bright yellow, i inch long; filaments hairy at the base; ovary cylindrical-triquetrous, stigmas minute. 7. G. Baker.

SACCOLABIUM MINIATUM (Lindl.) CITRINUM, n. var.

An old acquaintance of mine. I had it as early as December, 1867, from my then excellent correspondent, Mr. Wentworth Buller, indicated as coming from the Philippines. I wrote on my label " Philip. (?)." No doubt, however, my correspondent There are now very fine inflorescences at was right. hand, which show very narrow organs in the dried state; when, however, softened they are like what we are accustomed to see. The fine inflorescences are very rich, dense, widely spread, and having leaves with very strong sharp teeth at the top. It is said to have dark stripes on the leaves, and lemon-coloured flowers with a dark centre (mouth of spur?). It was collected by Mr. Röbelen, and kindly forwarded by Herr Consul Kienast-Zolly, of Zurich, whose skill in growing Orchids is appreciated even higher by orchidists. H. G. Rchb. f.

NOTES FROM BROCKHURST.

NARCISSUS (CORBULARIA) BULBOCODIUM. your issue for October 13 last, p. 460, I referred to the fact that the hardiness of this Narcissus, in our climate, had been doubted; and pointed out that after flowering the bulbs broke up into bulblets; and as few of these flowered the following season, it was probably this that gave rise to the idea, that the plants did not survive. I carefully observed the bulblets thus arising from a clump of this Corbularia, which has been growing now out-of-doors for four years, and I find that at the end of the second year they bloom again. If therefore left undisturbed, the clumps of this Narcissus will reappear, and flower again plentifully in two years. Mr. Smith, of Guernsey, told me that these small bulblets are planted out in Guernsey, after the Potato crop is gathered in, and the ground is thus used a second time in ripening the Corbularia bulbs for the English market. It is these ripened bulbs that we buy in the autumn: they bloom plentifully, and then break up into bulblets, as thus described. they require in our English gardens is a sandy soil, and sunny position, with shelter from cold winds.

THE INDIAN PRIMULAS, and more especially P. Cashmeriana, have been unusually fine with us this season; one clump has thrown up a dozen stout scapes from I to 2 feet high, and each bearing a globular truss of flowers of great beauty. I find they do best with a north aspect on a sloping bank, but where they get a moderate amount of sunshine. The plants growing in our bog beds are not so fine as those in strong but sandy soil, and well manured. Our best clumps are over four years old, and they increased fast by the root growths.

RANUNCULUS AMPLEXICAULIS, a difficult plant to keep, is now blooming beautifully with the Primulas, in the drier situation where it has now lived and flourished three years. In the bog-beds it is all lost,

PRIMULA PUBESCENS is generally credited as being one of the wild alpine forms, from which our show Auriculas bave been raised, and we have now a plant in flower, gathered by Gusmus in Transylvania, which confirms this. Its flower is large, with a good centre; and its colour a rich crimson-maroon, exactly resembling the well-known self Auricula Lord of Lorne. With this flower before us it is easy to see whence our "self" Auriculas emanated. P. Sieboldii, both in its cultivated and in its wild form of P. cortusoides, is a capital spring flower. Even the choice varieties sent out by Mr. Dean four or five years ago, are spreading freely in our wood walks and upon the rockeries. The hybrids raised by Mr. Brownhill of Sale, some years ago from P. viscosa and our show Auriculas, is far better than any true Auricula for gardening. Its dwarf habit and plenteous flowering derived from P. viscosa, added to the rich purples and pinks derived from the Auriculas, make them very showy. The attention of florists should be turned in this direction.

The varieties of Anemone nemorosa are especially lovely, and they grow well in sheltered situations and spread freely. The large Irish form is quite twice the size of our English wood Anemone, and has almost a double row of sepals, the outer sides of which are The variety Robinsoniana has a blue shade, and the double form, A. nemorosa, fl. pl., has its centre fitted with small narrow petals. Mr. Barr lately sent me a nemorosa bracteata, which is both pretty and curious. Here the sepals show an inclination to resume their green form, but are split up into narrow segments of green, edged with white; and within which is a close boss of narrow petals, as in the centre of the double wood anemone. These

cannot be the result of the conversion of the stamens into petals, as the stamens still appear in a ring of yellow, with a small green dot in the centre. is a most interesting flower and will form a good subject for a jecturer on botany. [Figured in De Candolle's Théorie, many years ago. ED.] There is another Anemone of this class which in my opinion is the prettiest of them all, A. trifoliata, native of the Alps. It resembles our own, but has three-lobed leaves, and its flower is whiter and of more substance. It also comes a little later. The variety of Anemoue blanda, sent out by Messrs. Backhouse this year, is far superior to Froebel's. It is larger and much deeper in colour; you generally get only a large form of appennina for blanda, but the true plant is vastly superior to this. A ranunculoides, the yellow form, should have a passing notice. It grows well in the wood, and spreads there in shady situations.

ARNEBIA ECHIOIDES is now in flower for the first of its three times of annual blooming. Of the Androsaces, pactea and sarmentosa are now in bloom, and of the Saxifrages several of the cordifolia or megasceas, S. [Wallacei, and S. Lindesiana; the latter is one of the very best of its class. Lychnis alpina is also in bloom. We are quite a month earlier than usual, but the cruel north-east winds which have prevailed for ten days, with frequently 12° frost at night, have done immense damage. I never saw the tall shrubs so cut about, and in many cases we have Hollies and other exposed shrubs quite destroyed, and many more disfigured. The young growths in the herbaceous borders are everywhere nipped, and the few remaining Daffodils are shrivelled up. W. Brockbank, Brockhurst, Didsbury, Feb. 21.

GINGER BEER PLANT.

THE Editor of the Gardeners' Chronicle has several times been requisitioned by correspondents (mostly anonymous) for a scientific description of the "Ginger Beer Plant." The correspondents want to know its botanical name and native country. The writer of this note has also been tormented weekly, almost daily, on the same subject for two or three years. Every one has been asking him for the "regular Latin or Greek name" of the "Ginger Beer Plant." Benevolent old ladies, clergymen and officers of the Blue Ribbon Army, have called upon him, or written for a scientific explanation, hoping to make the "Ginger Beer Plant" a boon for the poor. One person wished to feed paupers with it; another hoped by its means to knock all the publicans on the head; a third to send it in barrels for the army in the Soudan. When such persons have been told it is merely a form of German yeast they have turned away disappointed and disgusted. Something more must evidently be done for this rum shrub, of which I have recently had applications for slips, rooted cuttings, and seeds.

The last letter sent to the Gardeners' Chronicle was to this effect:—"I cannot learn anything more about it than that it is an American plant. Cannot find out where it is procured—only how to make it. Empty the contents of the small bottle into the wine-Empty the contents of the small bottle into the wine-bottle. Bruise about half an ounce of ginger, two table-spoonfuls of white sugar, put in a jug, pour boiling water over it, let it stand till nearly cold, then put the plant in the bottle of ginger, sugar, and water. Cork it tight, and when it begins to ferment the cork will filly out. The plant will grow if fed every day, and soon be enough for two bottles. It is best to empty it once a week into a pan and wash it with cold water, then put it in the bottle again."

To the unaided eye the Ginger Beer Plant looks To the unaided eye the Ginger Bear Plant looks tike a lump of pasts, and when placed under the microscope it is seen to consist of more than one of the Yeast fungi, in a mucilaginous medium. It belongs to the group of fungi termed Saccharonyces, of which there are many species, the one used for beer being S. cerevisite. Mr. Berkeley, Mr. Hoffmann, Mr. Huxley, and many other gentlemen, Psitish and foreign, have written about yeast in its different forms and conditions. The "Ginger Beer Plant" like all other yeast fungi, excites fermentation in sweet solutions and sets free carbonic acid gas. The carbonic acid gas formed

free carbonic acid gas. The carbonic acid gas formed in the process of fermentation at length causes the cork of the ginger beer bottle to fly out as a sign of maturity.

As all the correspondents insist on this "American plant "being a new species I propose to humour them by calling it Zingibeerophora spumacephala! W. G. Smith. [Mr. Smith favours us with a Latin description which, to avoid possible perplexity, we omit. Ep.]

"MEETING HORTICOLE."

THE first of the meetings held under the auspices of the Chambre Syndicale des Horticulteurs Belgee. took place, as we announced, at Ghent on April 7. The jury was divided into sections:—Section 1— President, M. J. Lioden, Brussels; Secretary, M. Lubbers, Brussels; MM. A. Van Geert, Ghent; and A. Peeters, Brussels. Section 2-President Count Henricourt de Grunne, President of the "Flora" Society, Brussels; Secretary, M. Vict. Cuvelier, Ghent; MM. L. Desmet and Ch. Spae, of Ghent.

Certificates of Merit were awarded to the Compagnie Continentale for Calamus Lindeni, Alocasia Dendrobium thyrsiflorum album, Vricsea heliconiodes.

To M. Louis Van Houtte, for Azaleas Comte de Paris and Souvenir du Prince Henri.

To M. C. Vaylsteeke, for Odontoglossum guttatum

splendidum, and O. crispum fastuossum.

To M. G. Pynaert, for Begonia olbia. To M. Paul Deschryver, for Azalea punctulata,

fl.-pl. A Cultural Certificate to the Compagnie Continentale, for a fine specimen of Masdevallia Lindeni,

with fifty-eight flowers.

Honourable mention was awarded to M. L. Desmet for Clivia miniata eminens, Asparagus comorensis, Athyrium Goringianum tricolor, Anthurium Scherzerianum macrospathum.

To the Compagnie Continentale for Gynogramma schizophylla, var. gloriosa, and Odontoglossum triumphans splendens.

To M. Desmet Dudivier, for Aralia rotunda.

To MM. Jakoh-Makoy, for Kerckhovea floribunda. To M. A. Van Geert, for Odontoglossum Alexandræ. var.

To MM. Deshois et Co., for Begonia gogoensis. To M. C. Vuylsteeke for Odontoglossum Wilcke-

anum, O. mulus, tincticulatum (sic), and hebraicum To M. L. Van Houtte, for Azalea souvenir du Duc d'Albany, and Baron Nathaniel de Rothschild.

To M. Desmet, for Daphne genkwa, and Pinguicula caudata.

To M. Alexis Dallière, for Coleus, Berceau de Venus (for the peculiar form of the leaves).

Some other plants were not adjudicated upon, a wish being expressed that they should be shown again when further developed. The meeting was very successful, as we learn from the Illustration Horticole, twenty-five of the nurseries of Ghent being represented. The next meeting will be held on the first Monday in May. As a matter of course members of the jury take no part in the discussion concerning, or in the awards made to the plants exhibited by themselves, and M. Linden, as interested in the Compagnie Continentale, took no part in the deliberations concerning the plants exhibited by the Company.

THE PROPAGATOR.

AT the present time, and whenever stout healthy cuttings can be got for the next month or six weeks, all those useful plants which are so much needed for winter-flowering require attention, and, like most other matters connected with the raising of plants for a special purpose, it must be attended to in the proper season, or the flowers will not be forthcoming when they are wanted. Among the best plants for winter flowering which require much the same treatment are Poinsettia pulcherrima, Euphorbia jacquininæflora, Eranthemum pulchellum, E. purpureum, Scutnellaria Moccipiana, Sericographis Ghiesbrechtii, Thyrsacanthus rutilans, Centropogon Lucyanus, Libonia floribunda, L. Penhrosiencis x, &c. These all require treating as cool stove plants while growing on and until they flower, but afterwards they last in perfection longer in the conservatory or when used for indoor decoration, and hence their value as decorative

Cuttings of those plants enumerated and of all of a like habit should be taken off (in many cases cuttings with what is called a heel are best) and inserted into cutting pots and placed in a close case until rooted. The cutting pots in this and in all other cases are better made up the day before, well watered, and left to stand until the next day before the cuttings are inserted; the cuttings will then not require watering for two or three days, and a sufficient time will then have elapsed to allow of the fresh cut wood sealing over. It is a mistake to water cuttings or grafts as soon as they are put in; with very free things the bad effect may not be visible, but with difficult plants it is a matter of great importance.

When the c: tings are well rooted they should be potted off three in a 60-size pot, and afterwards potted on as they require it into large 48's and 32's, special care being taken the whole of the time to keep them clean and free from insects. When well established these plants succeed best in a warm close greenhouse, and are even better prepared for their winter display by being placed in a cold pit during the latter part of the summer, care being taken not to leave them there too long. T. O.



THE SEASON.

[MR. GLAISHER favours us with the following remarkable particulars as to the temperature of the past quarter at Greenwich. ED.]

The mean temperature of January was 43°.9, heing 7°.4 and 5°.3 above the averages of 113 years and forty-three years respectively. Back to 1771 there have been but only two instances of a mean temperature for January being as warm as 43°.9, and in 1796, 45°.3; and 1834, 44°.4.

The mean temperature of February was 41°.9, being

3°.2 and 2°.4 above the averages of 113 years and forty-three years respectively. Back to 1771 there have been twenty-four previous instances of a mean temperature being as high as 41°.9, viz.—

· · · · · · ·	 	P 11.12	 421		
1775	 41°.9	1849	 43°-9	1867	 41.7
1779	 45 3	1848	 43 4	1848	 43.0
1794	 44 7	1849	 43.2	1869	 45.43
1800	 44 4	1850	 44 7	1871	 42,4
1817	 42° 6	1856	 42 0	1872	 44 8
1822	 43°-3	1850	 43°-1	1877	 43 .5
1825	 42,2	1861	 42 .1	1878	 42.2
1833	 42°.4	1863	 42°-1	1883	 42°.6

The mean temperature of March was 44°.5, bein 3°.4 and 2°.8 above the averages of 113 years and forty-three years respectively. Back to 1771 there have been eleven previous instances, viz., in

1777 · . 44°.6 1779 · . 47°.0 1780 · . 49°.2 1815 · . 45°.0 1822 .. 47° 3 1830 .. 45° 8 1841 .. 40° 2 1842 .. 44° 9

The mean temperature for the quarter ending March The mean temperature for the quarter ending Maren was 43°.4, being 4°.7 above the average of 113 years, there being only three instances of a mean temperature of a quarter as high as this, viz., 1822, 43°.5; 1846, 43°.6; and 1872, 43°.6.

The mean temperature for the quarter ending December, 1883, was 44°.9, there being thirty-one instances of a warmer temperature:—

1793		45°.3	1832	 45.8	1864	 45°.0
1795		46°.3	1833	 45 - 5	1865	 46°. I
1795 1806		48.5	1834	 45°.2	1866	 46°.2
1811		46°.4	x843	 45°.2	1867	 45 9
1818		47°,2	1847	 47° - 5	1868	 45 - 1
1821		47 4	1848	 46° 5	1872	 45 3
1822		45°.5	1852	 48".1	1875	 40°.4
1821		45°.0	1851	 45".6	1876	 49°.0
1827		45 .9 45 .8	1862	 45°.6	1877	 45°9
1828		46,2	t863	 46".8	1883	 44 9
1821	- 11	47 . 1	*5	 4	3	

The mean temperature of the six months from the mean temperature of the six months from October, 1885, to March, 1884, was 44.2, being 3° above the average of 113 years, there being six instances only of a temperature as warm or warmer, viz., 1819, 44°, 3; 1822, 45°, 5; 1834, 44°.2; 1846, 44°.7; 1849, 44°.2; and 1877, 44°.6.

TEMPERATURE, 1884.

_	JAN	UARY.		FEBRUARY. Day		M			
Day of Month,	M. R.	Departure from Aver- age.	Day of Month.	M. R.	Departure from Aver- age.	of Month.	M. R.	Departure from Aver- age.	
1 .	34.0	- 32	T	45.9	+ 7-3	1	35 8	- 4.5	
2	38.4	+ 1.5	2	38.8	+ 0 1	2	37 4	- 3.0	
1 3	46.4	+ 9.7	3	36.0	- 2.8	3	37-3	- 3.2	
4	47.6	+11.0	4	45-3	+ 6.4	4	45 4	+ 49	
5	47 I	+10.6	5	45-5	+ 6.5	5	42.2	+ 1.7	
6	48.0	+11.6	6	41.4	+ 23	6	41.6	+ 1.1	
7	43 6	+ 7.3	7	38.9	- 0.2	7	41.3	+ 08	
8	41.5	+ 53	8	41.7	+ 26	8	41.8	+ 1.3	
9	46.6	+104	9	47-5	+ 8.4	9	43 7	+ 3-2	
10	46.6	+10.3	10	42.6	+ 3.6	10	43-4	+ 28	
11	416	+ 5 3	11	47.0	+ 10	11	41.0	+ 03	
12	38.6	+ 2.2	12	43.8	+ 4.9	12	47-3	+ 6 5	
13	41.7	+ 5-3	13	49.8	+109	13	48.8	+ 7.8	
1;	45 0	4.85	14	48.3	+ 9.5	24	51.8	+ ro.6)
13	46.3	+ 98	15	39.0	+ 0.3	25	56.5	+15.1	
16	40.7	+ 4.0	15	36 š	- 22	16	55-5	+14.0	+130
17	40.7	+ 3.9	17	38 9	+ 0.2	17	518	+13.2	
18	42.4	4-55	18	36.8	- 20	18	53-9	+122)
19	42.6	+ 5.6	19	42.9	+ 41	19	48 0	+ 6.3	
20	44.7	+ 75	20	48. I	+ 92	29	45-3	+ 3.6	
21	46.4	+91	21	46 3	+ 73	21	440	+ 22	
22	48.8	+114	22	45.5	. + 6.4	22	43.0	+ 1.1	
23	47-9	+ 10.4	23	44-1	+ 4.9	23	45-3	+ 35	
24	40.0	+ 2.3	24	43.0	+ 37	24	42.8	+ 0.7	
25	428	+ 5.0	25	39 9	+ 0.4	25	40.2	- 21	
26	42.0	+ 4.1	26	39-7	0.0	26	49-4	- 2.1	
27	37.2	- c.g	27	. 37-5	- 2.4	27	38.9	3.8	
28	38.8	+ 06	28	34,2	- 5.9	28	39+7	3 3	
29	47.7	+ -9 4	29	36.6	- 3 6	29	41 5	- 18	
.30	49.5					30	44-3	+ 0.6	
31	47.9	94		••••		16	47.0	+ 3.0	

The following calculations will show the departure from the average for the first fifty-seven days, followed by the corresponding figures for the next six, twenty-one, five, and two successive days, respectively :-

January 1 to February 26, 57 days 57)+2878

+5.1 January 1 to 31, -4.1+1991 February 1 to 26, -7.2+1000 -11.2+2991 February 27 to March 3, 6 days. 6)-22.6

March 4 to March 24, 21 days. 21)+112.7

+ 5.4 March 25 to March 29, 5 days: 5):3.1

> - 26 March 30 and 31, 2 days, 2)3.6 + 1.8

BOUGAINVILLEAS.

THESE handsome plants in some places are found to be rather shy in blooming, so that it may be of use to describe a method of treating them which involves the least possible amount of trouble and cultural skill, and yet never fails to bring an abundance of bloom. The usually adopted warm-house method of growing the plant will afford a great quantity of vigorous growth, but too often few flowers. This unsatisfactory result arises from giving the plants an exciting temperature at all times, combined generally with a great deal of shade, two conditions that are fatal to good flowering. Shading is very greatly in use now, since the stove is in many instances almost filled with shade-loving foliage plants to the exclusion of a great many flowering species; in fact, the two are incompatible in one and the same house. The Bougainvilleas will flower in the stove, but they demand exceptional treatment; they must have plenty of sunshine to mature the wood, and they require a thorough and a long rest in a lower temperature, two conditions only attainable when the plants are growing in a pot or other receptacle, but not when planted in the hothouse border. If they bloom in such a place when planted out, this result is only gained after the lapse of several seasons, and when the roots have quite filled the allotted space, and become, as it were, root-bound, and then only when the other essentials have been attended to. But strong plants put into a not over-rich border on the sunniest part of a greenhouse wall, will flower beautifully in a season or so after planting out, the flowering season extending from July to the end of October. The other noteworthy points of treatment being cool rest without any water, from November to March, if the border is deep and capacious; early winter pruning and spurring back; and at this season the shoots should be securely fixed with ties or shreds, as they will be called on to carry a considerable weight of flower and leaf in the ensuing summer. In the growing period the border will require copious watering from time to time, as appears requisite, and the top must have all the sun and light it is possible to Ventilation should be given freely, but it is found better, where practicable, not to allow the air to come in direct contact with the plant : therefore it is a good plan to put it at the end of a structure, where some of the ventilators or lights can be allowed to remain closed. With these leading directions of management, there should be no difficulty in bringing them to flower on pot-grown plants in a cool house, the lengthening and retarding of the blooming season being quite a matter of early or late starting. Planted out with an almost unlimited root-run, there is no plant less fastidious, for after exhausting the soil in which it was originally planted the roots will, if not prevented, wander among the rubbish with which the interior floor of a greenhouse is made, with no great benefit to its blooming, as it will then be liable to rot from overmuch water and the cold ungenial soil, or it will not be possible to bring about the proper state of rest, so that restricted borders will be found to be the best.

ARTOTROGUS.

In the pages of the Gardeners' Chronicle at different times for nearly forty years a complete record has been published of the gradual advance of knowledge in reference to the Potato disease. It is, therefore, known to most of the readers of this paper that Dr. Rayer, in the first years of the Potato disease in France, discovered bodies in spent Potatos not to be distinguished from the resting-spores of Peronospora. Dr. Montagne termed this fungus Artotrogus hydnosporus. He doubtlessly guessed at its true nature, as is indicated by the name he gave it. Artos is Greek for bread, and tregos stands for eating or consuming. Dr. Montagne had in view the fact that this Artotrogus (like the Peronospora) consumed the Potato; hydnosforus simply means spiny-spored. The Rev. M. J. Berkeley, in 1846, with lar-reaching knowledge, referred these bodies, called Artotrogus, to one state of the Potato fungus itself.

When, in 1875, I lighted on the ogonia, oospores or resting-spores of Peronospora infestans attached to the mycelium of that fungus, I was surprised and pleased to find that my ogonia exactly agreed in size with the Artotrogus, that the mycelium was septate (consisting of jointed threads), and that the

male organs or antheridia were often borne on threads, which were distinct from the threads that carried the female organs, oogonia, or resting-spores,

Professor A. de Bary, of Strasbourg, when he criticised these facts in the Fournal of the Reyal Agricultural Society, vol. xii., for 1876, said, in reference to Artogrogus, at p. 257, "There is not sufficient evidence to prove that they are sexual organs or oogonia. There is no reason whatever to consider them as belonging to the Potato fungus, unless we base it on the fact that I (!) found them close to that fungus in course of experiments in search of oospores." On p. 256 he says, "They were always restricted to those regions which were occupied by the Phytophthora (Peronospora) mycelium." At p. 260 Professor De Bary objects to my illustration of the antheridium arising from a thread distinct from the congonium; he says, such cases are "at least a great rarity, if, indeed, they ever occur." On p. 262 he objects to the septent mycelium, and more than once amusingly refers to my oogonia as "bladders."

This was Professor De Bary's "treatment of the oospore question" in 1876 (see *Gardeners' Chronicle*, December 15, 1883, p. 752).

Now let us turn to a more recent "treatment of the osspore question," also from the pen of Professor De Bary, and found in the Beitrage sur Morphologie und Physiologie der Pilze, Von A. De Bary und M. Woronin.

In plate 1 the Professor's latest views are given. I have reproduced in Fig. 105 one of his latest illustrations of Artotrogus hydnosporus, Mont. The engraving shows the Artotrogus in actual contact with an antheridium, A; the autheridium has thrust a thick fecundating tube, B, right through the outer wall of the Artotrogus. This illustration is a confirmation of the Correctness of Mr. Berkeley's original views and of my own, and entirely overturns the whole of De Bary's own criticism of Artotrogus as published in the Journal of the Royal Agricultural Society. It must



FIG. 105.—ARTOTROGUS AS A TRUE OOSPORE, AFTER
DE BARY.

be noticed also that the supporting thread of the oogonium at C is perfectly distinct and free from the supporting thread of the antheridium at D, precisely as I described it in the Gardeners' Chronicle, although Professor De Bary in his criticism doubted (in 1876) whether, in Nature, such a state of things could ever exist. In fig. 22 of De Bary's illustrations the mycelium is shown unusually septate, again confirming my original observations.

In the new description it is stated that the Artotrogus was taken from Lepidium, a cruciferous plant, and it is not likely that the fungus of the Potato disease would grow on Lepidium; although if it did, it would not be so wonderful as the case reported upon by Mr. George Murray of the Cabbage Peroosopora growing on Melons, see Gardeners' Chronicle, June 16, 1883, p. 768. The fact is the Artotrogus, now correctly illustrated by Professor De Bary, is probably not A. hydnosporus at all, but the second species of Artotrogus also illustrated by Professor De Bary, is probably not A. hydnosporus at all, but the second species of Artotrogus also illustrated by Professor De Bary, is probably and found by Mr. C. Edmund Broome in 1849. It is peculiar to cruciferous plants, is illustrated in Gardeners' Chronicle for November 17, 1883, p. 625, and is the resting-spore of Peronospora parasitica. Every intermediate stage occurs between the perfectly smooth and the echinulate forms, as described under A. hydnosporus by Montagne. It is, perhaps, curious that Professor De Bary has found these bodies in the cotyledons of Lepidium, still Peronospora often grows inside plants without fruiting outside. Practical men sometimes detect incipient Peronospora in Potato plants by the putrid odour some days before the fungus shows itself outside the foliage. W. G. Smith.

VENTILATION BY SUN-HEAT, — M. Dumesnil has introduced a plan of ventilating unbeated frames by inserting ventilators along the front, which can be opened or closed at will. In one corner at the back a pipe is fixed like a chimney. The lights are kept fixed. The heated air escapes by the chimney, fresh air being admitted by the ventilators in front. It is alleged that shading and opening and closing the frames, except for watering purposes, may thus be dispensed with.

PLANT APPROPRIATORS.

A WELL-TIMED protest against the alas! very rapid clearing of our woods and hedgerows of Ferns, Primroses, and other favourite wild plants, has just been made in the columns of a daily paper, and none too soon. At the present rate of clearance some localities will soon be utterly despoiled of all wild plants worthy of regard, and we shall have left to beautify Nature just her weeds, and nothing more. The protest against the wholesale destruction of Ferns is peculiarly needful, because these are not the creatures of a year or two, and once removed it is long ere their places are occupied by others—if, indeed, new ones ever have the chance to get established. The trade may be to some extent responsible for this wholesale destruction, just as it is for the now almost complete disappearance from many districts of the Dog Rose; but the chief offenders, no doubt, are those peripatetic plantcollectors and hawkers who, with hamper slung over the back, trudge many weary miles in search of marketable plants, and get them up somehow with little enough of soil or roots, selling them to credulous residents in our town suburbs, who find to their cost that within a year their purchases have died. How to check this wholesale plundering of woodlands is a problem that can only be solved by landowners or local authorities. Stealing plants from a hedgerow or wood, whether enclosed or not, should be made a felonious act, and were a few convictions to follow, no doubt the horde of plant-plunderers who now infest the kingdom would soon disappear. be a grave misfortune were the institution of Primrose leagues, or other forms of floral worship, to result in the speedy extinction of the flower to be beatified; and whilst it is to be hoped that Primrose worship may soon fall into desuetude, it is equally to be desired that no other of our beautiful wild flowers may fall a victim to any political or national craze. Wild flowers may well exclaim, "Save us from our friends ! "

COLONIAL NOTES.

THE following letter has been banded us for publication by Mr. Burbidge, who may feel reasonable pride in this instance of the influence for good effected by his work on the Improvement of cultivated plants:—

BRISBANE, QUEENSLAND .- My most successful efforts in hybridisation have been in the production of two Grapes between European forms and the American Isabella. One is by a Sweetwater male parent; is a white Grape, with flavour something like what is called here Cape Gooseberry (Physalis peruviana). A second is by Black Hamburgh; ripens early, and promises great vigour. In this latitude (27°.5) we find, on the seaboard, that European Vines have little constitutional vigour; in vineyards a patch of European Grapes looks pale and dying compared to Isahella and other American Labrasca Grapes; Iona is the next favourite. Scuppernong we are supposed to have, but it has small foliage, and produces very rarely a small, leathery, austere, useless fruit. It is curious that the Southern Fox-grape should be unsuitable, when the Northern succeeds so well; but our latitude is not that of the Southern States, but corresponds to the centre of Florida and Mexico.

A few European Grapes come into the market; Pinsan Blanch is one, and Early Sweetwater. These early Grapes do best of all European forms, as they have not to tolerate the heat of the summer sun. Inland, at 2000 feet elevation, particularly in the drier western country, where the soil is volcanic, good Grapes are grown. I am continuing hybridising experiments in the coming season, and hope to discover Grapes that may be suitable to the latitude. We have a law that forbids the importation of Vine cuttings, from fear ol introducing Phylloxera, so I content myself with getting seeds only; some from Iodia, Dowlootahad and Cabul Grapes, are spoken highly of. Dr. Dymock, of Bombay, sent me seeds that are thriving well.

With reference to Wheat, Indian grain sown at the same time and place fruit with us one month earlier than European Wheat, and so escapes rust; yet European Wheat is successful in Adelaide (lat, 35°.5).

I am laid-up just now with a wound in the foot from a ray, and cannot get about; so, brought to reflection, I write to thank you for the many interesting sugges-



FIG. 106.-HIMALAYAN PRIMROSES (SEE P. 541.)

tions in your valuable book. With us (in lat. 27°,5) few European plants are successful, and when they are can only be grown in winter, when we enjoy Turnips, Cabbages, and the like. Peaches that fruit are Chinese; Apples are from American sources; two new Plums, Newman and Wildgoose, just introduced, came from a gardener in the Southern States of America. The only Pear that fruits is a large Chinese Pear. This succeeds to admiration, but the

fruit is only fit for baking. Hybrids of it ought to be

Irut is only fit for baking. Hybrids of it ought to be tried. I am told that some have just been introduced by a great gardener here, Mr. Cribb.

We have a powerful growing Clematis, but it has no petals, so far as I recollect, but produces loog feathery fruits. One might perhaps get a cross with the showy flowers grown in Europe.

Brazil, and other parts of South America, should yield us some good fruits. I do not doubt in years to

come fine fruits will be grown here, especially by irrigation, as in some years we have no rain for months together, as in the present season. We are moutus together, as in the present season. We are now very busy making dams, erecting windmills to pump water, and sinking wells by boring machinery. At other times for years together there may be plenty of rain, and no scarcity of water, so variable is the climate. Yoseph Bancroft, M.D., Vice-President of Royal Society, &c., of Queensland.

The Kosery.

ROSE CULTURE IN POTS .- The successful culture of Roses out-of-doors is dependent to a considerable extent upon the weather. The numerous ills that Rose life is heir to, cannot be so successfully overcome out-of-doors as they can under glass; they are likewise greatly aggravated by frost and cutting winds in the spring months. An earnest cultivator of the Rose is not to be deterred by the difficulties peculiar to our insular climate. The bud-worm must be attacked in its early stages, a keen eyesight with a sharp-pointed needle are the hest appliances. Greenfly may be washed off or removed with an aphis-brush, while dry flowers of sulphur, or a solution of sulphur and soft-soap applied with a syringe, will destroy mildew. With all the difficulties to be contended against, Rose culture out-of-doors is associated with such happy memories, that it cannot be other than a pleasure. Everybody has heard or read of the magnificent pot Roses grown by the great trade cultivators, and their method of producing them has not been kept a secret. Indeed, it has been proclaimed from the housetops in years gone by, and yet amateurs and others seldom grow Roses well in pots. If prizes are offered for them either in London or in the country either no exhibitors appear to claim the prizes, or should any competitors come forward, their productions are seldom better than second or third-rate. There is this to be said for the would-be exhibitor of Roses, that it is very difficult to get a group of plants all in flower, in good condition at one time, unless three or four times more plants are grown than is required.

The growing of Rose trees for exhibition is not nearly so important as their culture for the decoration of the greenhouse or conservatory, and to supply choice cut flowers when they cannot be obtained outof-doors. For this purpose large bushes are not required. A big Rose tree that four men could manual A big Rose tree that four men could move required. with difficulty, would be as useless in most gardens as the proverbial white elephant. Indeed they have scarcely a place in any garden, public or private. In a large exhibition tent they have their place of honour; they have been grown, trained, and watched over with anxious solicitude for this, and when people have admired them, and wondered how they were brought there; their work for that season is finished; they have shown what skill and science can accomplish; and what the Rose is capable of being grown to by years of patient and trying labour. A big exhibition pot Rose may have been in training for a quarter of a century. Few people would covet such plants, and if they did it is not likely that they would obtain The kind of Roses that every owner of a greenhouse might have are those that can be grown and flowered in pots from 8 to 11 inches in diameter, inside measure; as a rule, the plants are budded or grafted on the Brier or Manetti stock, but they are often also on their own roots; and I must confess that after a quarter of a century's experience in the culture of Roses in pots, I like them best on their own roots Some Roses do not strike so freely from cuttings as others, but the largest proportion of them can be propagated in this way with but little ftrouble. The mistake is ofttimes made by neglecting to put in the cuttings at the right time. I fancy the best time to do so is early in the autumn. The cuttings should be taken off with a heel attached, and they must not be too long; about 3 or 4 inches of stem may be inserted in the ground, and two or three eyes above ground. If a greater length of stem is left to dry up above the surface, the cutting may die off altogether.

One of the best lots of Tea Roses we ever had I propagated from cuttings early in August; it is probably more than fifteen years ago, but the results were so excellent that they are not likely ever to be forgotten. About six or eight cuttings were put in 5 and 6 inch pots in fine sandy soil. Some close handlights were placed in a shady part of the orchard-house and filled with the cutting pots. Such glasses get very moist inside by the evaporation of moisture, and it is necessary to wipe them once in twenty-four hours. As the glasses are kept close, the cuttings do not require water very ofteo, probably not more than once or twice in a week. As the weather is very warm in August the cuttings soon form roots, and in less than a month they may be potted off singly in 4 or

5-inch pots. It is only right to say that if they are propagated early they require more care than they do if put in a month later. The right kind of cuttiogs should also be taken off; what may be termed halfripened wood, taken off with a heel attached, will form roots most readily. If the cuttings seem rather stuhborn a gentle bottom-heat will aid greatly in the formation of roots. Some of the early propagated plants I have alluded to produced a nice lot of blooms the following spring. Some people may find a great deal of pleasure in propagating their own Roses, and it is quite as well to say how it ought to be done, but good plants can he purchased at a cheap rate from the nursery one year from the bud, and those who would like to have good plants at once can purchase them ready for forcing in 8-inch pots at prices from 21s. to 36s. per dozen.

Really good Roses cannot be produced in the spring unless the plants are well prepared in the previous summer and autumn months. The manner of this preparation need not take very long to tell. The potting of the plants is the foundation of all other details of the work. Good substantial loam, or rather the turfy parts taken from clayey loam, suffi-ciently decayed to kill the grass and weeds, mixed with some crushed hones and a fourth part of decayed stable manure. For Tea Roses a third part of turfy peat should be added. The pots must be clean and well drained. The time of potting is not very material, but for early blooming in the spring the work should be done early enough in the previous autumn to allow of the plants being well established before the winter. I have usually potted ours in August, and find it answers very well to do the work in that month. Hybrid perpetuals may be placed in a sheltered yet open and sunny position out-of-doors. Tea Roses ought always to be kept under glass; I cannot say our own are so favoured, but if a choice can be made, I would prefer to grow them under glass all the year round.

It will be found that mildew, as well as greenfly, is a constant source of annovance while the wood is ripening. These pests to the Rose grower are very much more difficult to deal with on the outside Roses, and they often greatly impair the vigour of the plants. The importance of destroying them on their first appearance cannot be too strongly urged. The Orange fungus which appears on the leaves in patches of bright orange, if it were more common would also he a trouble to the grower, but I have seen it once only in our garden, where it had spread freely over a number of pot Roses before my attention was called to it, but it was easily exterminated by picking off every affected leaf and burning them. The plants were then thoroughly washed with the soft soap and flowers of sulphur preparation; this doubtless destroyed every incipient particle of the parasite that might be lingering on the leaves, for I fancy if softsoap and sulphur will not destroy fungoid growths patent preparations will. dreaded Hollyhock fungus will succumb to persistent use of sulphur and soft-soap.

By careful potting, as advised, cleanliness and care in watering, laying the pots on their sides to avoid injury from continuous cold autumn rains, the Rose bushes will be in good condition for forcing. Quite half the work is accomplished when the Roses have successfully arrived at this stage. If forcing is begun on the first day of the year the Roses should be pruned in November, at a time when the roots are comparatively dry, not dusty dry; in that state they should never be. They need not receive any water for several weeks after being pruned, and the wounds will dry up without bleeding; but the best growers dress the cut portion with styptic. There is no need for a special house to force them in; few people can afford that. They can be placed in an early vinery, the gentle heat of about 45° to begin forcing with just suits the Roses, and as the temperature is advanced, first to 50°, then by degrees to 55° by progressive stages, it will answer for the Roses equally well with the Vines. I like to go into the house early in the morning, and find the tiny dewdrops regularly arranged on the serratures of the leaves. One difficulty has to be faced when the vinery is used as a The plants are not in flower before forcing-house. they are shaded by the leaves of the Vines. This can be managed sometimes by placing them in the second house. They ought to be placed as close as possible to the glass lights during all the time of their growth. Light and fresh air are most essential to their well being. J. Douglas Great, Gearies.

STANDARD ROSES IN POTS .- The group of these shown by Messrs. Paul & Son, of the Old Nurseries, Cheshunt, at the meeting of the Royal Horticultural Society on the 22d inst, is deserving of notice for two main reasons: one, because of their fine cultivation and the admirable way in which they were flowered; the other, because of the mode in which the heads were trained. Some of the Tea-scented varieties had ample foliage and fine flowers, such as Madame Falcot, Madame Lambard, Marie Van Houtte, and Souvenir d'un Ami; and the following Hybrid Perpetuals hearing fine blossoms :- The Shah, Catherine Souport, La France, Maréchal Vailliant, Hippolyte Jamain, Paul Verdier, and Charles Lesehvre. in so far as the training of the heads is concerned there was the entire absence of the prominent stakes that sometimes disfigure these plants when grown in pots. Three slight sticks sufficed to train the heads to, and these were hidden from view by the leaves and flowers. One of these stakes was an upright one, tied to the main stem just below the head, and reaching to the top of it. Then two other stakes formed a horizontal cross just below the main shoots, and these were tied out to these stakes, but so arranged as to form a circle. This enabled perfectly symmetrical heads to be formed, displaying the flowers to the best These standard Roses must be set down as one of the cultural successes of the year.

Prehid Notes and Cleanings.

PELORIA IN ORCHIDS,-Some years ago in writing on the subject of Peloria, or that tendency which irregular flowers have to become regular, we pointed out that there were two ways in which this happened : one in which regularity was produced by the absence of irregularity-in which, in other words, all the parts were regular-and that in which regularity was induced by increased irregularity, as in those cases where all the parts of the flower become irregular, and thus a regular whole is produced of irregular units. The first case is botanically one of "reversion"—the flower retains the condition it had originally. This condition may, therefore, be looked on as an arrest of development, and it shows not only the original state of that individual flower, and all others of the same generation, but it also furnishes a clue to the probable condition of the ancestor from which they sprung. The second condition, so far from being an arrest, is a case of exalted development —a new departure—and it is one which, if it prove advantageous to the plant, will, on Darwinian principles, survive. Major Lendy has lately furnished us with two excellent illustrations of these opposite tendencies in two flowers of Phalænopsis Stuartiana; in the one there was a tendency for the lateral petals to assume the guise of lips; in the other the tendency was to regularise the flower by the suppression of the lip. In some cases we have seen all six of the flower segments flat and regular, and in others-Cattleya, Lælia, &c .- we have seen three distinct lips instead of one.

PHAIUS MACULATUS. - The stately erect stems and hold conspicuous flowers of the members of the genus Phaius gain their admittance to gardens generally, but the above-mentioned species possesses attractions of a superior nature. The ample foliage is handsomely spotted with creamy-yellow, irregular sized blotches, character altogether unusual in this order of plants. A specimen flowering in the Odontoglossum-house at Kew, in a comparatively small pot, has three flowerspikes, each hearing from eight to ten flowers. The well defined clear yellow sepals and petals, with the orange-brown, much crisped limb of the labellum, are features that should recommend the species to every Orchid grower whose collection even is limited. The plant, moreover, has long been introduced to this country, and was figured in the Botanical Magazine, It has been figured and described under other names, as Bletia Woodfordii and B. flava.

"CASUALTIES AND DISEASES OF VEGETABLE LIFE" is the title of a pamphlet by Mr. Bruce Findlay, Curator of the Royal Dotanical Cardens, Manchester. It will be published by Mr. John Heywood, at the modest price of td.

FRUITS UNDER GLASS.

VINES .- The scathing north-east winds which have lately prevailed at a time when the occupants of numof fruit structures are in a delicate stage of advancement, has taxed the energy of those in charge to prevent any injurious consequences. Increased artificial heat has had to he employed, while it has been impossible to ventilate without in some degree promoting a cold draught, and as both of these conditions are conducive to red-spider, a watchful eye should be kept on the foliage of Vines for this pest, and sponging be resorted to on its appearance to prevent its establishing itself. Muscats, when their blossoming period is over, should have a night temperature ranging from 65° to 70°, while that for the day may gradually reach 85° or more from sun-heat, early closing with a brisk, moist atmosphere, so that the thermometer runs up to 90°, should be adopted, and dispense with as much fire-heat, consistent with safety, as possible. Keep the sublaterals well pinched in after the trellis is covered with foliage. Defer thinning the berries until the perfect ones can be distinguished from those that are stoneless, and see that the Vines are well nourished, and their roots kept near the surface of the borders by substantially mulching them with short manure, and liberally supplying them with tepid liquid. When Alicantes and other late varieties requiring similar treatment come into blossom a temperature of 65° at night should be afforded them. This, with a day warmth agreeing with it, and other conditions favourable, will cause the bunches to lengthen, and insure their proper fertilisation. Alnwick Seedling has been pretty generally planted as a late but it is a question if it does not become popular as a companion to the Hamburgh for early and mid-season use. Diverse opinions have been expressed respecting its setting qualities, and this has arisen from the fact that while with some it has produced glutinous exudations on the stamen, with others it has not, the difference doubtless being caused through degrees of strength in the Vines. When the matter is present fertilisation cannot take place until its removal is effected, which is best achieved by the syringe, and if this operation is followed at mid-day when the Vines are dry by a camel-hair brush charged with alien pollen being passed over the bunches there will be no complaint as to bad setting. Late Hamburghs should be brought forward slowly with sufficient fireheat to keep them healthy, and when they come into blossom he treated as has been advised for the earlier

PEACHES AND NECTARINES .- Where ripe fruits are required particularly early, both night and day temperature in the first house should be raised a few degrees as soon as the stoning process is completed; this will be especially essential where such kinds as Royal George Peach, and Elruge Nectarine have not been displaced by Lord Napier Nectarine, Hale's Early Peach, or similar first early varieties. The fruit should also be entirely exposed to the sun so that perfect colour may be obtained, and this is best insured by the common custom of carefully raising each above the trellis upon a thin piece of lath. Much may be done by closing early and husbanding sun heat, and if this is attended with an abundance of atmospheric moisture, and frequent copious drenchings of weak tepid liquid manure at the roots if the drainage is perfect, the second swelling of the fruit will be greatly expedited, and the strength of the trees be preserved. The shoots as they lengthen will require to be ticd-in occasionally, and should be stopped as they reach their range, while strong ones already stopped should have their laterals removed, or laid-in if required to fill thin spaces. A night temperature varying with the weather, but not exceeding 60°, should be imparted to houses in which the fruits are stoning, and their other claims must not be disregarded; insect pests should by no means be allowed to gain a footing, as they are not only detrimental to the crop of the current year, but to the following one also through distorting and weakening the growths which should produce it. The trees in the latest house on account of a minimum of artificial fertilising being brought tn bear upon them invariably set their fruits very liberally, and the thinning should therefore be freely and executed early, before the trees age subjected to needless strain; at all times those most promising and best placed should be reserved, and the weight of the crop be regulated in proportion with the strength of the trees. Where fruits are in request late in the season and there is no outdoor supply, free ventilation should be allowed through the night, except during spells of inclement weather, when it may be necessary to use a little fire-beat. The employment of atmospheric moisture must be directed by the state of the weather, and the syringe should be used with discretion early in the afternoon, so that the trees do not remain well for any length of time.

MELONS .- If satisfactory progress has been perfected, the most forward crop will now be nearing maturity, and the fruits should have (if they have not already had) some kind of support; our practice is to secure the laterals, when the fruits are young, to the trellis with ties of raffia, cautiously avoiding the hazard of their beeling as the weight increases, by placing the ties near together and looping one around the loot-stalk of the fruit, and extra support is given as they approach ripeness by two thick strips of raffia being securely placed under them at right angles to each other, so as to receive the entire weight. The partial severing of the fruit from its stem is a true indication that it is ready for gathering, and a dry state should be maintained both at the roots and in the atmosphere, accompanied with a continual free circulation of air and a lowering of the temperature for some days previous to that stage being arrived at. The splitting of the fruit, a defect to which some varieties (notably Scarlet Gem and Hero of Bath) have a tendency, should be evaded by close attention being paid to the above directions in their management, for the evil inevitably follows a reverse practice, particularly that of closing the structure with a high temperature and a moisture-laden atmosphere. best remedy for canker - the most prevalent and dreaded disease to which Melons are liable, and which generally originates from a sappy growth produced either in a moist, close atmosphere, or an exces-sively nutritious soil—is to cover the affected part as soon as it appears, which it usually does near the base of the stem, with a cone of quicklime, or charcoal powder, which should be preserved perfectly dry, while the best preventative is to maintain a brisk temperature with a circulation of warm air, to expose the stems fully to the sun by drawing the foliage from them, and keeping the soil dry immediately around them, Thomas Coomber, Hendre Gardens, Monmonth.

Plants and thein Jultune.

STOVE FINE-FOLIAGED PLANTS .- These should now be making satisfactory progress aided by the in-creased temperature and brighter weather, likewise by the encouragement given to fresh root action in the case of all those plants that have been recently re-Look well after their condition now that young foliage is being developed, do not allow them to become excessively crowded or the growths will not be satisfactory; instead of being sturdy and compact, they will become elongated and drawn up out of character. Under these conditions the leaves will more readily become a prey to insect pests, the ample shelter and refuge for them being calculated to bring about this undesirable result. Plants that are grown expressly for the beauty of their foliage should always be kept as clean and bright in appearance as possible. Frequent sponging of the foliage of Dracænas and of small plants of Crotons will be a great belp in keeping in check both thrips and scale. Dracænas, too, are oftentimes attacked by either the green or black aphis in the heart of the plant; these should be dislodged at once; a soft camel's-hair brush being about the best thing to use, dipping it occasionally in an insecticide. Slugs (chiefly small ones) are also very destructive to the young leaves; laying a bait of some tempting green food and hunting by night, is the best way to reduce them. A little later on the Alocasias will be liable to attacks of the red spider, so also are the finefoliaged Anthuriums; a soft piece of sponge and a weak solution will be the best means to employ for their removal. In the case of large specimen Crotons that are harbouring a colony of insect pests, we advise the trough to be brought out and the plants laid over it. For the benefit of those who may not have read our remarks and advice respecting this trough we will again describe it. Ours is made of stout zinc, and measures about 6 feet by 4 feet, and 4 inches deep, with an iron strengthening around the upper edges. A hole at one corner of the bottom and a cork to plug the same provides a means of running off the insecticide into a galvanised pail (no vessel with a coating of paint ought at any time to be used) to be used over and over again. In this manner the undue waste of the composition is prevented; this alone will very soon repay the cost of the trough. Not being troubled with any mealy-bug here we hardly ever use ours now, except in cases of scale on plants that are not easily sponged. An occasional fumigation will keep in check any stray thrips or aphis that have escaped detection. A free use of the syringe, too, should be made, chiefly among such plants as will bear it with impunity. The older of the leaves of the Alocasias, Marantas, and Pandanads should be removed to make room for the perfect development of the younger foliage. Any of the first-named that have not been repotted should have the surface material taken off and a top-dressing then given them of fibrous peat and sand, with an admixture of sphagnum moss, in which their young roots will delight to roam. Except in the case of Maranta Warscewiczii all of that genus should have the flowerspikes removed as soon as they are large enough to handle. That one exception has a beautiful and novel appearance when in flower, the spike of which, when faded, leaves behind the future groundwork of a young stock if desired. Specimen Crotons that are in want of attention for training should have that operation performed before any considerable amount of young growth is made. The extreme of formality should be avoided by all possible means. Tar string should also be used as a tying medium; raffia or other similar material should not be employed, as it so soon becomes rotten when exposed to heat and moisture. Any of the Cycads that have been wintered in a cooler house than the stove would be quickly induced to push up a fresh crop of leaves, provided no growth was made late in last season, by being introduced into the moist, growing temperature of the stove. When these young leaves are being formed, and onwards till they reach maturity, the greatest care must be exercised not to damage them in any way; neither should the growths of any other plants be allowed to interfere with them as they are pushing up. When the leaves are become fairly hardened the plants should be removed to a temperate house again, but where they will receive shade during bright sunshine for some months to come.

some months to come.

In the arrangement of the stove plants some little modification might with advantage be made in a few weeks in order to accommodate the shade-loving plants, where they will more easily receive that necessary attention, and vice veria for those plants that succeed best in a greater amount of sunshine. If the stove plants are becoming too much crowded, some other house could perhaps be made to accommodate a few of the hardier kinds, provided the temperature be not much lower. With the cold easterly winds that we have been experiencing of late, we have not attempted to raise either the day or night temperatures the sunshine and interest the superature sheyond the directions last given when treating on the same subject, neither is it advisable to do so till a change in the weather intervenes. It is a waste of fring to keep up high temperatures during very cold and windy weather. With the extra firing that is required, even to maintain an average heat, it is necessary to damp down more frequently than usual, in order to keep a growing condition in the atmosphere.

GREENHOUSE FINE-FOLIAGED PLANTS.—Any of the succulent section of these that are in want of a shift might now be seen to with advantage. Such as the Agaves should have a thorough soaking in a tub of water if on the dry side before they are repotted. There plants do not always got the attention they properly deserve, both in this and other wants also. They are rather awkward customers to manage for giving a shift, as the pots or tubs in which they have been for some years will not easily come away from the balls of the plants. In such cases it is far better to sacrifice as the pot or tub than to injure the plant. Any suckers around the base should be removed with care. In mixing up the soil good sound tury leam should be the staple compost, a little peat might be added; but we would rather prefer a few knots of charcoal and crushed hones with sittle peat might the greater part of the greenhouse foliage plants will thrive in nearly the same mixture. Many of these plants are subject to white scale, which, when the potting is being seen to, should have the proper attention given to reduce the same. James Hudson, The Gardens, Gunnersbury House, Acton, W., April 22.

APPOINTMENTS FOR THE ENSUING WEEK,

TUESDAY, April 29 Floral Meeting in Town Hall, Manchester, Special Sate of Flowering Orchids, at Protection of the Prote

bacia of Cretaceous Age; "Professor P.
M. Duncan.
Sale of Imported Orchids, at Protheroe &
Morris' Rooms. FRIDAY.

THE ARRANGEMENT OF WALKS AND PLANTATIONS NEAR THE HOUSE is a subject about which a great variety of opinion may and does exist; still, in the carrying out of any of the different methods, and these necessarily must change with the circumstances of each particular house, the broad conditions laid down by the great landscape gardeners are usually adhered to. Where deviations from their ideas have been made, they have too often been carried out in a nervous, half-hearted way, as if in dread of being considered too unorthodox and innovating. So we see but few arrangements in English gardens made in the style seen in some very charming Continental establishments. In such places as do not pretend to be in the so-called English style, the arrangement of the indispensable groups of trees and shrubs and walks is totally different to what we are used to observe at home. There is less turf margin and but little foreground to groups, or, more likely, none whatever, the edging consisting perhaps of succulent plants or low-growing flowering plants, sunk in pots in the soil or gravel, sometimes of ornamental leaf-like tiles or some other artificial edging. The shrubs approach the walks closely, so that there are more surprises, especially more of them in a small garden than would be possible with our system of planting, every few paces opening up new prospects, not extensive perhaps, but still pleasing, because unexpected. In sunny weather, when shade is always grateful, it is pleasant to place a seat on the shady side of such groups, and close up to them; there there is no draught, such as is always found under trees.

A pleasant feature that is worthy of consideration even here, where shrubs, and especially evergreen ones, are so abundant, is to have small groups made with the hardier Palms, Dracænas, Aralias, Oranges, and Yuccas placed together so as to form tolerably close masses. To save watering, and also to preserve the plants from too sudden variations of moisture and drought, the pots or tubs are sunk in beds of coarse sand or gravel to half or the whole depth of the pot, &c. These arrangements admit of being varied in form and position, and can be made very effective, especially when flowering plants such as Lilies, Tube-roses, Gladioli, Canterbury Bells, Sweet Williams, and a host of tender and hardy annuals and bedding plants, grown in pots or boxes, are placed during the summer near the margins.

Another feature in some foreign gardens is the shade screen, not necessarily provided with a roof, but merely a something behind which a seat may be placed out of the sun, and through which the warmth penetrates, but not the direct rays. These are not usually set on turf, and here would be always better on the gravel for the sake of greater dryness. These are planted with Aristolochia sipho, Ampelopsis hederacea, Clematis, Periploca græca, Ivies, the Vine, climbing Roses, or with summer Creepers, which may be cleared away, trellis and all together, in winter.

For this latter purpose ornamental Gourds, Nasturtiums, Bryony, Sweet Peas, Calystegia pubescens, and single Convolvuluses, are employed. Sometimes Thuias or Junipers are planted in the segment of a circle for the same purpose, and if a wavy upper line is made with their tops the effect is not too stiff.

Our climate is favourable for the production of good turf, which even in the hottest weather, with due attention, seldom burns so as to become an eyesore; therefore, turfy margins and green lawn slopes, and broad masses of grass in front of groups of bushes and trees, will always be found in our gardens.

It is far different in many continental countries, in which it is easier to grow anything in a pot or a tub than it is to preserve presentable turf during the summer time, so the less there is of the grass the better,—at least, just under the windows of a house. This will partly explain the reason for the difference of treatment, and will supply us also with motives for occasional deviation from the commoner practices in laying out the garden in proximity to the dwelling, as it may be that we have for a dripping climate too much turf and too few dry paths on which to walk.

- ROYAL HORTICULTURAL SOCIETY: THE LATE DUKE OF ALBANY .-- At a general meeting of the Society held on Tuesday last, the 22d inst., the following letter of condolence to Her Majesty the QUEEN on the lamented death of His Royal Highness the Duke of ALBANY, and the reply thereto, were read :-

"Royal Horticultural Society, South Kensington, S.W., April 12, 1884.

"Lord ABERDARE presents his humble duty to your MAJESTV, and begs, on behalf of the Council of the Royal Horticultural Society, to express their deep griet and heartfelt sympathy with your MAJESTY and the royal family on the death of His Royal Highness the Duke of ALBANY: a Prince whose great gifts and noble qualities had stirred in them, as in the whole nation, a sense of respect and admiration which deepened as they watched the development of his character, and marked his determination to walk in the footsteps of his illustrious father, and to use his high rank and influence as instruments in improving the condition and ennobling the lives of his fellow countrymen."

" Windsor Castle, April 15, 1884.

"Dear Lord ABERDARE,—I am commanded by the QUEEN to ask you to thank the Council of the Royal Horticultural Society for their kind and touching address. The QUEEN is very sensible of the warm feeling shown by them for her in her sorrow, and is much gratified by the terms in which you have alluded to her son.

"Yours very truly, "HENRY F. PONSONBY,"

— A MONSTER CATTLEYA SKINNERII,—An immense mass of this beautiful Orchid, weighing about 12 cwt., and measuring 7 feet in diameter, and over 6 feet in height, has just been successfully imported by Messrs. F. SANDER & Co., of St. Albans. It is certainly by far the most wonderful mass of any Orchid ever imported, and it is probable that no other such specimen will ever be obtained again, seeing that no specimen ever remains in one mass for the requisite number of years in a wild state. The specimen was originally planted by a native many years ago in the crown of a tree belonging to the species Euphorbia, in his garden near the city of Cartago, Costa Rica. He carefully tended it, and it flourished under his care and soon became one of the sights to which our botanical travellers in that part of the world were irresistibly drawn. SKINNER, the original collector of the species, saw it and was amazed. ROEZL states that at one time he counted over 1500 fully expanded flowers on it at one time; and many other travellers have seen and tried to purchase it, but to all their offers the simple owner returned the same answer, and refused to part with it.
At last Messrs, F. SANDER & Co. made him a fancy bid, which proved too much for his desire to gratify his love for his pet monster by keeping it, and the result was that the tree was cut off above and below the plant; it was placed in an immense case, and with infinite labour and great cost conveyed to Puntas Arenas, and from thence by Royal mail steamer Medavay to Southampton. As soon as it was known that the huge specimen was well on its way, a suitable house was commenced for it at St. Albans, from the roof of which it will be suspended by a strong chain, and in all probability it will prove as great a source of gratification and attraction on this side of the water as it did on the other. We have seen the wonderful specimen at St. Albans, and it is in the most

perfect condition, in fact as neat looking and compact as the illustration shows it in its native home. Considering the great difficulty there is in importing even small specimens of this plant, Messrs. SANDER must feel happy in their success. Our illustration shows the plant "at home," with its late owner at the foot of it, axe in hand, about to fell the tree.

- HENFREY'S "ELEMENTARY COURSE OF BOTANY."-The fourth edition of this well known text book will be published early in May. The sections relating to the morphology and classification of flowering plants have been revised and largely extended by Dr. MAXWELL MASTERS, who has also made great additions to the physiological portions, while Mr. A. W. BENNETT has rewritten the sections relating to cryptogamia and histology generally. This new edition will he still further enriched by numerous additional illustrations. The plants used in medicine, agriculture, and the arts are specially alluded to, and reference made in the physiological portions to those points of particular interest in the cultivation of

- "THE HANDBOOK OF BRITISH FUNGI," by Dr. M. C. COOKE, is out of print, and we understand that no second edition will be published.

"FLORA OF BRITISH FUNGI (HYMENO-MYCETES)." — The Rev. JOHN STEVENSON, of Glamis, author of Mycologia Scotica, and Honorary Secretary of the Cryptogamic Society of Scotland, has a work in preparation bearing the above title, and which will be illustrated by Mr. WORTHINGTON G. SMITH, F.L.S. It will be published in two volumes, and will contain full descriptions of all British Hymenomycetes (chiefly Agaricini, Mushrooms and Toadstools), with habitats, seasons of growth, &c. Edible and poisonous species will be specially noticed and commented on, and all genera and sub-genera will be figured. The illustration of sub-genera will supply a much felt want, and will greatly facilitate the study of Agarics. The issue of the work will depend on a sufficient number of subscribers being received by an early date-in which case the first volume will be published without delay.

--- Mr. Joseph Ashby, of the firm of John STANDISH & Co., of Ascot, was, we much regret to hear, on Monday last seized with an attack of paralysis. Mr. ASHBY, who is much respected in the trade, has the sympathy of all who know him.

"LES ORCHIDÉES,"-By a slip of the pen the name of the lady publisher of a series of large folio coloured plates of Orchids was given at p. 514 as Madame G. VAUGET, instead of Madame E. Vouga.

- " HAMBURGER GARTEN UND BLUMEN ZEITUNG."-This old established periodical is now under the direction of Dr. E. GOEZE, the Inspector of the Botanic Garden at Griefswald, and who takes the post so long filled by Mr. E. Otto, who retires from ill health.

- MR. JOHN MATTHEWS, of the Royal Pottery, Weston-super-Mare, was last week unanimously elected chairman for the ensuing twelve months of the Weston Town Commissioners. Mr. MATTHEWS has long been known as a warm advocate for the incorporation of the town, and it is hoped that some effort will be made to raise Weston from a mere parish to the dignity of a borough during Mr. MATTHEWS' year of office.

- THE FROST AND THE FRUIT CROPS .- Mr. BARRON, writing from Chiswick on Wednesday, reports that 10° of frost there have sufficed to destroy all the fruit blossoms. We regret to hear that the same fate has befallen the blossoms in many other districts.

- REMARKABLE FROST ON THE CONTINENT. -Daily News correspondents report that a phenomenal wave of cold swept over part of Switzerland on Monday night without any premonitory warning, the thermometer falling many degrees below freezing point. The damage to agricultural interests is enormous, and at least one-third of the vintage has been destroyed. A disastrous frost on Tuesday morning has devastated the Vines in the Saone Valley, and the damage is estimated at many millions of francs.



Fig. 107.—MASS OF CATTLEYA SKINNERII, 7 FEET THROUGH AND 6 FEET HIGH, NOW AT ST. ALBANS. (SEE P. 548.)

--- TURNERACEÆ,-This order has now had a new genus added to it by Mr. R. A. ROLFE, of Kew (Linnean Society, April 3). The specimens on which it is founded are from the north-west of Madagascar, the peculiar characters, among others, being its glassy transparent calyx, which is totally destitute of chlorophyll or other colouring matter. Mr. ROLFE, referring to the latest authority, Dr. J. URBAN, mentioned that the order consists of five genera and eighty-three species distributed in America from North Carolina and Mexico to the Argentine Republic, and in Africa from Abyssinia to Mozambique and the Cape of Good Hope, while others are found in the island of Zanzibar and Rodriguez. The unique example now added to the order as a new genus and species, Hyalocalyx, was obtained by Dr. C. RUTEN-BERG on Nossi-bé, a small island on the north-west of Madagascar, and which Mr. ROLFE regards as holding a position midway between Mathurina and Turnera.

- THE NATURE OF LICHENS .- A paper was read at the Linnean Society, on April 3, by the Rev. J. M. CROMBIE, "On the Algo-lichen-fungal Hypothesis." The author gave a brief sketch of the Hypothesis as enunciated by SCHWENDENER, BORNET, and others, noticing the various arguments and illustrations which had been obtained from experiments in Lichen cultures, whether from the spore or by synthesis, observing that in both cases these were confessedly but small, owing to the very great difficulty of cultivating beyond a rudimentary stage except under the same atmospherical conditions in which they grow in Nature. Two fatal objections, he said, might be taken to the theory: - 1, The one having reference to the very peculiar nature of the parasitism it assumes; and the other, 2, the fact that, notwithstanding a similarity of appearance, there were in reality no true fungal-mycelia nor true algae colonies in Lichens. As to any direct genetic, or any indirect parasitical connection between the gonidia of Lichens and the hyphal filaments, it was further pointed out that none such existed, but that on tracing the evolution of the thallus from the germinating spore it is seen that the gonidia originate in the cellules of the first parenchymatous tissue formed upon the hypothallus, and that subsequently through the resorption of the lower portion of the cortical structure they became free, and constituted the thin gonidial stratum. Where seen lying amongst the medullary they are often attached to these, not as the result of any copulation, but by means of the lichenin which permeates the whole thallus. The origin of the gonidia and their relation to the rest of the Lichen thallus, the author stated in conclusion, thus belonged to the very elements of morphological botany.

- DARLINGTONIA CALIFORNICA. - This remark. able plant is now in bloom in the nurseries of Mr. W. BULL. Though allied closely to the Sarracenias, many of which are also in bloom, it presents some striking differences. In the first place the flowerstalk has two or three sheathing-bracts at wide distances apart, and which perhaps, represent the three smaller ones found close together beneath the flower in Sarracenia, the five sepals are oblong greenish-yellow and pendulous, the five oblong concave purplish-brown petals instead of being spreading or reflexed are valvate (i.e., touch by their margins) and thus form a broad tube surrounding the stamens and pistils, an arrangement quite unlike that of Sarracenia. Still more unlike is the style divided into five short stigmatic rays vastly different from the huge umbrella-shaped expansion of Sarracenia. No doubt, these arrangements are connected with variations in the process of fertilisation. Gardeners complain that the insects caught by the pitchers of these plants disfigure them, as undoubtedly they do, and some, more-over, find in this circumstance an argument against the alleged utilisation of the captured insect as food. We do not attach much importance to this latter objection, inasmuch as new pitchers are constantly thrown up to replace those which get damaged in the service, and the greater the damage in one way the greater the consequent vigour. It is a matter for astonishment that these plants are not more popular for the sake not only of their pitchers, but for their remarkable, very handsome, and fragrant flowers. We gave some years since a series of large illustrations of several of the finest in Mr. Bull's collection, to which we refer the reader. Most people we imagine fight shy of these plants from a mistaken notion that

they require a great deal of heat. With the exception of S. Drummondi, perhaps, this is not the case. The plants have to endure in their native bogs a degree of cold in winter to which no English plant is called on to submit. During the summer they should have abundance of water. They will catch the flies for themselves.

- PANDANUS ODORATISSIMUS. - The great Screw Pine in the Palm house at Kew is now showing flower for the first time. Two years ago, to prevent its breaking through the glass, or obviate the necessity of cutting it down, it was lowered from a large tub on the floor level to a brick enclosed bed, mostly below the floor level. The inflorescence, of which there are two cone-like masses, proves it to be the female plant, and reminds one of a Pineapple minus its familiar terminal tuft of leaves. The specific name of the plant was applied on account of the odour, said to be the richest and most powerful of all perfumes, given off when in flower. This volatile resides in the spathe-like bracts, chiefly of the male spadix. The latter inflorescence is branched in a thyrsoid manner, bearing the stamens in subwhorled spikes. The species is figured in ROXBURGH'S Plants of the Coast of Coromandel I, t. 94-96, and was originally introduced to this country more than a century ago.

—— PYRUS SPECTABILIS.—An example of this is now in full bloom in the grounds of Gunnersbury House, the residence of H. J. Atkinson, Esq., J.P. It is a large-sized specimen, and it is literally loaded with, and, indeed, almost groaning under the weight of the innumerable blossoms, which are red and white. It is said that this species is not so free of bloom as Pyrus malus floribunds, but nothing could be more generous in its service of flower than this Chinese Crab. They are larger and more showy than P. malus floribunda, and the bright red exterior makes them conspicuous for a considerable distance. Perhaps it is necessary a plant should become of mature age, as in the case of the specimen under notice, before it is thoroughly profuse of flower.

— ASPARAGUS PLUMOSUS NANUS.—A remarkably fine example of this exceedingly graceful evergreen plant can be seen in one of the plant houses at Gunnersbury House, Acton. Mr. HUDSON has it in one of the largest sized pots, and be has surrounded it with a cordon of upright iron stakes about 4 feet in height, to which the leading growths are tied. When this specimen becomes fully developed it will be of extraordinary size and great beauty. As an exhibition plant it should be highly serviceable. Small plants of it make very charming subjects for table decoration, and Mr. HUDSON uses it with great advantage in not a few of the effective arrangements for which he is so famous.

- DOUBLE-FLOWERING PEACHES, -The double crimson and double pink varieties have been objects of great beauty in the London parks, the former especially, because of its brilliant colour. It is, in consequence, a conspicuous object for a considerable distance. Like the double-blossomed Cherry it is too seldom planted, probably because it and the other varieties are expensive trees, and they find a place only in select collections. They have a further value in spring, in that they follow the Almond and take up the floral succession with Kerria japonica and Ribes sanguineum until such time as the Lilacs and other early flowering shrubs 'put in an appearance. This appears to be a season characterised floriferousness generally; the double yellow Kerria is singularly free of bloom, Laurels are flowering very early and abundantly, the Ribes is laden with blossom, while Laburnums, Lilacs, Chestnuts, &c., promise a rich harvest of flowers also.

— Rose Stocks.—At present Rose stocks appear to be doing wonderfully well. Several thousands growing in a stiffish clayey loam appear plump, and breaking into vigorous growth. It is said that a soft, mild, moist winter suits the stocks best, provided there are no rain floods when they are growing in heavy ground; it tends to keep them plump and full of sap, and when the spring comes they put forth shoots, and are enabled to stand the effects of drought, Seeing that the stocks are almost entirely devoid of roots when they are planted in autumn, it is matter for wonder that losses by death should be comparatively few. There is no doubt that a light sandy soil is hest

adapted to encourage the production of fibrous roots; but in the case of a dry spring the trees are apt to suffer. Roses do best in a stiffish soil provided they be well rooted, and probably no living rosarian ever before saw the Roses breaking into growth better than they are doing this spring, and especially is this true of those budded last summer. They are putting forth wood of astonishing vigour; happily, though the nights are cold, and the north winds cutting, there does not appear to be anything in the way of a check incurred by the pushing shoot. The cold weather is having this beneficial effect, that it tends to keep the growth in check, hardening it as it developes, so that it may be prepared to bear the rigours of nipping spring frosts.

— WANTED, A GOOD EARLY FLOWERING, VELLOW, HARDY SPRING PLANT.—This is an absolute necessity, and while many had hoped there had been secured a race of early flowering Violas that would flower in March if not earlier, that hope appears to have failed. At Belvoir Mr. INGRAM uses yellow Crocus, Doronicum austriacum, yellow Tulips, Narcissi, and yellow Cowslips and Polyanthus, with yellow Wallflowers of that early Dwarf type known as the Belvoir Castle. But it is with Cowslips and Polyanthus that Mr. INGRAM gets his leading yellow colours. Some time since a singularly early flowering Cowslip came into his hands bearing the name of Primula macrocalyx, and he did with this what he has done with Arabis, Aubrietia, &c. ; he selected the very earliest to flower, seeded from these, and by following up this process he has his finely improved Cowslips in bloom very early in the year, and he has secured varieties with rich colours also. But what is wanted is an early, dense, golden-flowered plant like Alyssum saxatile compactum or Aubrietia, but earlier in flowering than the former, and as con-tinuous in bloom as the latter. Violas are not early enough, and early ones are uncertain in their time of flowering. Yellow foliaged plants like Pyrethrum Golden Feather or Valerian Phu-aurea are not nearly effective enough. Such a yellow-flowering plant as that above sketched is badly wanted, and it would be welcomed as a great boon by gardeners could such an one be raised or introduced.

· DOUBLE FLOWERING CHERRIES .- A very fine specimen of the large double-flowering Cherry in a forecourt garden of the High Street of Ealing, is now an object of great beauty. Old inhabitants state that they have never before seen such a wealth of bloom on the specimens; the flowers are produced in enormous clusters along the branches; they are of large size and of snowy whiteness. This particular Cherry is of the Bigarreau type, with extra-sized The ordinary double blossomed Cherry flowers. has smaller flowers, less in size, and scarcely so double, and it may be said to represent the Morello type. Still, it is very free and pretty, and appears to be some days earlier. there is WATERER'S double Cherry. This variety is large and full, and has flowers tinted with blush or pale lilac. This may be said to be of the Bigarreau type also. Beautiful as these trees are, yet how seldom are they planted in gardens. The former, when it gets into size, appears to flower with great freedom year after year, and a more conspicuous object in April can scarcely be imagined, save and except Magnolia conspicua.

- PUVA CŒRULEA.-A reference to the number of the Gardeners' Chronicle for October 1, 1881, where a full page illustration of this remarkable Bromeliad is given under the name of Puya Whytei, will show what a grand plant this is for greenhouse or conservatory decoration. A fine specimen, with large very richly coloured flowers, is now blcoming in the Succulent House at Kew. The drawing published in the Gardeners' Chronicle was prepared from a plant which had been grown in the open air in the garden of Mr. TYERMAN, at Tregony, in Cornwall. TYERMAN's plant was planted in a dry sunny spot in the open border, in 1874, and seven years later produced a stout flowering stem 4 feet in height. It is difficult to describe the extraordinary colour of the] flowers. In the Botanical Magazine they are spoken of as being of a "dull metallic blue shot with Mr. TYERMAN says "malachite green." The narrow, spinous, rigid curved leaves—the upper surfaces of which are green, and the lower somewhat silvery-are produced in a somewhat dense rosette, and the lateral inflorescence is not so tall in the

Kew plant as in Mr. Tyerman's open air specimen. The bright orange-yellow anthers form a striking contrast to the peculiar colour of the inner perianth segments.

—— DORONICUM PLANTAGINEUM VAR. EXCELsux.—A full page illustration of this remarkable
perennial will be found on referring to the Gardeners'
Chronicle for September 8 of last year. Unlike the
other members of the genus, which are essentially
early spring flowers, this blooms continuously from
March to October. The huge size of the plant too
furnishes a striking distinctive character; in Mr.
WOLLEY DOD's garden it attains a height of 5 feet.
In the new rockery at Kew, a nice clump is in full
flower and its large heads cause it to be one of the
most conspicuous of all the numerous things now in
bloom. It is also a striking object in one of the
borders at Chiswick.

—— Crassula Quadrifida. — This is a pretty free-flowering plant of the easiest cultivation, and is worth growing for the winter decoration of the greenhouse or conservatory. Some interest attaches to the species on account of its exceptional structure; in the Crassulas the flowers are nearly always pentamerous—that is, the parts of the flowers run in fives; in C. quadrifida, however, the normal number of the floral divisions is four. It grows about a foot in height, produces a profusion of thyrsoid panieles, bearing star-like white flowers tinged with red on the outside. To sum up the merits of this plant, it is easily grown, it flowers freely, and lasts a long time in bloom. There are good specimens in the Kew collection of succulents, C. punctata of Continental gardens is identical with C. quadrifida.

RESEDA ODORATA PVRAMIDALIS GRANDI-FLORA.—The group of this fine red-flowered Mignonette, shown by Mr. WARERN, of Isleworth, on Tuesday last, afforded a capital illustration of the admirable way in which Mignonette is grown for market. There are such things as market preferences, and one of these is in favour of red Mignonette. It is said to be much more popular than the white, and it is doubtful if the double white variety will ever become a popular market plant. In growing Mignonette for this purpose some growers make the soil much more firm than others. That growing in the firmest soil lasts the longest in good condition, which is a matter of some importance.

— THE ORCHID MARKET,—At Messis, Pro-THEROR & MORKIS' sale on the 18th, a number of extra fine varieties of Odontoglossums unnamed (from Mr. SANDER's collection), came under the hammer, and realised good prices. A hybrid in the way of Ruckerianum, realised £22; another hybrid, 15 guineas; two varieties of Alexandra, 11 guineas and 19 guineas; a supposed distinct species, 15 guineas; and a hybrid in the way of Wilckianum, 12 guineas;

-- NEW VARIETIES OF PRIMULA SIEBOLDII. -A very interesting group of these was shown at the meeting of the Royal Horticultural Society on Tuesday last by Mr. GEORGE GEGGIE, Waterloo Nursery, Bury, Lancashire. For a few years past Mr. GEGGIE has been a successful raiser of new varieties, and, in conjunction with M. VICTOR LEMOINE, of Nancy, appears to be the only person engaged in this work at present. The group shown on this occasion comprised about two dozen varieties in the form of small but hardy and well flowered plants, giving a good representation of the varieties. Two of them were selected for First-class Certificates of Mcrit by the Floral Committee, viz., Brilliant, a variety with flat smooth flowers of fine shape and of a bright magenta colour, like laciniata in hue, but with smooth segments-a real acquisition; and Purity, pure white, flat and smooth, but as shown with a tendency on the part of the flowers to droop; but this might have been a result of the long journey the plants had to make. Then other pleasing and distinct varieties were as follows:—Nellie, a very pretty variety with slightly laciniated petals; Mrs. Crossley, pale lilac-rose, large flowers of fine form; Arthur, pale magenta-purple, very smooth, and fine form; Crimson King, sparkling magenta, having more life in the flowers than is seen in Brilliant, but yet scarcely so deep in colour; Pearl, pure white, but slightly tinted with lilac on the reverse of the petals like Mauve Beauty; Purple King, pale purple, large well-formed smooth flowers, very pleasing; Polly, bright pinkish-rose, large, and of good form; and Othello, lilac and rose, small-flowered, very pleasing. One feature noticeable in these varieties was the smoothness of edge seen in the flowers, though a few had pretty laciniated segments. It may be stated that one satisfactory mode of culture of these plants is to divide the crowos soon after the plants have done flowering, and plant them out in a good free soil, forming a bed in a cold frame. Here they may be wintered, giving plenty of air on all suitable occasions; and in spring, when the plants begin to throw up their flower-stems, they may be carefully lifted with balls of earth to the roots, and be placed in pots to expand their blossoms.

- David Jackson, the Middleton Florist. -The Rev. F. D. HORNER, Mr. BARLOW, Mr. GORTON, and Mr. BROCKBANK have formed themselves into a committee for the purpose of raising a small sum to be applied towards the support of this "During the last fifty years," say these veteran florist. gentlemen, "there has been no better known or more remarkable florist amongst the working men of Lancashire than our old friend DAVID JACKSON. Mr. Douglas published his book on Hardy Florists Flowers he singled out DAVID JACKSON for special notice, and stated that in many points he had anticipated CHARLES DARWIN in his knowledge of the fertilisation and the methods to be adopted for improving plants. In his hands the Tulip, the Auricula, and the Polyanthus were successfully cultivated, and so exact was his knowledge and so sound his judgment that no one was more frequently chosen to act as judge in floral matters. DAVID JACKSON is respected by every one who knows him as a sterling, honest, and upright working man, and a first-rate florist. He has been a weaver by trade, his wife also plying the shuttle by his side in their humble cottage. Hand-loom weaving is now slack; trade is bad, and the aged couple cannot further pursue their calling. Their hardly earned and carefully saved store is nearly exhausted, and the time has arrived which throws a duty upon those who have the means and are willing to help so deserving a couple in their old age." Mr. W. BROCKBANK, Brockhurst, Didsbury, is the secretary.

- THE WEATHER.-General remarks on the temperature, rainfall, and duration of bright sunshine, for agricultural and sanitary purposes, during the week ending April 21, issued by the Mcteoro-logical Office, 116, Victoria Street, London, S.W.:

—The weather has been cloudy, dull, and very cold in all parts of the kingdom, but with some decided intervals of bright sunshine; a few slight showers of rain, hail, or sleet have fallen locally. The temperature has been below the mean in all districts, the deficit ranging from 2° or 3° in Scotland to 6° in "England, N.W.," and the "Channel Islands," 7° in the "Midland Counties" and "England, S.W.," and 8° in "England, E.," and "England, S." The maxima were recorded on different days in the various districts, and were generally low, as at several stations in Great Britain the thermometer did not reach 50° during the whole week, while at scarcely any station did it exceed 53°. In "Scotland, W.," however, the maximum was 58°, and in "Ireland, S.," 60°. The minima (which were registered on the 18th, 19th, or 21st) were as low as 24° in "England, E.," 25° in "England, S.," and between 28° and 32° in most ther districts. On the grass, readings were, of course, much lower. The rainfall has been considerably less than the mean in all places. Bright sunshine shows a decided decrease in all districts, the percentages of possible duration ranging from 13 in the "Midland Counties," and 15 in "Scotland, E.," to 27 in "England, N.W." Depressions observed:— Pressure has continued highest over the northern and north-eastern parts of our area and lowest over France and our southern coasts, but there have been no de-pressions of importance in our immediate neighbourhood. The wind, which has been generally light or moderate in force, has varied between north and east, but at the close of the period a light southerly breeze had set in at our north-west stations.

— GARDENING APPOINTMENTS, — Mr. WILLIAM PRENTICE, lately Gardener at Shouldham Hall, Norfolk, as Gardener to R. WHITEHEAD, Esq., Paddockhurst, Worth, Sussex.—Mr. WILLIAM SIDALL, Foremao to Mr. J. HARDIMAN, Lyme Hall, Stockport, as Gardener to Mr. LOWTHER, Shrigley Hall, Macclesfield.

The Benbageous Bonden.

METAMORPHOSES OF SINGLE WILD DAFFODILS. Not many years ago a philosopher, believing that the turning of the divining-rod was a piece of wilful imposture, was playing with one, and was astonished to fied it suddenly making the magic indications by twisting in his hand whilst he endeavoured to hold it still. This led to further investigations on his part, and he found by experiment that only about one person in forty possessed the required qualifications for handling the divining-rod successfully. The account of this is found in Carpenter's Mental Physiology, but I mention it as an illustration of something in gardening. Botanists, as well as many leading horticulturists, have discredited the statement that the wild single Daffodil, when planted in rich soil, will in some gardens change to a larger variety of Daffodil with double flowers. It may be that not more than one garden in forty possesses the required conditions for producing this change; but some day some of those who are now incredulous, will find that the change has taken place under their observation, and they will then believe it. During the last three weeks I have investigated the circumstances under which, in at least four gardens, this change persistently occurs. The witnesses have allowed me to cross-question them, and their testimony remains unshaken. These were not statements casually made; but the observation of the change caused as much surprise to them, as it could do to any who read this, and the experiment was carefully repeated with the same result. The season being so far advanced, I have been able to obtain only in two cases both the single wild flowers and the double converted flowers. In both cases, however, the single flowers were typical N. Pseudo-Narcissus, and the double flowers-not the double wild Daffodil, as found wild in Devonshire, and occasionally in other places-hut the double of a major variety. not feel sure that they could rightly be called Telamonius, I sent both single and double flowers to Mr. Baker, of Kew. He pronounced the single to be true N. Pseudo-Narcissus (type), but the double he cousiders to be N. pscudo-narcissus var. lobularis. opinion makes it still more unlikely that any mistake has been made in the observation, because neither garden had ever had the double N. lobularis introduced into it. It may also be remarked that what is sold by English dealers as double N. lobularis is called in many Dutch catalogues double N. Pseudo-Narcissus. But I will not discuss the question farther this season, having stated the facts as I have ascertained them, and having put together for future reference all the correspondence I have collected on the subject. C. Wolley Dod, Edge Hall, Malpas, Cheshire,

P.S. Since writing the above I have received some more letters containing the same assurances of wild Daffodil changing to large double garden Daffodil, I have sent bulbs from the Welsh mountains in every case to wait the result.

THE GREAT WELSH PEERLESS DAFFODIL, "SIR WATKIN,"—The conclusion of our Daffodil season has been marked by the advent of a new Daffodil, which is, of its class, superior to any other, ranking with Emperor and Horsfieldli in size and beauty. It was exhibited at the late meeting of the Horticultural Society under the name of "James Dickson," and received a First-class Certificate; but as Messrs. James Dickson & Sons had nothing whatever to do with the raising of the flower, and as Mr. Pickstone, its raiser, desires to call it by a Welsh name, Sir Watkin, I suppose they will willingly agree, that it may in future bear the name so dear to all Welsh-

The history of this Daffodil is a curious one. About sixteen years ago Mr. Wm. Pickstone, of Manchester, leased an estate in Merionethshire, and it was there that this Daffodil originated as a chance seedling in his garden. This was before Daffodils were fashionable; but Mr. Pickstone recognised its merits, and took the propagation of it under his care, About six years, later he went to live at Hampstead, near London, and he took a supply of his Daffodil to his garden there, where it was grown on for some time. A few years ago he bought the estate of Maesmynan, in Flintshire, and here the bulk of his stock of this Daffodil was removed, though it was still grown on at its original birthplace in Merionethshire.

During these sixteen years the stock has increased, until it is now a large one, no less than 5000 blooms having been supplied to the florists last week. Mr. Pickstone is a gentleman farmer, and had no idea of ever selling his Daffodils until he was applied to by a Manchester florist who happened to see the wealth of blooms as he passed by the garden. In this way a good many blooms of it came to Manchester last spring, and they attracted considerable notice in the flower shops. I took the flower to be Mr. Barr's Princess Mary of Cambridge, which had just been certificated, and of which I supposed the blooms were being sold, in advance of the bulbs, by its raisers. In this way it escaped my further notice at that time.

this way it escaped my further notice at that time. This season, however, our flower shops have been full of it for several weeks past. At first, again, I mistook it for Emperor, which it greatly resembles; but at last it became evident that we had amongst us a giant Daffodil which had been unheard of at the Daffodil Conference, which our Barrs and Wares and Walkers knew not of, and which excelled every other rival for the florist's purpose. At last the name of its owner transpired, and next came an invitation to me to visit the garden where it grew. It is a long way to go, over 100 miles, to see a Daffodil, but I went, in the hope of tracing out its history. The origin of Emperor, Empress, and Horsfieldil is in each case veiled in obscurity, and here was a new-comer of equally grand form about which it would be interesting to know as much as possible whilst the subject was freshly before us.

Massuynau is on the skirts of the Welsh mountains, being about 350 feet above the sea, in a lime-stone district, and about 5 miles from the central peak of Moel Famman, the mother of hills. The soil is a strong marl with lots of boulders and pebbles in it, and here the Daffodils appear to thrive in the pure mountain air in a way I never saw before. They were everywhere, amongst the Rhodoendron bushes, and along the borders in thousands. The flowering time was nearly over, but there was enough to show how graad the sight had been. There was but this one variety, the stock having been kept as pure as precible.

My principal object was to find out the origin of Sir Watkin, and on talking the matter over with Mr. Pickstone I found that there were but three other Narcissi grown in his Merionethshire garden at the time of its appearance. These were a Trumpet Daffodil, very like Rugilobus, having a rich yellow tube and very stout and broad perianth-segments of a pale primrose colour. N. biflorus in a semi-wild state was also plentiful, and it is also believed that the common yellow variety of N. incomparabilis in its single and semi-double states was there. From these three, therefore, the new variety was probably derived, and I believe it was ultimately from a cross with the wild biflorus.

The colours of Sir Watkin are exactly like those of N. Emperor. The spread of the perianth is about 4 inches, and it has a beautiful pale-primrose colour. The tube is shorned and widened at the mouth, and richly fringed, and is of a rich golden-yellow. Emperor is scentless, but Sir Watkin is most fragant, and here you trace the scent of N. biforus most distinctly; and lastly, the outer tube below the perianth, which is yellow in rugilobus, is green in Sir Watkin, again like the tube of biflorus. The cup of biflorus again has the colour of perianth of Sir Watkin. There are thus many points of agreement, the only one to the contrary being the absence of the white in the perianth of the seedling. I believe the cross from a wild form like biforus will always produce fine progeny. It is considered in Lancashire that Horsfield improved bicolor by a cross with a fine wild form of N. pseudo-narcissus, and the small Macleai is credited with some of the finest of the incomparabilis and the wild poeticus with many more, and why not, therefore, the same results from N. biflorus?

I looked over the whole of Mr. Pickstone's flowers ose if there were any other varieties or one.

I looked over the whole of Mr. Pickstone's flowers to see if there were any other varieties, or any sigo of doubling in the flowers of so large a stock, which had thus been carefully cultivated for sixteen years; but there was no variation either in the form or the petalling of the flowers. It is fortunate for the floral world that there is so large a stock at once available, and that we shall neither have to pay long prices nor wait our turn for an odd bulb of questionable character. Here we have thousands of bulbs all true to name waiting for distribution. It is to be hoped that whoever is so fortunate as to become the distributor of the stock will not ask us too long a price for

It thus happens for the third time that we are to be indebted to a Manchester man for a grand Daffodil. John Horsfield and Thomas Leeds each gave us a grand variety of bicolor, Horsfield's being now called

the King of Daffodils. Mr. Pickstone follows with another grand variety, which is fitly called Sir Watkin, it being certainly the King of the Welsh Daffodils. William Brockbank, Brockhurst, Didsbury, April 12.

NARCISSUS INCOMPARABILIS JAMES DICKSON.—
This remarkable flower, which I consider the finest Daffodil novelty of the season, was exhibited at the meeting of the Koyal Horticultural Society on April 8, and obtained a First-class Certificate. During the previous week flowers of the variety bad been sent to me from three different sources, and it seemed surprising that so grand a Daffodil, which appeared suddenly to have become so common, had not attracted more notice, especially as it was exhibited at the Conference; but I traced all the flowers of it to one garden. Its merits consist not so much in the wider expanse of the flower as in its great substance; but the most remarkable character is the width (t½ inch) and depth (t¼ inch) of the crown, as compared with the proportions of that of the common K, incomparabilis. This leads me to suspect that it is a second cross between N, incomparabils and one of the larger Trumpet Daffodils. It has the additional merit of dwarf habit, the height from the crown of the but the top of the flower, which stands well out from the leaves, not exceeding 12 inches. C. Wolley Dod, Llandundo, April 11. [With this communication Mr. Wolley Dod obligingly favoured us with the drawing from which our illustration is taken. As to the name proposed by Mr. Brockbank we must point out that the flower has been exhibited, certificated, described, and figured (in the Journal of Morticulture) as "James Diecide, but the case is one for the Daffodil Nomenclature Committee to decide, Ed.]

TRUG BASKETS.

THE oldest of the several wood industries of Sussex is that of trug basket making, which is carried on at Hurstmonceaux by the grandsons of

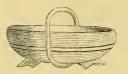


FIG 168.—GARDEN BASKET.

the original inventor, or improver of the trug-Thomas Smith, of the same place. Hurstmonceaux is known to the inhabitants of Eastbourne and Hastings, and to occasional tourists, for its grand old unroofed castle of red brick, the seat in Henry VIII.'s reign of the "Dacre of the South," who lost his head for the same reason that modern landlords, according to Mr. Henry George, ought to lose their land-because the estate was required for some one else. In literature Hurstmonceaux is known for its accomplished rector-Archdeacon Hare, for his curate, Sterling, and for his friend and guest, Thomas Carlyle; and Chevalier Bunsen lived bere with his family several years. It has another claim to notice, and other residents of mark—the herons, which annually build on the tallest trees of the highest ground in the parish; and although we may not mention the timber which once clothed its slopes, and which fell before the cruel fate of poverty on the part of a former family of owners, the poble landscape is still with us, the long smooth line of the South Downs in the west, the sea due south, 6 miles distant, and Pevensey Marsh between it and us-a level lawn stretching from below the hill where the village stands.

But so lar as utility is concerned Messrs. Smith's basket factory is of more consequence than all the matters we have named. The exact meaning of the word trug is suggested by the German words, tragen, to carry; trog(trough); and Messrs. Smith's baskets, varying from 6 inches to 4 feet long, and holding any quantity, from a bushel to a pint, are, in the larger sizes, most cheap, strong and handy for farm and garden, or light and elegant for holding flowers or whatever else a lady may wish to deposit in them. The little ornamental trugs, square, oblong, or circular in shape, are made of strips of Willow, white and light. The poles are cut into proper lengths,

and split and planed and bent, after being moistened, and then ingeniously formed into baskets. At the Exhibition of 1851 Her Majesty observed Messrs. Smith's collection, and ordered a Willow trug for herself, and one for each of the Royal children, the Prince of Wales getting the largest of the set. These particular speciméns were made with silver nails. Both at the Great Exhibition and that of 1855 at Paris, prizes were awarded to the little trugs. It is singular that the largest number of trugs of all kinds are sent abroad to all the countries of the Continent, and more in proportion are distributed in Scotland than in England. Can it be that Scotch gardeners and farmers are more canny and quicker to appreciate a good article than their brethren of the South? This refers to the larger, stronger trugs, which are useful in gardens and on farms, in stables, wood-houses, coal-houses—anywhere, for carrying Potatos, Turnips, stones, rubbish, Apples, Pears—anything. Trugs of this class are either made of hard wood entirely, or, for the sake of reducing their weight, they are made of Willow, with handles, braces, and rim of Ash. A Sussex gentleman who burns wood has a trug in every room in his house to hold the fuel, and these are made with feet instead of being round at bottom.

We are happy to notice the trug for its usefulness and low price, and also in connection with the increasing wood industries of Sussex. In the present state of agriculture such industries should be encouraged.

The Weald of Sussex has been diminished, no doubt, by the persistent attacks upon its timber on the part of the iron smelters and their successors in the work of destruction-the agricultural improvers of thirty years ago. But the woods of Sussex still measure 110,990 acres, according to the Agricultural Returns, and their area is not unlikely to extend. A considerable part of Sussex is admirably adapted for the growth of many kinds of timber-from the Oak, which affects the bottomless clays, and supplies materials for ships, and "shingles" used in covering clutch spires, and for planks, paves, lathes, and builders' stuff, to the Beeches of Goodwood. As a builders' stuft, to the Beeches of Goodwood. As a reat-paying product, however, underwood is more productive than timber, yielding, as it does, Hoppoles for the "gardens" of Sussex and Kent, hoops of all sizes for casks and kegs, poles for hurdles and wattles, faggots for fuel, and materials used in making brooms, or required in gardens, with Alder for charcoal and powder-making. Every kind of wood is grown, according to the soil-Ash in the moister, heavy land, Oak in the clays, Chestnutadmirable for Hop-poles-on the warmer, light land, especially on the loams of Midhurst. II. E.

Home Gorrespondence.

Ellam's Dwarf Spring Cabbage,—I am'rather surprised, after the mild winter we have had, to find that no one has given an opinion regarding the best varieties of spring Cabbage to grow. Most people here are crying out, "Nearly all my Cabbages have bolted!" and no doubt it is the same in most parts of the country. All I have seen in the market grounds around and near Portsmouth are certainly in this condition. I am growing four varieties, and send you a few particulars respecting their behaviour. They were all sown in the second week in August. Of Heartwell Early Marrow, 75 per cent. have bolted; Shilling's Queen, 25 per cent.; Wheeler's Imperial, 20 per cent. have bolted, but of Ellam's Dwarf Spring not one has gone wrong. I had 300 of each variety planted, and I must say it is a real treat to see the six rows of Ellam's by the side of the other "Egyptian recruits," I am not going to say that this is the earliest of all Cabbages, but it is the band-somest Cabbage I have ever seen, and well deserves the bonour it has received from the Fruit Committee. I have sent you a few as a sample of what I have been cutting these last three weeks. John Hepper, Gardener and Bailtif to Mrs. Sandeman, Wesfield, South Hayling, [Very good indeed. Ed.]

Bees and their Relations to Fruits and Flowering Plants,—"North Norfolk" is evidently anxious to "tread up," as he seems to wish for delay, and says he will not answer in detail, as other correspondents may like to relate their experience. This looks like shifting the burden on to other shoulders, and it is perhaps wise of him to do so, especially after such a statement as that he distinctly made, viz., that a bee gathering pollen conlines herself to the kind of blossoms on which she begins; although from the

same hive, different bees may be gathering honey from different flowers. To make this more clear, "North Norfolk" tries to illustrate bls meaning by further adding, "one may be gathering from Peach blossoms, another from the Wallfower, another from white Arabis;" and then he propounds the startling theory, that it is only by the abstinence and forbearance of bees, that one distinct natural order of plants is kept

what they are worth. I know it is the generally conceived opinion of apiarians, that bees collect pollen to make bee bread, but if it is only used for that purpose, will "North Norfolk" tell us what wax for the comb is composed of, and can he prove that pollen is not converted into, or forms part of that substance? Unfortunately, many of those who write about the habits of bees, do so, not from their own observation



Fig. 109.—NARCISSUS "JAMES DICKSON," ALIAS "SIR WATKIN." SEGMI CUP RICH GAMBOGE-YELLOW. (SEE P. 552.) SEGMENTS PALE CANARY-YELLOW,

from being crossed with the other, for he goes on thus to remark, "Irom this fact we see why the bees cause no inter-crossing, they only intermix the pollen of the same species." All this will be quite new to most people, and if it is the teaching of Huber and Aristotle, I am glad I have not read the books of those authors. As to what bees do with the pollen when they have collected it, it is easy to say, as "North Norfolk" does, that they never did, and never can, make wax from it, but statements like that can only be taken for

and experience, but copy, in a great measure, from others, and this is how it is the errors of old authors are perpetuated, and sometimes added to and enlarged. J. Sheppard.

Tar and Canker on Fruit Trees. — It is fre-quelly asked if tar or pitch will so far injure the bark of a tree as to cause the death of the tree so acted on. I may say that, so far as I know, there is no record of a robust tree with sound mature bark having been

killed by it, although doubtless its effects would be decidedly injurious if the application was made over the major portion of a tree's bark surface. When tar is placed over wounds caused by removing large limbs it acts beneficially in stopping up the pores of the wood, and thus preventing air and moisture acting on the tissues so as to cause decay in them. This protective effect can be made to last till the natural growth of the bark has covered the place, which will generally happen, if the tree has not approached maturity, in a few years, more or less, according to the rate of growth. With regard to the usefulness of the riese, it has been found that in trees so affected, if the infected portions of the bark, and even the wood, be cut away till sound tissues are reached, and tar (coal) or pitch be well rubbed into the wounds thus made, it has a fatal action on the particular fungus, which is the cause of the disease called canker. Of course it will kill the germs of the fungus only where it touches, will retard the spread of the disease on the particular trees which are manipulated on, and will lessen the number of attacks on neighbouring trees. But the trees which are manipulated oo, and will lessen the number of attacks on neighbouring trees. But the real remedy in the case of young trees, and those of a manageable size, is to lift them out of the soil, that by its nature predisposes the trees growing in it to the disease, and to plant them in more congenial soil. Shallow or surface planting over an impervious floor, and in the case of small trees occasional trans-planting and root litting,—and enough manure to ensure vigorous growth and superior fruit,—will be discovered to be the best treatment, M.

A Floral Calendar,—With reference to the Floral Calendar published at p. 520, may I state that it is a continuation by Mr. R. Lindsay, curator of the Edinburgh Botanic Garden, of the work of his predecessor, Mr. Sadler, vide Transactions of the Botanical Society of Edinburgh, vol. 14, part 3, where the Calendar is given for the preceding fourteen years. Andrew Taylor, Edinburgh.

where the Lalendar is given for the preceding fourteen years. Andrew Taylor, Edinburgh.

The Best Table Potato at Present?—Allow me a line to thank Messrs. J. Muir and A. Dean for so promptly [6, 522) replying to the above. Your endorsement of Mr. Muir's selection—Schoolmaster—induces me to plant the remainder of the small stock that I have on hand to give them a further trial. Mr. Dean's views in reference to 'late keeping" are not only instructive, but this year too accurate; as almost all late kinds exhausted themselves in premature growth—Champion worst of all. With me Magnum Bonum has kept best, and if it was as I said drier in the flesh ("floury") I should ask no better now. We shall look forward to the introduction of the variety referred to—that which of so many varieties kept best. W. J. Murphy, Clonnel.

—— This is a question which should be carefully answered, for all have their favourites. I may state that I grow over a hundred varieties, and I have been a successful exhibitor in London, Manchester, and elsewhere. I have grown most of the leading sorts as they have been sent out, and have had many varieties that are beautiful to look at, and that is all. The American varieties are in general great croppers, and some are good early varieties, but I have falled to find a good late sort amongst them. The coming Potato, in my opinion, is Reading Hero. It is an excellent cropper, and for eating is at its best from now onwards. It is in great repute in this neighbourhood. Then we have our old lavourite, the Schoolmaster, an excellent Potato at this season, second only to the Hero. Magnum Bonum is not all that could be desired, although an iovalnable variety. Champion is an excellent variety, but too deep in the eyes. I may sum up by saying that Reading Hero, when better known, will be the Potato for this season, Schoolmaster, on excellent Potato at this season, second only to the Hero. Magnum Bonum is not all that could be desired, although an iovalnable variety. Champion is an excellent coming next, then

Cottagers' Shows.—Referring to remarks on this subject at p. 518, I may be allowed to say that I have for many years been a member of a provincial horticultural Society, which has a separate class for the productions of cottagers, and of these productions it may generally be said that, so far as they go, they compare favourably with those of amateurs or professional gardeners; and I believe there has never been cause to entertain anything like suspicion of their fessional gardeners; and I believe there has never been cause to entertain anything like suspicion of their acting in any way unfairly—that is, in showing productions as their own which were not produced in their own gardens; so that the visit of a committee previous to the day of the show has never been considered at all necessary, and would, I believe, be regarded by the cottagers themselves as far from being complimentary to their honesty and their love to fair play. Indeed, were anything like unfair means resorted to on the part of any individual, rival competitors would be almost sure to detect the fraud, and would not be slow to expose the same, when, if proved, the delinquent would in future be refused the privilege of exhibiting. The society referred to, in

addition to giving prizes to cottage garden productions, gives also prizes for the best cultivated cottage gardens; and here it is, of course, necessary that the gardens should be carefully inspected; and this is done by members of the society, who are annually appointed for the purpose at the annual or general meeting of the same. The surrounding parishes being divided into three districts, and the cottagers in each who may wish to compete, are invited to sead in their name wish to compete, are invited to send in their name and address by a given date, when the two appointed judges for each district are expected to visit the various gardens once or oftener during the season, and to decide as to their merits, taking into due consideration the quality of the soil, the favourable posistate at the sarden, or otherwise, as being circumstances which the owner cannot always control. Making due allowance for the difference which may exist in the extent of the various gardens, so that the larger should not necessarily be placed before those of less extent, unless there exists a superiority in the culture and condition of the same. In each district the and condition of the same. In each district the judges are empowered to award four prizes, viz., 20s., 15., 10., and 75. 6d., with permission to give a gratuity of 55. to each of the remaining competing gardens, which they may consider as deserving. This, however, is not quite all, for at the annual dinner however, is not quite all, for at the annual dinner of the society (and it may, by-the-by, be observed, that there is nothing which stimulates an Englishman's generoisty like a good dinner) it is by no means unusual for gentlemen to offer additional prizes in kind, to accompany or to supplement the prizes given by the society. These prizes generally take the form of useful garden tools, or implements; as well as serviceable articles of household furniture. Sec. So that taken altereater the prize ments; as well as serviceable articles of bousehold furniture, &c., So that taken altogether the prizes, although small, nevertheless tend to keep alive the interest which it is so desirable that the cottager should take in his garden and in his home. In this respect it may not be too much to say that the society in question has done, and continues to do much good. Yet strange to say the clergy, even the clergymen of the various parishes where the commuch good. Yet strange to say the ciergy, even use clergymen of the various parishes where the competing cottagers reside, with a few exceptions, decline to encourage, or, at all events, to subscribe to the funds of the society. Hortus,

Wall Flowers and Wall Trees .- Nature, nn-Wall Flowers and Wall Trees,—Nature, nn-aided sometimes, forms very beautiful wall gardens, in which the native Wallflower (Cheiranthus cheir) plays, as might be expected, a very important part. A very remarkable example of this may now be seen upon a portion of the massive ruins of the ancient monastic establishment at Bury St. Edmunds. That monastic establishment at Bury St. Edmunds. That portion of the ruins is the one that abuts upon the old churchyard, and faces the west, and at present comprising the "will office" and one or two private residences. The ruins are exceedingly picturesque, are draped by sundry kinds of climbing and other plants, and are at the present time rendered recyclicity beau. draped by shandry kinds of climbing and other plants, and are at the present time rendered peculiarly beautiful by the profuse flowering of numerous patches of the pretty yellow Wallflower, which in spite of the long spell of dry weather which has been experienced here are all growing luxuriantly; these patches, which are all, of course, self sown, and many of them are at a very considerable altitude—probably not less than our so feet from the surface of the self as what one all, of course, self sown, and many of them are at a very considerable altitude—probably not less than 40 or 50 fect from the surface of the soil, so that one can hardly help wondering how the plants manage to obtain the necessary moisture or nourishment required for their support. There are, however, many other plants, and even trees, which appear to take kindly to such situations, to which their seeds have in some way been conveyed by the agency of birds, or been wafted by the breeze to where they somehow vegetate, and become established. Among flowering plants which appear to readily make themselves at home in such situations may be mentioned the Achilleas, Alyssums, Arabis, Aubrietias, Antirrhinums, various kinds of Diaothus, Erinus alpinus, and many other varieties of alpine plants and annuals, &c., while various berry-bearing trees, such as the Mountain Ash, the Vew, the Holly, &c., are frequently found to take possession of walls, ruins, rocks, and inaccessible cliffs. I have even seen a Gooseberry bush take possession of walls, ruins, rocks, and inaccessible cliffs. I have even seen a Gooseberry bush take possession of walls, ruins, rocks, and inaccessible cliffs, and there ripen its fruit, while on a similar wall a blich tree attained to such dimensions as to endanger the wall by its oscillation during sions as to endanger the wall by its oscillation during windy weather, so that it is quite possible to render unsightly walls or ruins very ornamental by scattering the seeds of desirable species of plants upon their surfaces, and this should be done soon after rain has fallen upon them, or when they are in a moist con-dition, when the seeds will be likely to adhere to fallen upon them, or when they are it a must con-dition, when the seeds will be likely to adhere to them, while to further assist the fixing and germi-nation of such seeds a portion of fine soil should also be scattered over them. Crumbling walls, if at all damp or more or less shaded, are almost sure to be become clothed with the more common kinds of Ferns, but by shaking the fronds of the more orna-mental species upon the wetted surfaces of such walls or ruins they will generally be found to vegetate, and the more common or unduly free-growing kind may, the more common or unduly free-growing kind may, when found desirable, he weeded out, and such walls, &c., be thus rendered exceedingly interesting. P. G.

Canker in Apple Trees. - Accepting all that Plowright affirms on this subject confess to some difficulty in understanding why it is that of a number of Apple trees growing side by side, that of a number of Apple trees growing side by side, and of the same age, growing under the same conditions, some, though comparatively but a few, should suffer very much from canker, a few others only slightly, and the majority be absolutely free of the affection, robust, and healthy. We find, as a rule, that other vegetable fungoid diseases affect all the plants of the kind attacked equally. Thus the Peronospora infestans serves the plant growth of all Potatos alike first or last; the Hollyhock fungus is hardly less districtive when it once appears, and the Oidium Tuckeri treats all Vines alike when it gets a footing in a vinery. But here we find the canker fungus picking out a tree here and there only, and leaving the contractive treatment of the canker fungus picking out a tree here and there only, and leaving the contractive treatment of the canker fungus picking out a tree here and there only, and leaving the contractive treatment of the canker fungus. the majority quite unhurt. [As happens in analogous cases in the human subject]. Looking over a row of filty Apple trees of various kinds, some thirten years planted, I find not more than one-fifth to be affected planted, I had not more than one-hith to be attected with canker, all the rest, varying in robustness according to sort, yet all clean and healthy. The two worst cankered kinds are Reinette du Canada and Northern Spy, both curiously enough North American sorts. These have been almost killed, and are no longer worth retaining. Then Lord Burghley, Royal Russet, Gloria Mundi, Keddleston Pippin, Royal Pearmain, Natson Cedin, and Stumer, Pircin, are all worst. Gloria Mundi, Keddleston Pippin, Royal Pearmain, Nelson Codlin, and Sturmer Pippin, are all more or less affected, the first named being the worst. Margil shows some few big cankers in the main branches, the remains I had fondly thought of the hard weather some few winters back, but the rest of the wood is sound and clean. Mixed up amongst these trees, coming, indeed, next to some of the worst cankered, are Reinette Elanche, Stamford Pippin, Winter Peach, Old Winter Pearmain, Red Australian, Golden Noble Cellini Pippin, King of Pippins Flower of Kent, Kentish Fills. King of Pippins, Flower of Kent, Kentish Fill-basket, and many others, all as sound as can be desired. Now the question to be asked is this: why does this canker fungus attack certain kinds why does this canker fungus attack certain kinds only and leave others; or put it in this way, is the wood of certain kinds of Apples more amenable to the fungoid attacks than that of others. We have in the past credited the weather chiefly with the canker, and have explained that the reason why some trees suffered from it and others did not, on the ground that the wood of these kinds was more tender. Perhaps that explanation was so far imperfect that we should have said the wood of certain kinds needed either a warmer season to mature it, or else, and doubtless it comest to heasone thing in the ad-that the code in the control of the control o less it comes to the same thing in the end, that the roots of the trees producing this wood, were not in soil favour-able to the production of wood that was fully matured. Specially have we ascribed the dying bark of yearling wood, both on Apples and Pears, to defective root action, that in fact the wood died simply because it was imperfect or immature, and for no other reason. Still this form of decay has nearly always been termed or classed with canker. I remain of the opinion that unsuitable soil for particular sorts remains the chief cause of decay in such cases, whatever may be the primary cause of canker in big branches, or old hard wood. If a fungus be the cause, it should be exwood. It a linguist be the cause, it should be plained how it was that a recent severe winter produced canker wholesale where canker had never been seen before, literally destroying trees previously robust and healthy. I should like to learn the seen before, literally destroying trees previously robust and healthy. I should like to learn the opinions of some practical fruitists on this interesting subject, as we want not to be confirmed in deception but to be convinced of that which is true when proved. A. D.

Prunes, Servian and Hungarian, - Apropos of Prunes, Servian and Hungarian,—Apropos of what was recently stated concerning these fruits, and the failure to sell them here at a profit, I know from personal knowledge that the fruit, which is from the seedling Schwetche generally, for the natives seldom bud or graft it, is dried by the peasantry in their bakeovens. These are somewhat primitive contrivances, and being nasully without ventilation otherwise than what is present in an ill-fitting door, the fruits acquire a tarry flavour, slight certainly, but enough to place what is present in an in-neting door, the rituits acquire a tarry flavour, slight certainly, but enough to place them at a lower value than the more carefully prepared French goods. The overs are heated strongly, as if for baking a heavy batch of bread, but are allowed to cool so that a feather will lie on the floor without scorching; then the Prunes that have been lead out think on wooden trays are put into it seweral laid out thinly on wooden trays are put into it, several layers deep if necessary, spaces being left between the trays to permit of the escape of the moisture. The oven having been heated strongly will retain its warmth for two or three days, but the fruit is kept shut up for perhaps twelve to eighteen hours only. When cool they are usually placed in net or coarse canvas bags, hung up within the house in a cool place free from damp. Cheries are preserved in the same manner, but they are then little more than stone and skin. This method of drying fruits might be adopted in our country, so that instead of selling fruit at a loss, as is elfen done when there is a glut, it could be harvested for the short years that nearly always follow years of plenty. The l'ershore Damson laid out thinly on wooden trays are put into it, several

does not differ largely from the Servian or Bosnian Schwetche, and should make a dried preserve good enough for ordinary use. The Southern Europeans make a preserve from these Plans that keeps for years, and that, too, without the addition of any sugar. The fruits are picked and stoned and boiled in an iron vessel for twenty-four hours unceasingly, being kept stirred during the whole time to prevent the stuff getting burnt. The result is a brown blackish substance, slightly acid in taste, that is found to be good for all the purposes for which we use jams; with this advantage—that it can be sweetened to suit the palate, and which makes a pleasant acidulated summer dink when mixed with water, especially for young persons. I knew a dandy water, especially for young persons. I knew a dandy lieutenant who served in the Bosoian campaign using it instead of boot blacking when the latter article ran out with very lustrous effects, so that we may say its uses are somewhat varied. M.

Fruit Prospects in Yorkshire.—It is, perhaps, too soon to speak decidedly about the fruit prospects, but present appearances indicate beavy crops of all but present appearances indicate usary crops kinds. Apricots and Peaches had a splendid show of bloom and the fruit appears to have set well. Pluns, 11 everywhere, have been a sheet of white blossom. If the set be good the crop will be enormous. On Pears there has been also a fair amount of blossom, especiatly on pyramids and standards. Apples promise well, but, after the experience of the last few years it would but, and the experience of the last lew years it would be premature yet to speak with any certainty of the state of the crops. Apples were a poor crop in this country last year, so the crop stands a chance of being Strawberries and hush fruit promise to The weather on the whole has been a good one. e abundant. days the winds have been cold and the mornings have been frosty, but not sufficiently severe to do much damage to the fruit crop; altogether the fruit propects are at present cheering and with a fine season we may with confidence look forward to good crops, we may with con M., Saul, York.

Fruit Prospects in Lincolnshire. - Our fruit Fruit Prospects in Linconsnire. — Our fruit prospects up to Sunday morning, the 20th inst., was all that could be wished, in fact we had a better show of bloom, and the trees were in better health than we have seen them during the last six or seven years, but we are again doomed to disappointment. A sharp fact set in a Saturday avening on Sunday morning. frost set in on Saturday evening, on Sunday morning, the 20th, the thermometer registering 9°, and on Monday morning 3°, and this morning 6°. Plums, Pears, and Cherries are very much destroyed, and the full extent of mischief is not yet apparent. Gooseberries, which were set, are at least one half destroyed. Wall fruits which we have carefully protected with Wall finits, which we have carefully protected with covers on rollers, are safe, and an excellent crop. Spring gardening has also suffered with us. The Myosotis dissitiflora, which was in excellent bloom, Ayosolo dissilidora, which was in excellent bloom, is scorched as if by fire, and other plants have suffered more or less. We have had old N.E. by E. winds for the last ten days, and up till now we have no alteration. D. Lumsden, Bloxholm Hall Gardens, Stafprid, April 22.

Double Cinerarias,-I enclose you a few blooms of double Cinerarias, —I enclose you a few blooms of double Cinerarias. I have fifty plants in 24-sized pots with an average head of flowers 20 inches in diameter, and very compact. I am induced to send these for your inspection, having heard that they are considered not worthy of cultivation as they come considered not worthy of curivation as they come small; but I find them very useful, as they make a grand show just now, coming in between the single varieties now about over, and Pelargoniums which are not yet in. T. Piedger, The Gardens, Woodcote House, Exton. Afril 22. [Blooms large and good. Etc.]

CAPE BULBS .- A wrong impression prevails CAPE BULBS,—A wrong impression prevails in Europe respecting the treatment of Cape bulbs. It is commonly thought that, being indigenous to South Africa, they must require great heat to grow them to perfection; but this is not the case, for the reason that they begin to grow with the first rains in our autumn, and make their growth during the Cape writer flowering early in string, and are going flowering early in spring, and are again at rest before our hot weather sets in. Consequently an English summer is quite hot enough to bring them to English summer is quite hot enough to briog them to perfection. In Europe they would commence to grow about March, and should be protected under glass until May, and theo brought into the open air and placed in a sunoy position. They delight in a light sandy soil, well drained, and when at rest should be kept fairly dry and warm. Charles Ayres, Seedman and Florist, Cape Treen, South Africa.

ARAUCARIA IMBRICATA.— The largest of the Araucarias growing here is about 40 feet in height, with twenty-four tiers of branches, the lowest of which is lying on the surface bedded in moss and grass, and is perfectly green and healthy. They

which is lying on the surface bedded it most and grass, and is perfectly green and healthy. They measure 21 feet from tip to tip. It is a beautiful specimen, forming a perfect pyramid. T. Leslie, Ardarroin, Carelochhead, N.B.

Reports of Societies.

Royal Horticultural: April 22.

SCIENTIFIC COMMITTEE, -A. Grote, Esq., in the SCIENTIFIC COMMITTEE,—A. Grote, Esq., in the chair. Present:—Messis. Pascoe, Mangles, Mac lachlan, Glaisher, Wilson, Smith, Boulger, Ridley, Loder, Houston, and Rev. G. Henslow. Rhododndron Hybrids.—Mr. Mangles exhibited a large basketful of beautiful Rhododendrons, including the following remarks the bubbids.—Anderson House.

large basketul of beautiful Khododendrons, including the following remarkable hybrids: -Anderson, Henry, a triple hybrid, raised by Mr. A. Henry from R. formosum crossed by R. Dalhousia, crossed by R. Nuttalli; and with very large white funnel-shaped flowers with yellow throat—the foliage is dark green; B. Waitbil; second by B. Edwardthi, with home flowers with yellow throat—the foliage is dark green; R. Veitchii crossed by R. Edgeworthii, with large crimped petals and wide mouth—highly scented; it is called Otto Forster; a hybrid between R. Thomsoni and R. Fortunei, of crimson flower and dark foliage, Its stamens have "contabescent" or imperfect anthers, not unfrequently seen in hybrids. Another called the Countess of Haddington is the offspring of R. Dalhousiæ crossed by R. ciliatum and Princess Alice; raised from R. Edgworthii crossed by R. ciliatum. Ite also showed the following species:—R. vigratum a species with small lowing species:—R. virgatum a species with small pink axillary flowers interspersed amongst the leaves, not unlike a Weigelia; R. pendulm, a rare species, described as an epiphyte upon Oaks, and remarkable for the closely tomentose under surface of the leaves. It refuses to hybridise.

The Weather of the Winter 1883—4.—Mr. Glaisher

The Weather of the Winter 1883—4.—Mr. Glaisher read an interesting paper on the remarkably high temperature of the last winter. See p. 543: Arum proboscideum, —Mr. Wilson exhibited a blossom of this curious lower, a native of Italy. Equiretum telmateia. —Mr. Houston exhibited specimens showing spikes with branched apices, eovered with sporangia in every case. Narcissus Eulbocodium (Monstrous).—Mr. Boulger showed a species of Narcissus Bulbocodium with several flowers confluent, and the parts variously multiplied in consequence.

multiplied in consequence.

Potato Disease and Artotrogus,—Mr. W. G. Smith

Folato Disease and Artotrogus,—Mr. W. G. Smith made a communication on this subject, see p. 541.

Calceolarias,—Mr. Henslow reported on the monstrous Calceolarias brought by Mr. Smee at last meeting. They both consisted of two flowers combined, but while in one case the two "slippers" were distinct, in the other the two adjacent sides of the two slippers were coiled up into a spiral, and thrust into the common interior of the two petals.

Ferns Grezon in the Dark,—Mr. Henslow showed several petioles of fronds (the lamina not being developed) crown in total darkness in a temperature varying.

loped) grown in total darkness in a temperature varying from 60° to 90°. They were of a pale green colour, while Peas germinated with them were void of

chlorophyll. Whip made of Seaweed.—He also showed a whip ade by twisted fronds of a Fucaceous Seaweed, made by twisted fronds of a Fucaceous Seaweed, probably a Laminaria, and a pipe made in the Hartz Mountains; the stem of a braoch of Pinus, a head carved formed the bowl, with a head composed of Usnea barbata, and tassels of fruit of Alder. Ornithogalium, sp.—Hon. and Rev. Boscawen sent a spray of handsome species, with large white scented flowers, It was referred to Mr. Eaker for determination.

FLORAL COMMITTEE.—Present in Section A...
John Fraser, Esq., in the chair; Messrs. E. Hill, J. O'Brien, H. Ballantine, H. Williams, H. Herbst, J. Woodbridge, F. R. Kinghorn, and the Rev. G. Henslow. Section B.: Shirley Hibberd, Esq., in the chair; Messrs. W. B. Kellock, H. Beennett, G. F. Wilson, W. Bealby, J. Child, D. C. Lathbury, G. Duffield, H. Cannell, H. Eckford, and J. T. D. Llewelyn. The meeting held on Tuesday was an interesting and enjoyable one, a nice misscellaneous collection of plants in bloom being brought out. In Section A., some choice Orchids were exhibited by Sir Trevor Lawrence, Bart, M.P., viz., a small plant of Angræcum fastuosum, introduced from Madagascar by Mr. Sander; an extremely rare plant, if not actually the only one in the country. The habit of the plant shown was very compact, with the white blooms nestling quite close down amongst the foliage: Dendrobium Harryanum, a heautifuly golden, delicately fringed bloom, borne on a slender spray; D. cionamomeum, and Cypripedium oiveum. Messrs. Veltch & Sons, Chelsea, sent five seedling forms of their strain of Amaryllis; Cupidon, a deep crimson, having a white band on each segment deep down in the tube; Admiration, a large white ground, flower striped with lake, the centre green; Prince of Wales, with creamy-white upper segments, suffused and striped with cherry-red, the colour becoming more intense in the lower part of the tube—this was of a particularly pleasing form, and firm substance; Cirrus, a flower with ivory-white glound, which was striped with a dull red colour, and very distinct; Clytie, a crimson, very much reflexed bloom. FLORAL COMMITTEE.-Present in Section

Messrs. Cutbush & Son, Highgate, showed the rare Messrs, Cutbush & Son, Highgate, showed the rate Daphne Genkwa, a native of Japan, the sparsely placed blooms of pale lilac not making a plant of any great decorative value — if one may infer anything from the diminutive plants shown, Mr. B. S. Williams, the Victoria Nursery, Upper Holloway, exhibited several hybrid forms of Sarracenias, S. Mitchelliana×, a cross between S. Drummondi rubra and S. purpurea; S. Tolliana×, a hybrid from S. purpurea and S. flava; and S. Maddisonia×, the result of a cross between S. variolaris and S. psittacina. For these interesting plants of a genus that is far too little grown Mr. Williams received a Vote of the result of a cross between S. variolaris and S. positacina. For these interesting plants of a genus that is far too little grown Mr. Williams received a Vote of Thanks. The same exhibitor had also the pale green Ceologyne Tarishii, Epidendrum bicornutum, and a pale lilac small blossomed Rhododendron named odoratum, also a very deep rose-coloured Odontoglossum vexillarium splendens, a heautiful thing, which found numerous admirers amongst orchidologists and others. Mr. E. Wilson, gr. to II. M. Follett, Esq., Fernside, Bickley, had a fine form of Odontoglossum Ruckerianum insigne, O. polyxanthum, and O. Juteo-purpureum, for which he was awarded a Vote of Thanks, as was also Mr. J. Jackson, gr. to Sir Charles Strickland, Hildenly, Malton, for Cattleya citrina. A Vote of Thanks was accorded to Messrs. Wimsett & Co., Chelsea, for a curious Oncidium named provisionally carthaginense, for Odontoglossum hebraicum, Cattleya speciosissima and Cypripedium Roebellenii. For the beautiful Phalænopsis casta x., a cross between P. leuchoda and P. amabilis. Mr. Adlous, gr. to G. Heriot, Esq., Cholmley Park, Highgate, was awarded a Vote of Thanks, the same being also received by Mrt. L. Black, for a pretty seedling Adiantum, somewhat similar to A. gracillinum, but more robust. In section B. Messrs. Veitch & Sons exhibited a curious looking Ghent Azalea, named Diamant, having pale rose lower petals, and a radiated blotch on the upper, of a deeper rose colour; Azalea indica having pale rose lower petals, and a radiated blotch on the upper, of a deeper rose colour; Azalea indica Paul de Schryver, a smooth, well-formed flower, rosy-crimson in colour, having the upper part of the throat spotted with a deeper tint. Mons. A. L. Rossel, nurseryman, Ghent, exhibited a pretty Azalea indica Souvenir de Marie Rossel, a double flower of a pale flesh colour at the upper portions of the petals, and a much deeper colour at the base; this is a decided acquisition to the class, Mr. T. S. Ware, Tottenham, brought a good collection of Narcissi and other hardy flowers, amongst the latter being several other hardy flowers, amongst the latter being several noteworthy plants, such as Iris sibirica, Tritelia uniflora lilacina, Orchis morio, Trollius altissimus, and Frimula Sieboldi rosea alba, A beautiful single Narcissus is N. poeticus poetarum, which worthily carries on the poeticus varieties to a late period of the spring. For this display Mr. Ware was awarded a Silver-giil Banksian Medal; and Messrs. Lane & Son, of Berkhamstead, received a similar award for a grand display of Rhododendrons and Roses in pots. The colours of the former were chosen with great judgment. consisting of generally appreciated varieties. The colours of the former were chosen with great judgment, consisting of generally appreciated varieties. Their Roses were numerous, many well known lavourites being amongst them. Very well bloomed were Madame Burney, La Rosière, Celine Forestiere, Edward Morren, Glory of Waltham, and Princess Mary of Cambridge. Messrs. Faul & Son, The Old Nurseries, Cheshnut, had for the period of the year a heautiful collection of Roses, large in size, well furnoished with vigorous foliage and very generally with excellent blooms, the dwarfs certainly exceeding the standard forms in every point; very fine being Madame Therese Levet, La Souvenir d'un Ami, Inocente Pirola, Madame Falcot, Catharine Mermet, Comtesse Riza du Parc, Marie Van Houtte, Marguerite de Romain, Hypolite Jamain, Duke of Teck, and Alba rosea. A Silver-gilt Eanksian Medal was awarded for this admirable collection. Messrs, James Carter & Co., were awarderd a Bronze Banksian awarded of this admirable colection. Messis, James Carter & Co., were awarderd a Bronze Banksian Medal for a collection of Cinerarias in considerable variety of colour. The form in most cases was fairly good, but the habit less compact than is seen in the exhibits of other first-class growers. A Bronze Banksian Medal was bestowed on a splendid group of Reseda odorata pyramidalis grandiflora, exhibited Mr. Warren, Worton Gardens, Isleworth, Messrs, Barr & Son, Covent Garden, were awarded a Silver Dark son, Golden Gaude, refer hardy flowers and Narcissis, among the former being the curious Tulipa cornuta, Scilla campaoulata, Ixiolirion tartarieum, a deep blue violet-coloured bloom, quite a gem. Mr. R. Dean, Ealing, showed the unique Myosotis sylvestris elegantissima, a pretty thing where an edg-ing of variegated oeat foliage is wanted, the white variegation setting off the blooms in a capital manner. This exhibitor showed also Anemone coronaria var. This exhibitor showed also Anemone coronaria var. Celestial, as proving that seed from single flowers is capable of bringing blooms that are distinctly double. Mr. George Geggie, Waterloo Nursery, Bury, Laocashire, showed a considerable number of seedling forms of Primula Sieboldi, in which there was much variation of colour through different tints of rose, lilac, crimson, blue, &c. One kind, Novelty, was very prettily fringed, and was markedly different from any of the others. Messrs. Veitch & Sons showed six

boxes of cut blooms of Narcissus bicolor Empress and N. longifolius Emperor, two very showy varieties, looking particularly so as shown. A Cultural Commendation was given to Mrs. E. Weatherill, Woodside Nussery, Finchley, for four striking varieties of decorative Pelargoniums, named respectively Queen Mab, Alice, Excelsior, and Woodside Gem. Mr. W. Slogrove, gr. to Mrs. Crawford, Gatton Cottage, Reigate, received a Cultural Commendation for cut blooms of Chrysanthemums, and for a scarlet zonal Pelargonium, Mrs. Crawford, Mons. V. Lemoine, Nancy, had a plant of a double, blue-flowered Lilac, a very distinct subject indeed. The spikes were compact and of a medium size, although, as the bush had been grown in a pot, the whole habit of the plant may have become dwarfed, and it may therefore develope characteristics somewhat differing from those boxes of cut blooms of Narcissus bicolor Empress and lope characteristics somewhat differing from those seen if planted in the open.

The awards made were :-

FIRST-CLASS CERTIFICATE.

Section A.

To Sir Trevor Lawrence, for Angræcum fastuosum. To Sir Trevor Lawrence, for Dendrobium Harry-

anum.
To Sir Trevor Lawrence, for Odontoglossum cinna-

momeum.

To Mr. B. S. Williams, for Odontoglossum vexillarium splendens.

Section B.

To Mr. H. Bennett, for Tea Rose Standard de

To Mr. G. Geggie, for Primula Sieboldii Purity.
To Mr. G. Geggie, for Primula Sieboldii Brilliant.
To Mr. G. Geggie, for Primula Sieboldii Brilliant.
To Mons. V. Lemoine, for Syringa flore-pleno To Mons. V. Lemoine, for Syringa flore-pleno Lemoiniana.
To Mons. A. L. Rossel, for Azalea indica Souvenir de

FRUIT COMMITTEE.—Present; II. J. Veitch, Esq., in the chair; Messrs. J. Lee, G. Paul, C. Silverlock, J. Smith, J. Roberts, J. Willan, R. D. Blackmore, G. Bunyard, S. Lyon, A. Howcroft, and P. Crowley. Mr. Thrower, High Canons, Shewley, Herts, showed a seedling Apple in a good state of preservation, It was named High Cannon, and was awarded a First-class Certificate. Mr. W. Divers, Wiletton, Maidstone, showed a collection of thirteen awarded a First-class Certificate. Mr. W. Divers, Wierton, Maidstone, showed a collection of thirteen dishes of Apples; and Mr. Dean, gr. to G. Levison Gower, Esq., Titsley Park, Reigate, a collection of nine dishes, for which votes of thanks were awarded. From the Society's garden at Chiswick came excellent examples of Rhubarbs—the finest and heaviest sticks were of the Victoria variety, the others being Hawkes Champagne, Early Albert, and Linnæus.

National Auricula (Southern Section). - The exhibition held on Tuesday was, from all points of view, the best that has been held in the Southern division. The flowers generally—that is, the show division. The flowers generally—that is, the show and alpine Auriculas—were in good form all through, and we were glad to note a larger number of them, as well as an augmented list of competitors—a certain sign of growing prosperity. The Northern growers were represented in person by the Rev. F. D. Horner, Mr. R. Gotton, Mr. En. Simonite, Mr. Pohlman, Mr. Mellort, and others; all were competitors except Mr. Gorton. Mr. Horner had, we believe, some difficulty in getting his flowers in, but, nevertheless, well held his own throughout, though Mr. Douglas ran him very close for the Veitch nevertheless, well held his own throughout, though Mr. Douglas ran him very close for the Veitch Memorial Medal. Mr. Simonite had but very few plants, Sheffield smoke and the east winds heing too much for anything growing on his "bony strip" of a garden at Rough Bank. The Northern flowers are all late, so that the Manchester show should be a good one. Mr. Douglas and Mr. Turner were well in, but the amateur again beat the nurserymen in all but the class for twelve alpines, and with these Mr. Turner's well ship to hold his own. The nurserymen in an but the class for twelve alpines, and with these Mr, Turner is well able to hold his own. The Polyaothus classes brought little change from the usual order of things, a thin competition, and it was a matter of regret generally expressed, that through indisposition Mr. Barlow was not able to he present. The dozen Fancy Polyanthuses shown by Mr. Douglas were much admired for their high cultivation, and expect feith possibilities the measure feith possibilities the superh finish, considering the season. Perhaps the most interesting class of all, that at least, that took the popular faocy most was that for species of Primula, which brought out by far the nicest lot of plants we have seen together, and the greatest amount of variety,

have seen together, and the greatest amount of variety, and it introduced us to new competitors in this field in the persons of Messrs. Paul & Son, of Cheshunt.

New Auriculas were exhibited in considerable numbers, and Mr. Horner again proved the strength of his position as a raiser by taking the lead in all the show sections, while Mr. Turner was facile princeps with alpines. In the green-edged section the 1st and 2d prizes were won by Mr. Horner, with, 1st, Mr. Simonite's Rev. F. D. Horner, a very good green-edge without spot, black ground colour, and the paste slightly angular, a good all-round flower; and Kestrel (Horner), a very neat flower with a good green outline, rather faulty black ground colour, paste dense and circular, and the tube pale. The 1st

prize for a grey-edged seedling went to Mr. Horner for Merlin (Simonite), an improved form of Ajax, with a good greenish-grey edge, black ground, perfect paste, and pale tube. Mr. Douglas was 2d bere, with Marmion, a good silvery-grey edge, rather lacking in ground colour, but good in the tube. In white edges, Mr. Horner was again 1st, with Magpie, a very symmetrical flower, white pure, ground colour black, paste white, tube pure yellow. The same exhlbitor was 2d with Miranda, rather rough as shown, being irregular in outline. The best self was Mrs. Horner, also raised and shown by Mr. Horner. It is a fine violet self of the finest form. The 2d prize in the same class went to Mr. Horner also, for Enchantress, a pale violet self, with rather thin paste and pale tube. The best gold centred alpine was Mr. Turner's Unique, a large flower of first-rate properties, maroon, shading to dull red, with a good golden-yellow centre. Mr. Douglas was 2d, with J. Laiog, a very bright reddish-maroon, shading to crimson, with yellow centre. In creamy or white centres Mr. Turner to kob both prizes, with Rainbow, maroon-purple, a very refined flower: and Placida. reddish-maroon, shading to dull maroon-purple, shading to pale purple, a very refined flower; and Placida, reddish-maroon, shading to dull red. First-class Certificates were awarded to Mr. Horner for the show varieties, Merlin, Magpie, and

Horner for the show varieties, Merlin, Magpie, and Mrs. Horner.
Mr. Brockbank was the only exhibitor of novelties among gold-laced Polyanthuses. In the black ground section he gained a 1st prize with John o' Gaunt, a fine showy flower, beautifully laced. With an unnamed seedling Mr. Brockbank was also 2d. In red grounds, he was also 1st with Lord Derby, a fine flower of the Exile form.

nne showy flower, beautifully laced. With an unnamed seedling Mr. Brockhank was also 2d. In
red grounds, he was also 1st with Lord Derby, a fine
flower of the Exile form.

TWELVE SHOW AURICULAS, DISSIMILAR. — The
special prize given in this class, a Veitch Memorial
Medal and £5, was won by the Rev. F. D. Horner,
Lowfield, Burton-in-Lonsdale, Carnforth, with F. D.
Horner (Symoniet, Colonel Taylor (Leigh), Monarch
(Horner), green-edged; George Lightbody (Headly),
grey-edged; John Simonite (Walker), Magpie (Horner),
Monolight (Horner), Miranda (Horner), white-edged;
and Mrs. Douglas (Simonite), Mrs. Horner (Horner),
Mars (Honner), and Heroine (Horner), sells. The first
of the Society's prizes was won by Mr. Douglas, gr. to
F. Whitbourn, Esq., Great Gearies, Illord, with Colonel
Taylor (Leigh), Prince of Greens (Traill), Lancashire
Hero (Lancashire), Jumbo (Douglas), green-edged; George
Lightbody (Headly), Marmion (Douglas), grey-edged:
Frank Simonite (Simonite), Smiling Beauty (Heapl), whiteedged; and C. J. Perry (Turner), Pizaron (Campbell), and
Blackbird (Spatiding), sells. 2d, Mr. E. Pohlman, Halifas,
with Frince of Greens (Traill), Lancashire Hero (Lanedged, George Lightbody (Headly), grey-edged; Early
(Traill), Regular (Ashworth), Acme (Read), and Countess of Wilton (Cheetham), white-edged; and C. J.
Perry (Turner), and Kingdove (Horner), sells. 2d, Mr.
Turner, Slough, with Lovely Ann (Oliver), Talisman
(Simonite), Lancashire Hero (Lancashire), and Beauty
(Traill), green-edged; Stapleford Hero (Headly), Mrs.
W. Brown (Turner), grey-edged; Layd Sophia Dumaresque (Lightbody), Frank Simonite (Simonite), whiteedged; Meteor Flag (Lightbody), Topsy (Kay), and
True Briton (Hepworth), selfs. 4th, W. Brockbank,
Esq., Didsbury, Manchester, with Colonel Taylor
(Lancashire), green-edged; George Lightbody (Headly),
and Alex. Meiklejohn (Kay), grey-edged; Smiling Beauty
(Headly), John Simonite (Mellor), and
Res, Meiklejohn (Kay), grey-edged; Smiling Beauty
(Headly), Tone (Greens), and George
Lightbody (Headly),

(Lancashire), Confidence (Campbell), Lord of Lorne (Campbell), and Pizaro (Campbell).

(Lancashire), Confidence (Campbell), Lord of Lorne (Campbell), and Pizaro (Campbell).

Two Show Auriculas, Dissmilar,—ist. Mr. T. E. Henwood with George Lightbody (Headly) and Mrs. Douglas (Simonite). ad. Mr. E. Shaw with George Lightbody and C. J. Perry (Turner). 3d. Mr. C. Phillips, Hamilton Road, Earley, with Richard Headly) and C. J. Perry. (Turner). 3d. Mr. C. Phillips, Hamilton Road, Earley, with Richard Headly) and C. J. Perry. 4d. Mr. C. Phillips, Hamilton Road, Earley, with Richard Headly) and C. J. Perry. 4d. Mr. C. Phillips, Hamilton Road, Earley, with Richard Headly in the Company of the

and Alex. Menagouin.
TWELYE DISSIMLAR FANCY AURICULAS,—1st, Mr. James Douglas, with all yellow ground flowers; 2d, S. Barlow, Esq.
THE PREMIER AURICULA was Traill's Prince of Greens, exhibited by Mr. Pohlman.

ALPINE AURICULAS.

ALPINE AURICULAS.

TWELVE DISSIMLAR.—1st, Mr. Turner, with Garnet, Mrs. Llewelyn, Mrs. Thomson, Unique, Comet, Purple Gem, Luna, Napoleon III., Aurora, Mrs. Ball, Gem, and Murillo, all of his own raising; 2d, Mr. Douglas, with Sensation, Mrs. Llewelyn, Mrs. Mciklejohn, Ada Hartwidge, Dolly Varden, Mrs. Cope, and the remainder unnamed seedlings.

SIX DISSIMLAR.—1st, Mr. Turner, with Mrs. Ball, Troubadour, Comet, Lavinia, Rainbow, and Bayard; 2d, Mr. Douglas, with Mrs. Llewelyn, Rosanond S. Fellowes, Mrs. Meiklejohn, Queen Victoria, Amelia Hartwidge, and Ada Hartwidge; 3d, Rev. E. L. Fellowes, and two seedlings.

SINGLE SPECIMENS.—Gold Centres: 1st, Mr. Turner, with Unique; 2d, Mr. Douglas, with ascedling; 3d, Mr. Turner, with Unique; 2d, Mr. Douglas, with seedling; 3d, Mr. Turner, with Unique; 4th, Mr. Douglas, with Sensation; 1st hand 6th, Mr. Turner, with Unique; White or cream centres: 1st and 3d, Mr. Turner, With Unique; Alph, Mr. Douglas, with Queen Victoria and Ada Hartwidge.

POLYANTHUSES.

POLYANTHUSES.

SIX DISSIMILAR, GOLD-LACED. — 1st, W. Brockbank, Esq., with Lord Derby (Brockbank), Exile (Crownshaw), Prince Regent (Cox), John o'Gaunt (Brockbank), President (Hilton), and Black Diamond (Brockbank), President (Hilton), and Black Diamond (Brockbank), Qf. S. Barlow, Esq., Stakehill House, Castleton, Manchester, with John Bright (Barlow), Exile, Prince Regent, President, Cheshire Favourite (Saunders), and Model (Barlow), gd. Mr. James Douglas, with Exile, George IV, (Buck), Lancer (Bullock), President, William IV. (Buck), and Cheshire Favourite. 4th. Mr. R. Dean, Ealing, with Model, John Bright, Lancashire Hero, Lancer, Lord Morpeth, and a dark ground seedling.

ling.

THREE DISSIMILAR, GOLD-LACED.—1st. S. Barlow, Esq., with John Bright, Cheshire Favourite, and Exile; 2d. Mr. Douglas, with George IV., Exile, and Lancer.

3d. W. Brockbank, Esq., with a dark ground seedling, President, and Cheshire Favourite. 4th. J. J. D. Llewelyn, Esq., with Lancashire Hero, Rev. F. D. Horner (Jackson), and President.

The best single specimen was a Cheshire Favourite, shown by Mr. Brockbank.

TARLINE DISSIMILAR FANCY POLYANTHUS.—1st. Mr.

TWELVE DISSIMLAR FANCY POLYANTHUS.—1st. Mr. Douglas, with a grand lot of plants, well flowered, clean, and fresh, white, yellow, and parti-coloured varieties. Mr. R. Dean was 2d not in his usual form, his best

PRIMULAS.

PRIMULAS.

TWELVE PRIMULAS (at least six distinct species)—
1st, J. T. D. Llewelyn, Esq., with well-flowered examples of Primula Sieholdii and P. Sieholdii alcninat, p. japonica, P. verticillata simensis, P. silkdimensis, P. japonica, P. verticillata simensis, P. silkdimensis, P. cortosoides, P. rosea, P. obconica, and pulcherrima; 2d, Mr. Douglas, with a pretty lot consisting of varieties of P. Sieholdii, P. Munroi, P. obconica, and P. marginata, &c. Messrs. Paul & Son, Cheshunt, were 3d, with smaller examples, but more variety, their sorts being P. denticulata, P. japonica, P. acaulis alba (Purity), P. ciliata purpurae, P. rosea, P. Munroi, P. imbricata, P. viscosa, P. pubescens, P. farinosa, &c.

P. viscosa, P. pubeseens, P. farinosa, &c.
P. viscosa, P. pubeseens, P. farinosa, &c.
Royal Botanic: April 23,—This, the Society's second show of the season, was held in the new glass corridor and the adjoining conservatory, and brought a considerable quantity of useful plants together. The new plants which were considered by the judges as being fit subjects for a Botanical Certificate were Phalenopsis Casta, shown by Mr. R. Aldous, gr. to G. Heriot, Esq., Cholmeley Park, Highgate; Sarracenia Mitchelliana x. S. Tolliana x., Kentia Lindeni, Ptycosperma Seemannii, shown by Mr. B. S. Williams, Victoria Nursery, Upper Holloway; and Cypripedium insigne Sylhetense, shown by Mr. B. S. Williams, Victoria Nursery, Upper Holloway; and Cypripedium insigne Sylhetense, shown by Messrs. P. Veitch & Sons, Chelsa.

Was bestowed were Azalea Sonvenir de Marie Rossel, shown by Mns. A. L. Rossel, nurseryman, Ghent; Amaryllis Mrs. Hird, shown by Messrs. Paul & Son, The Oil A Investries, Chebanut; Azalea Paul de Schryver, and Amaryllis Admiration, and Princess of Wales, shown by Messrs. J. Veitch & Sons; Syringa Lemoiniana, a double variety shown by Mons. A. L. Rossel, nurseryman, Ghent; Amaryllis Admiration, and Princess of Wales, shown by Mr. Salea indica Antigone, shown by Mr. C. Turner, Royal Nursery, Slough. Cineraria Princess Ida, adark purple-crimson self; Beadsman, a rosy-maue self; and Pioneer, a rosy-purple, having a white circle round a dark eye, shown by Mr. J. James, Woodside, Farnham Royal. Cyclamen Hillingdon Rival, a white circle cound a dark eye, shown by Mr. J. James, Woodside, Farnham Royal. Cyclamen Hillingdon Rival, a white circle cound a dark perple-crimson self; Beadsman, a rosy-muse self; and Pioneer, a rosy-purple, having a white circle round a dark eye, shown by Mr. J. James, Woodside, Farnham Royal. Cyclamen Hillingdon Rival, a white circle cound a dark eye, shown by Mr. J. James, Woodside, Farnham Royal. Cyclamen Hillingdon Rival, a white circle cound a dark eye, shown by Mr. J. Hill, gr. to H. Little, Es

bloom.
In the amateurs' class for the best six Roses in pots, 1st, Mr. J. Perry, gr. to W. G. Powlett, Esq., The Woodlands, Cheshunt, who staged Ed. André, Madame V. Verdier, Ed. Morren, Magna Charta, Marie Baumann, and C. Joigneux; 2d, Mr. J. Wiggins, gr. to W. Clay, Esq., Kingston, For the best six greenbouse Azaleas in the amateur's class, 1st, Mr. G. Wheeler, with medium-sized plants; 2d, Mr. H. Eason, gr. to B. Noaks, Esq., Hope Cottage, Highgate; 3d, Mr. R. Bruter.

with medium-sized plants; ad, Mr. H. Eason, gr. to B. Noaks, Esq., Hope Cottage, Highgate; 3d, Mr. R. Butler.

In the nurserymen's class, for the best six greenhouse Azaleas, rst, Mr. C. Turner, Slough, whose exhibited plants consisted of specimens in no case exceeding 4 feet in height, well bloomed throughout, the sorts being lean Vervaene, Comtesse de Flandres, George Loddiges, Duc de Nassau, Mons. Thibaut, Madlle. Marie Lefebvre; 2d, Mr. H. James, Lower Norwood, who showed very beautiful Apollon and punctulata maculata. For the best twelve Amaryllis (open), rst, Mr. J. Hill, Hilligdon Place, with Burtoni, Firefly, Admiral Hornby, Hercelles, Prince of Teck, scarlet varieties; Jules Favre, Baron von Beust, and Princess Dagmar, white grounds and bright coloured stripes; 2d, Mr. R. Butler, gr., St. Dunstans, amongst this collection there being a variety of a deep blood-red colour, the petals of which were curiously twisted, and thereby rather adding to its beauty than otherwise. Madame Trietjens, a white ground having crimson stripes, was also a conspicuous flower. For the best nine Cincarias (open), rst, Mr. J. James, Woodside, Farnham Royal, Slough, its selfs and various coloured flowers being as usual very superior in every point; 2d, Mr. J. Hill; 3d, Mr. C. Turner, who had Rosy Morn, Kingston Eeasty, Joe, Decorator, Duchess de Morny, &c.; 2d, Mr. J. Hill, in whose lot where the brilliant Dr. Diamond and Emily Everard.

In the open class, for the best twelve show Auriculas

Filli, in whose lot where the brilliam Dr. Diamond and Emily Everar class, for the best twelve show Auriculas—1st, Mr. [as. Douglas, Great Gearies; ad, Mr. Pohlman; ad, Mr. C. Turner (each exhibitor showing probably the identical plants which had taken honours at

South Kensington the previous day). In the miscellancous class, Messrs. Paul & Son, Old Nurseries, Cheshunt, showed a large group of Roses in pots, beautifully flowered for the season, and were awarded a large Silver Medal for the same. A collection of Primula species and hybrids from the same firm received a Certificate. A Silver-git Medal was awarded to Messrs. W. Paul & Son, Waltham Cross, for Roses in pots, and Clematies R. Hanbury and Countess of Lovelace, also for five large boxes of cut Rose blooms, inclusive of a handsome one full of big Maréchal Niel Rose blooms, Messrs. Lane & Son were awarded a large Silver Medal for a collection of Roses in pots. Messrs, W. Cutbus & Son, Highgate, received a large Bronal Messrs and collection of mixed stowed a large Bronal Messrs and collection of mixed stowed a large Bronal Messrs and collection of mixed stowed a large Bronal Messrs and collection of mixed stowed a large Bronal Messrs and collection of pixel blosoms of which are quite ernamental; two Statices—Butcheri and Bondelli; Pavonia Wiotii, a Diosma or two, Pimelea Nieppergiana, Eriostemons in variety, and many other pleasing plants new and old. Mr. B. S. Williams, Upper Holloway, obtained a large Silver Medal for a collection of plants in which the warm-house section predominated. The same handsome Odontoglossum vexillarium spendens that had been shown at the Horticultural Society's meeting on Tuesday, Cochlostema Jacobiannyn, Oncidium leuchochilum, Dracsena Lin. predominated. The same nandsome Odontogiossum vexillarium splendens that had been shown at the Horticultural Society's meeting on Tuesday, Cochilostema Jacobianum, Oncidium leuchochilum, Dracema Lindeni, Gleichenias rupestris glaucescens, Mendeli, several Adiantums, Palms, &c., which assisted in making a very effective whole. Mr. Rumsey Joyning's Nursery, Waltham Cross, obtained a large Silver Medal for an admirable collection of Roses in pots, and for boxes of cut blooms of the same; and Messrs. Paul & Son, Old Nurseries, Cheshunt, were awarded a large Silver Medal for a group of standard Roses. A small Silver Medal was awarded to Mr. C. Turner, for his choice collection of show and alpine Auriculta; a Pronze Medal to Mr. J. Wiggins, for a group of Cinerarias; a large Bronze Medal to Messrs. Carter & Co., for a collection of Cinerarias; Messrs. Barr & Son a small Silver Medal, for Narcissus and hardy flowers; and to Messrs. Lane & Son, for a collection of hardy Rhoddendroms in pots, a large Silver Medal was awarded; Messrs. Carter & Co., receiving a Certificate for a wonderfully comprehensive and beautiful collection of cut blooms of Amenones and Ranuncultuses.

The Weather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON,
FOR THE WEEK ENDING WEONESDAY, APRIL 23, 1884.

D DAY.	BAROS	4eter	т	TEMPERATURE OF THE AIR.		duc fr Glai Tab	rome- tions om sher's les 6th ition.	Wind.	13		
MONTH AND DAY.	Mean Reading Reduced to 32° Fahr.	Departure from Average of 18 years.	Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 50 years.	Dew Point.	Degree of Humidity. Sat. = 100.	Average Direction.	RAINFALL
April	In. 20 80	Io.					٠		82 {	N.E.:	In.
17	29 80	+ 0.05	45.1	30.2	8.9	39 - 5	- 7.3	34 2	, °2 [N.E.: N.N.E.	0.02
18	29.75	0.00	46.5	36.0	10 5	40.1	- 6.9	32.5	74	N.E.	0 00
19	29.70	-0.06	46.2	36.0	10.3	39.8	- 7.4	33.0	77 {	E.:	0.00
20	29 78	+0.03	48.2	34.2	14.0	40.7	- 6.7	34.1	78 {	E.N.E. N.E. E.N.E. N.: N.E.	0.00
21	29.80	+ 0.05	50.3	34.0	16.3	40.9	- 6.7	34.8	80	N.: N.E.	0.00
22	29.80	+0.04	51.0	31.5	19.5	40.3	- 75	37.7	93	N.E.	0.00
23	29.76			30.9				32.4	70 {	N E.: N.N.E.	0 00
Mean	29.77	+ 0.01	48.5	34.1	14.4	40 -4	- 7.0	34 8	79	N.E.	0.03

April 17.—Frequent showers of hail in morning and afternoon, dull day and night.

- 18.—Fine and bright at times, cold wind throughout the day and night.

- 19.—Fice but dull throughout.

10.—Free but an incorporate
 20.—Dall day and night.
 21.—Fine and bright at times, fine night, clear sky.
 22.—Fine bright day and night, cleur sky.
 23.—Fine bright day, overcast at night, cold wind.

LONDON : Atmospheric Pressure .- During the week ending April 19, the reading of the barometer at the level of the sea decreased from 30.06 inches at the beginning of the week to 30.03 inches by 3 P.M. on the 13th, increased to 30.11 inches by midnight on the same day, decreased to 29.83 inches by 3 P.M. on the 16th, increased to 30.03 inches by midnight on the 17th, decreased to 29.85 inches by 3 P.M. on the 19th, and was 29.92 inches by the end of the week.

The mean reading of the barometer for the week at the level of the sea was 29.95 inches, being 0.06 inch higher than last week, and 0.03 inch above the average of the week.

Temperature. - The highest temperature in the shade in the week was 52°, on the 13th; the highest

reached on the 17th was 45°.1. The mean of the seven high day temperatures was 48°.6.

The lowest temperature was 35°, on the 13th; on the 15th the lowest temperature was 41°. The mean of the seven low night temperatures was 37°.2.

The greatest range of temperature in one day was on the 13th; the smallest was 8°.8, on the 15th. The mean of the seven daily ranges was 11°.4.

The mean temperatures were - on the 13th, 42.6; on the 14th, 43.7; on the 15th, 43.3; on the 16th, 43.3; on the 17th, 39.5; on the 18th, 40.1; and these were albelow their averages by 3.5, 2.6, 3.2, 3.6, 7.3, 6°,9, and 7°.4 respectively.

The mean temperature was 41°.7, being 5°.1 lower than last week, and 4°.9 below the average of

the week.

The highest reading of a thermometer with blackened bulb in vacuo placed in the full rays of the sun was 105°.3, on the 18th. The mean of the seven readings was 92°.5.

The lowest reading of a minimum thermometer with its bulb placed on grass was 27° on April 13. The mean of the seven readings was 29°.2.

Rain.—Rain fell on two days to the amount of

ENGLAND : Temperature .- During the week ending ENGLAND: Temperature.—During the week ending April 19 the highest temperatures were 56° at Truro, 55° at Plymouth, 54°,3 at Nottingham; the highest at Bolton was 49°, at Wolverhampton 49°,2 and at Liverpool 49°.6. The general mean was 51°,9. The lowest temperatures in the week were 24° at Camhridge, 29° at Hull, 29°,3 at Bolton; the lowest at Sunderland was 36°, at Blackheath 35°, and at Truro 33°. The general mean was 31°.1.

The greatest ranges were 29°,6 at Camhridge, 23°,6 at Plymouth, 23° at Truro; the smallest ranges were 14° at Sunderland, 17° at Blackheath, and at Liverpool 18°,0. The centeral mean was 20°.8.

14° at Suoderland, 17° at Blackheath, and at Liverpool 18°.9. The general meao was 20°.8. The mean of the seven high day temperatures was highest at Truro, 52°.3, at Plymouth 51°.4, at Cambridge 49°.5; and was lowest at Sheffield 45°.9, at Bolton 46°.2, and at Sunderland 46°.7. The general mean was 48°.3.

The mean of the seven low night temperatures was highest at Sunderland, 38°.9, at Truro and Plymouth, 38°.6; and was lowest at Cambridge and Wolverhampton, 33°.5 and at Bolton, 34°.4. The general mean was 36°.4.

The mean daily range of temperature was greatest at Cambridge, 16°.0, at Truru 13°.7, at Wulverhampton, 13°.4; and was least at Sunderland, 7°.8, and at Sheffield and Liverpool, 9°.5. The general mean

ffield and Liverpool, 9°.5. The general mean

as snenen and exception, 9.5. The general mean was 11°.9.

The mean temperature was highest at Truro, 44°, at Plymouth, 43°.5, at Preston, 41°.8; and was lowest at Wolverhampton, 38°.7, at Bolton, 38°, and at Hull, 39°.9. The general mean was 46°.3.

Rain .- The largest falls were 0.54 inch, at 0.27 inch at Nottingham, 0°.25 inch at Leeds; the smallest fall was 0.01 inch at Brighton, 0.03 inch at Plymouth, and 0.08 inch at Blackheath. The general mean fall was 0.16 inch. No rain fell at Truro.

SCOTLAND: Temperature.—During the week ending April 19, the highest temperature was 55°, at Greenack; at Aberdeen the highest was 49°.5. The general mean was 52°.9.

The lowest temperature in the week was 32°, at Perth; at Leith the lowest temperature was 38°.8.

The general mean was 38°.5.

The mean temperature was highest at Glasgow, 44°.8; and lowest at Perth, 42°.5. The general mean was 43°.8.

Rain.—The largest (all was 0.35 inch, at Perth, and the smallest fall was 0.04 inch, at Greenock and Leith. The general mean fall was 0.12 inch.

JAMES GLAISHER, F.R.S.

Obituary.

A CONSIDERABLE blank has been created in the ranks of the northern florists by the somewhat sudden death, last week, of Mr. GEORGE RUDD, Undercliffe, Bradford. He suffered a great bereavement a few months ago by the death of his wife, which preyed upon his mind. It is only quite recently that he had taken to raising seedlings of his favourite flowers, Carnations and Picotees, the climate of Bradford being very unfavourable to seed-saving. He was also a grower of Auriculas, and hybridised the flowers from which the late Mr. Thomas Woodhead's seedlings were raised. He has left a young family to mourn his loss, including an infant, which came into the world with the death of his wife.

Answers to Correspondents.

ALPINE AURICULA: J. C. Your seedling is perhaps good enough for a border flower, but it has nothing to recommend it to a florist.

ANTHURIUM: J. Hibbard. Of a form, and very good in colour. considerably larger. Of good average size and our. We have seen many

COOL VINERY: T. L. We cannot recommend you to use the rolled glass. You want the clearest glass you can get for a cool vinery—that which will admit the greatest amount of light and heat.

CROTONS: W. B. The leaves most probably fall off from the plants having experienced a sudden lowering of the temperature. We can see no appearance of disease.

GRAPE VINES, DISEASED: Vitit. The same appearance has been noticed on many samples of Vine foliage sent to us, and it is a matter which scientific men have not cleared up as yet. Something about your houses, or the soil the Vines grow in, or the manure given them—liquid or solid—perhape favours this particula allment. That is not work the property of any Vine so long as it is in vigorous growth.

GRASS: J. Buckland. It looks like Dactylis glomerata, Send again when in flower,

HOLLY LEAF INSECT: 7. M. The leaf-mining insect is Phytomyza ilicis. Collect the leaves as they fall off and burn them. We are still in the dark as to the cause of the other disease

INSECTS: W. M. P. & Co. A common weevil in gar-dens (Otiorrhynchus sulcatus). They feed at night, and should be captured by shaking the plants over a sheet or a newspaper.

LAWN MOWER: Vego. Consult our advertising

MESSRS. PROTHEROE & MORRIS' ORCHID SALE.— The Publisher desires to express his regret for a mispriot by which April 22 was stated as the date of the sale instead of April 29.

prot ty which April 22 was stated as the date of the sale instead of April 29.

NAMES OF PLANTS: A. B. Odontoglossum pulchellum. — S. B. Oxalis valdiviensis. — T. Mackir. 1 and 2, Primula capitata; 3, Aubrietia deltoidea; 4 doronicum Columne; 5, Narcissus incomparabilis, flore-pleno. — Old Subscriber. Violet Duchesse de Parma. The purple flower is a Phytolacca, but we have been unable to make it out. Can you oblige us with a good specimen and its history? — C. K. P. 1, Athyrium filix-feemina; 2, Berbens aquifolium; 3, Daphoe pontica; 4, Ribes aureum; 5, Corydais solida; 6, Primula cortusoides. — G. F. Eucharis candida, not Sanderi. — H. Odontoglossum crisquam 11. Suuan. 1, Odontoglossum crisquam 11. Suuan. 1, Odontoglossum crisquam 12, 2, O. Wilckeaum. — F. Neuman. Odontoglossum Rossii rubescens—a very good vatiety. — T. Cornelium. Epidendrum aromaticum. — T. W. Vanda Roxburghin. — J. K. L. Lyvaets and Odontoglossum Lindleyana. — W. B. Teffrey. Datura Stramonium. The Orchid flower is abortive — send a perfect one. — T. T. C. Helleborus viridis. — T. C. 1, Rubus spectabilis; 2, Pyrus salicifolia. — M. P. Aemonoe fulgens flore-pleno. — I. Capman. 1, Sella italica; 2, Cattha palustris. — G. O. 1, 2, 3, Not recognised; 4, Forsythia viridissima.

Oncidium Marshallianum: IV. G. A form with three lips; the two side ones probably represent two of the six stanens which a perfect Orchid flower should (theoretically) possess.

TENANTS' FIXTURE: Ponto. The district surveyor is, we believe, right. We know nothing of the case you

"All communications intended for publication should be addressed to the "Editor," and not to the Publisher or to any member of the staff personally. The Editor would also be obliged by such communications being urritten on one side only of the paper and sent as early in the week as possible. Correspondents sending newspapers should be careful to mark the paragraphs wish the Editor to see.

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INTELLIGENT READERS, PLEASE NOTE: — Letters re-lating to ADVERTISEMENTS, or to the supply of the Paper, should be addressed to the Publisher, and NOT Paper, should to the Editor.

CATALOGUES RECEIVED.

CRANSTON'S NURSERY AND SEED COMPANY, Here-ford — New Roses, Bedding, Herbaceous, and

lord — New Koses, Bedding, Fiertraceous, and Alpine Plants. THOMAS S. WARE, Tottenham, N.—Dablias and other Florists Flowers. DICKSONS & Co., Filig Park Nursery, Edinburgh— Florists Flowers. ROUGIER-CHAUVIÈRE, 152, Rue de la Roquette, Paris —General Plant Catalogue.

COMMUNICATIONS RECEIVED.—H. G. R.—C. W, D.—W. B.—W. H. F.—F. W. B.—M. Y. P., & M.—W. B., Oxford.—F.—E. S. D.—M. C. Joly.—H. L. C.—J. E. F. P., Mosteller.—J. C.—Eegland.—H. E.—T. W., Harrow.—J. H.—H. E. W.,—J. H., E. J. H.—E.

Markets.

COVENT GARDEN, April 24.

No alteration from last week, and no signs of recovery at present. The open weather of the first quarter of the year has inundated our market with all classes of goods both indoors and out, at a time when least required, and no improvement can be expected till a better demand is met by a more proportionate supply. James Webber, Wholesale Apple Market.

FRUIT.-AVERAGE WHOLESALE PRICES. S. d. s. d. Apples, ¼-sieve . . . 3 0 - 5 0 Cobs, per 100 lb. . . . 125 0 - 150 — St. Michael's, each 2 0 - 80 Grapes [new], lb. 4 0 - 10 0 St. Wichael's, each 2 0 - 80

Lemons, per case 10 0- 14 0						
VEGETAELES AVERAGE RETAIL PRICES.						
s. d. s. d.	s. d. s. d.					
Artichokes, Globe,	Herbs, per banch o 2- o 4					
per doz 3 0- 5 0	Horse Radish, bund. 3 0- 4 0					
- Jerusalem bush. 4 o	Lettuces, Cabbage,					
Asparagus, English,	per dozen 1 6					
per 100 8 o	- French Cos, each o 6					
- Spanish, buodle 2 6	Mint, green, bunch o 6					
- Toulouse, bund. 3 o	Mushrooms, p. baskt. 1 o- 2 o					
- Perpignon, bund. 1 o	Onions, per bushel 7 0					
Beans, French, p. 100 1 6	- Spring, per bua: o 6					
Beet, per doz 1 o	Parsley, per bucch o 4					
Cabbages, per doz 1 o	Peas, per quart 3 6					
Carrots, per bun 0 4- 0 6	Radishes, per doz 1 6					

POTATOS.—Keet Magnums, 80s. to 100s. per too; do., Regents, 80s. to 100s.; Champions, 50s. to 65s.—New: Jersey, 4d. lb.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.							
s. d. s. d.							
Aralia Sieboldi, doz. 12 0-24 0 Arbor-vitæ (golden),	Ficus elastica, each 1 6- 7 o Foliage Plants, vari-						
per dozen 6 o-18 o	ous, each 2 0-10 0						
- (common), dozen 6 o-12 o Arum Lilies, dozen 8 e-12 o	Fuchsias, per doz 9 0-12 0 Genista, per dozea 9 0-18 0						
Azaleas each 2 6-50	Heliotrope, doz 9 0-12 0						
Begonias, per doz 6 o-12 o Cinerarias, per doz. 8 o-12 o	Hydrangea, per doz. 12 o-18 o Lily of the Val., pot 1 o- 1 6						
Cyclamen, per doz12 0-30 0	Marguerite Daisy,						
- Extra size, each s o-10 o	per dozen 12 o-18 o						
Cyperus, per dozen 6 0-12 0 Dracæoa term. doz30 0-60 p	Mignonette, per doz 9 0-12 0 Myrtles, per doz 6 0-12 0						
- viridis, per doz., 12 0-24 0	Palms in var., each 2 6-21 0						
Erica, various, doz. 9 0-24 0 Euonymus, various,	Pelargoniums (sbow)						
per dozen 9 0-18 0	- scarlet, per doz 4 o 12 o						
Evergreens, in var., per doze 6 o-24 o	Roses, each 2 o- 3 o Spiræs, per dozen 8 o-12 o						
Feros, in var., dozen a 0-18 o	opinion, per dozen ii o o in o						

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.	
s. d. s. d.	s. d. s. d.
Abutilon, 12 bunches 2 0- 4 0	s. d. s. d. Marguerites, 12 bun, 3 0- 6 o
Anemones, 12 bun 2 0- 4 0	Mignonette, 12 bun. 3 0- 9 0
Arum Lilies, 12 blms, 3 o- 6 o	Narcissus (Paper-
Azalea, white, 12 spr. o 6- 1 o	white), 12 bunches 3 0- 9 p
Bouvardias, per bun, 1 o- 1 6	Pelargoniums, 12 spr. 1 0- 1 6
Camellias, per doz 2 0- 4 0	- rocal, 12 sprays o 6- r o
Carnations, 12 blms, 1 0- 3 0	Polyanthus, 12 bun, 2 0- 6 0
Daffodils, double, 12	Primroses, 12 bun o 6- 1 o
bunches 2 0- 4 0	Primula, double, bun. 1 o- 1 6
- single, 12 buo 1 0- 3 0	- single, 12 bup 4 0- 6 o
Eucharis, per doz 4 0- 6 0	Roses (indnor), doz, 2 o- 6 o
Gardenias, 12 blms 2 o- 6 o	- coloured, doz 3 c- 9 o
Heliotropes, 12 sp o 6- 1 o	Tropæolum, 12 bun. 1 6- 3 o
Hyacioths (Roman),	Tuberoses, per doz 2 0- 4 0
12 sprays o 6- 1 o	Tulips, 12 blooms 0 9- 1 0
Lapageria, white, 12	Violets, 12 bunches o 6- 1 0
blooms 3 0- 6 0	- Parma, per bup, 2 0- 4 0
- red, 12 blooms 1 0- 3 0	Wallflower, 12 bug., 2 0- 4 0
Lilac, white Fr., bun. 6 o- 8 o	White Jasmine, per
Lily-of-Valley, 12 spr. 0.0- 1 6	bunch 0 6- 1 0
,,,-a spr, o.y . r o	

SEEDS.

LONDON: April 23.-The market to-day was thinly attended, with but a limited business passing. As regards values, no material change can be noted. For Clover and other seeds there is a consumptive demand at unaltered quotations. There is rather more inquiry for auered quotations. There is rather more inquiry for Italian and perennial Rye-grasses. Spring Tares move off slowly on former terms. A little less money is asked for Hempseed. Feeding Linseed is flat. Other articles call for no remark. John Skaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.

POTATOS.

A quiet trade has been done with a moderate supply, at the following quotations:—English, Champions, 45s. to 55s.; ditto, Regents, 50s. to 60s.; ditto, Roses, 50s. to 55s.; ditto, Victorias, 60s. to 80s.; Irish Champions, 405, to 505, err ton; and German reds, 25, 6d, to 35, 6d, per hag. The import into London last week consisted of 1275 bags from Malta, 340 Antwerp, and 96 bags from Harlingen.

The following are the prices, current at market during the week:—Walls End—Hetton, 16s. 6d.; Hetton Lyons, 15s.; Lambton, 16s.; Wear, 15s.; East Harthepool, 15s. 9d.; South Hartlepool, 15s. 3d.; Tees,

DANIELS BROS.'

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We can highly recommend the following Choice Flower Seeds as being really fine strains and well worthy of cultivation:—

Per packet s. d. Auricula, choicest Alpine Antirrhinum Tom Thumb, splendid mixed
Antirrhinum Tom Thumb, splendid mixed
Aster, Victoria, Gaz Janki Antirrhinum Tom Tunno, splenate moved
Aster, Victora, fine double mixed
Aster, Pacony-flowered, fine double mixed
Aster, Pacony-flowered, fine double mixed
Aster, Dwarf Chrysantheman-flowered
Aster, Dwarf Chrysantheman-flowered
11. 6d. and 2
Begonia, Tuberous-rooted hybrids, very fine
maxed
11. 6d. and 2 0 Begonia, Tuderous-Tooted hybrids, very hate mixed ... 6d. and Carnation, splendid doable, from 1st. 6d. and remarkably fine strain ... 2st, 6d., and Calceolaria Dybrida, splendid mixed 1st. 6d. and From Mr. H. Brown, Langford, July 2st... "The CALCEOLARIA and CINERARIA seed that you sent me last year turned out splendidly; the livers were the admiration of all who saw them; many of the CALCEOLARIA blooms were quite 2st, inches across."

Cockscomb, Daniels' Giant Prize, fine

Cockscomb, Daoiels' Giant Prize, fine 2
Coleus, very fine mixed . 2
Cyclamen, Daniels' Giant Prize , 3: 6d. and 5
Dablila, choicest double mixed . 1: 6d. and 2
Dablila, choicest single mixed . 1: 6d. and 2
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Dablila, choicest single mixed . 1: 6d. and 2
Dablila Cho. Chanter's fine double . 1
Martgold, Striped French, Prize Scotch
Martgold, Striped French, Prize Scotch
Mignanette Victoria Giant Red new fine Mignonette, Victoria Giant Red, new, fine.

Mimulus, Daniels' large-flowered

Pansy, Daniels' Show and Fancy, splendid. Pansy, Daniels' Prize Blotched, magnificent varieties
15. 6d. and
Pansy, Daniels' Improved Striped, very fine
...

6

From Mr. A. J. BARNDON, Snodland, Rochester, April 6.—"The BLOTCHED PANSIES 1 had from you were splendid, I took First Prize at Malling Flower Show last year."

2 1 6 .. 15. 6d. and 2

Frinitia, Jameis choices mixed in the death of the from Mr. A. TURNBULL, Cemetery, Kelso, N.B., April 18.—"The two packets of PKIMULA seed I got from you last year were the finest I ever grew; and I have now grown Primulas for seventeen years."

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Stock, Brompton, giant scarlet Sweet William, Daniels' Prize Verbena hybrida, splendid mixed Viola, bedding, choice mixed Wallflower, double German, mixed 6d. and 1 0 6d. and 1 0 Zinnia elegans, splendid double, mixed 6d. and 1

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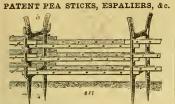
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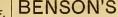
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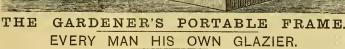
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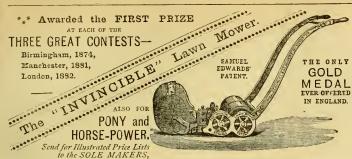
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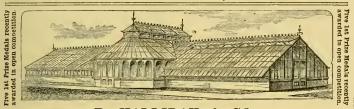
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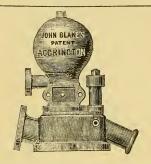
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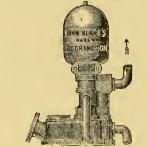
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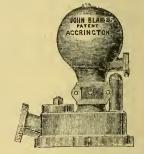
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Established 1841.

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Covent Garden, W.C., on WEDNESDAY, May 7, at halfpast 17 o'Clock precisely, the choice COLLECTION of
Department of the College of the Colleg Important Sale of Established Orchide.

On view morning of Sale, and Catalogues had. Thursday Next.—(Sale No. 6551.) SPECIAL SALE of ORCHIDS in FLOWER.

SPECIAL SALE of ORCHIDS in FLOWER.

M.R. J. C. STEVENS will SELL by AUCTON, at his Great Rooms, 38, King Street, Covent
and the Covent of the Covent of the Covent
are of Clock precisely, a choice COLLECTION of ORCHIDS
in flower, including grand plants of Mandevallia conchiftors,
M. maxima, and others, from W. Thompson, Esq.; too
lots of fine varieties of Odontoglossum Alexandre, Cattley
Meadelli, C. Mossite, and Dendrolium thyrsiflorum, from Mr.
F. Sander; and a quantity of nee plants of area species from
Mandevallia ignea and M. ignea Massangeana, M. Harryana,
Cattleya Ekimener inlba, with two leads;
Anguzeom falcatum, Cattleya Skinneri alba, with two leads;
Anguzeom falcatum, Cattleya Skinneri alba, with two leads,
and the Covent of the Covent of the Covent of
Thuraday Next.—(Sale No. 6651.)

SIN CASES of ODONTOGLOSSUMS, received direct.

M.R. J. C. STEVENS will include in his

Street, Cowent Garden, W.C., on THURSDAY NEXT,
May 8, Six cases of ODONTOGLOSSUMS, from a monntion of the company of the com

Un yiew morning of Sale, and Catalogues had.

Choice Collection of Nepenthes.

J. C. STEVENS has received instructions from Albert E. Ratcliff, Esq., of Edgbaston, to SELL by AUCTION, at his Great Room, 36, King State, Covent Gardea, W.C., on WEDNESDAY, May v. at half its entire COLLECTION Of NEPENTHES, all in grand health and strong plants. Amongst others will be found N. sanghinae (Veitch's best variety), hybrid amaculata, because a veitchis (magnificent plant), Northiana, &c.; also a few PHALENDORSIS and other ORCHIDS.

On view morning of Sale, and Catalogues had.

The Down House Collection of Orchidas

Onview morning of Sale, and Catalogues had.

The Down House Collection of Orchids

M. R. J. C. STEVEN'S has been favoured
by AUCHON, at his Great Rooms, 35. King Street, Covent
Garden, W. C., or the Collection of Sir William Marriott to SELL
by AUCHON, at his Great Rooms, 35. King Street, Covent
Garden, W. C., or the Collection of Sir William Marriott to SELL
how COLLECTION of ORCHIDS. The plants have been
selected with the greatest care for a period of fifteen years,
during which time the inferior varieties have been several toward
during which time the inferior varieties have been several toward
during which time the inferior varieties have been several toward
during which time the inferior varieties have been several toward
death. The whole Collection will be sold without the slightest
fine things will be found:

A Fides Larpentse
Angracum sequipular
A Fides Larpentse
Cattleya exoniensis

Downam

Babata, autumn flowering fine albata

Bayer fine

, Skinneri, fine plant , Skinneri, fine plant , superba splendens, fine , gigas, fine var. Cymbidium eburnenm , Lowii Cypripedium

Cypripedium Maulei Dendrobium Lowii
,, nobile giganteum
,, Wardi, old var.

Odontoglossum Coradinei
, crispum gutatum
, Halli leucoglossum
, polyxanthum
, Ruckerianum
Oncidium macranthum, fine
plant and var.
Vaoda corulea in quantity
, Hookerii, very fine
, teres aurorea, tare Odontoglossum vexillarium, fine var., &c.
On view mornings of Sale, and Catalogues had. Important Sale of Established Orchide,

Important Sale of Established Orchide,

MR. J. C. STEVENS will SELL by AUCGarden, W.C., on WEDNESDAY and THUSDAY, June 18
and the College of the College o

Odontoglossum Coradinei

By Order of the Trustees, who are now desirous of

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ALTERNANTHERA magnifica, amabilis, paronychioides major, paronychioides major aurea (new), versicolor, spathulata, amæoa, amœoa spectabile, 75. per 100, 65'.

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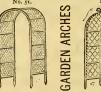
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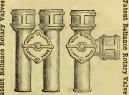
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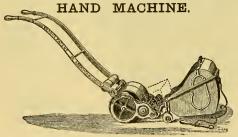


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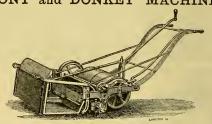
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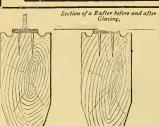
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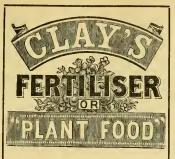
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SATURDAY, MAY 3, 1884.

OUR FRUIT CROPS.

OUR great dramatist's "cloud-capt towers" have hardly become a more apt illustration of the baseless fabric of a vision than has the glorious promise of a magnificent crop held out to us but a week or two since. Nay, so terrible has been the fierce grip of a succession of intense frosts that hardly a wreck of the fruit germs have been left alive. An old market fruit-grower who then was thought to be but a croaking raven, not long since remarked of the Plum bloom, that when the trees were so gayand rarely have they bloomed more abundantlythey never looked so well again the same season. There was the same old-world wisdom in that remark that is often found in those of weather observers, who say sometimes of a fine morning, that it is too proud to last. As a rule, the remark proves prophetic, as the sky soon becomes overcast and the glory of the morning is turned to weeping.

Our market friend was also a keen observer of Nature and the seasons, and his prognostication has too soon been verified. Alas! the trees have looked beautiful once this year, and they will look so no more. We shall look in vain on Plums, Pears, Cherries, or even Apples, for the rich displays of beautiful and profitable fruits. Not merely the hope, but the realisation has vanished. The destroying angel came not with fire and sword, but with piercing frost, and it entered even into the hearts of our fruit blossoms. Even now do we see the Apples opening their rosy-red blossoms in masses, clothing the trees with loveliness and beauty, but all is lifeless, soulless, dead. Perhaps here and there, in some favoured spots, or on hardier kinds, a few blossom-buds have been spared. but with the mass the bloom will be hollow mockery, as already we know that it is barrenuseless. It has been remarked of both Plums and Pears, that owing to the long spell of low temperature which prevailed, the foliage remained undeveloped, and thus no natural protection was given to the bloom. That may be to some extent true, but it is equally probable that the very abundance of the bloom on so many trees of itself checked the earlier bursting of leaf-buds. It is also certain that on few trees where there then happened to be little bloom and much leafage, the destruction has been equal; indeed the power exhibited by the frost in piercing and destroying the germs of even the most unobtrusive of bloom-buds on standard trees, seems to have been unusually potent, perhaps, nevertheless, that it was exercised with unrelenting force night after night.

We cannot yet tell how far bush fruits, Raspberries and Strawberries may have suffered; as much has depended upon exposure or otherwise. Still, with some certain loss, we may well hope that these fruits will still give to us a fair average crop. Gooseberries were singularly full of fruit, and fortunately were well leaved — still further less exposed to the keen, cutting winds. If the crop should not prove too heavily hit, something at least will be left to market-growers out of the general wreck.

To whatsoever meteorological cause we owe this disaster to our fruit crops, it is certain that it cannot be wholly, if at all, due to our insular position. Even whilst our later frosts were killing what previous ones had left alive, a bitterly cold wave of air passed over certain portions of the continent of Europe and worked cruel mischief amongst the Vincs in the wineproducing districts, creating perhaps more loss in many localities than has been produced here, where our market growers wisely have, as a rule, more than one string to their bows. Still, we should like to know more about the causes which operate to produce these depressions of temperature at such unseasonable periods than we do at present, and specially as to the future nature of our spring seasons, as if these are to display year after year the treacherous aspect shown this year, and in not a few previous ones, planters of fruit trees in the open will but sow the wind to reap the whirlwind. After all, what a reflection does this almost inevitable destruction of our fruit trees make upon the oft urged advice to plant far more fruit trees. Sanguine persons, and specially those who seem to exist on hope, may believe that good fruit crops will come sometimes, and that they will then pay. But year after year goes on, and a really good fruit season seems to become more and more an ignis fatuus, as this year - just within grasp, and then suddenly disappearing. In the meantime the labourer must be paid, the stock must be maintained, the landlord will call for his rent, the parson for his tithes, both ordinary and extraordinary, the rate and tax collectors will have their dues, and the unfortunate tenant and planter must live. And what upon? Your genuine market grower is a man of hard experience, and happily, as a rule, lets off the bitter disappointment he feels in nothing more harmful than expletives; then he presently accepts the position, and fights on as best he can. He does not go to Parliament with a wild cry for relief, for local subventions from the imperial taxes, for Acts of Parliament to shut out the contagion of the deadly east wind. The prospect of a great crop of fruit, that was to recompense for previous years of leanness-to furnish a nest-egg against coming ones, and to truly set him on his legs as a prosperous man-has faded out, and he must buckle-to, cutting down here, paring there, and grinding himself until the hard time is tided over. One large grower told us the other day that he had got a monster pile of new sieves and half-sieves in for Plums only, and had others in hand, but that he must stop the making now, and his baskets must remain goodness knows how long on his hands, as sunken capital, incapable of employment. How this fact illustrates the far-reaching effect of such a dire disaster to our fruit crops as that we now deplore! Apart from the grower and his army of labouring men and women there are the basket maker, the salesman, dealer, costermonger, jam maker, sugar merchant, the vast body of fruit consumers, indeed, who does not suffer?

We learn from private gardeners from all parts of the kingdom of the losses each one's fruit crops have experienced, and perhaps each one thinks his own case the worst. At least they may find some consolation in the fact that they are not growers for market and for a livelihood; that they have not a score or perhaps 100 acres of fruit orchards on their hands, the crop of which was to bring to them wealth and happiness, the destruction of it perhaps misery and ruin. If ever the market fruit growers of the kingdom merited our hearty sympathy they do so at the present moment. He would be, indeed, a courageous man who would, in the face of the terrible facts we have written of, still venture to advise farmers to turn fruit cultivators for market. Better for them ten times let well alone. Probably as it

is their Wheat plants and their pastures have brought them anxiety enough, and to add to those troubles the burthen of a destroyed fruit crop would be but to break the camel's back. We may plant and may water, but other power alone gives the increase, or, as now, withholds it. Let those who complain of our great importation of fruit from other and more favoured climes take that injunction to heart. Willingly would we grow ten times what we do, but as long as Nature refuses the increase we shall do wisely to direct our labours to more assured ends.

THE KAURI GUM FIELDS.*

SOMBRE, solemn, and grand are the Kauri forests of Northern New Zealand. If you want beauty of mixed foliage, of wide-spreading, branching trees, all interlaced with knotted vines and tufts of rosy blossoms—forests where the golden sunlight steals in delicately-divided rays through the exquisite canopy of tall Tree Ferns, to fall in radiant gleams on the carpet of all manner of silver-backed and other lovely ground Ferns—you will find these in perfection wherever the grievously "improving" hand of the settler has spared the primeval bush. Alas 'that we should have to say, such precious visions of Eden are already few and far between—only to be found in the least frequented districts.

But the Kauri forests are a thing altogether apart; and alas! indeed, of these also we must say that they are rapidly diminishing before the too busy axe of the lumberer. The Kauri [Dammara australis] is the Pine tree of New Zealand, one of the few repre-sentatives of the Coniferous family, and a very noble representative it is, though by no means answering to our ordinary notions of Pine trees, inasmuch as its foliage consists of leaves instead of needles; but it is tall and straight as a mast, and a very majestic mast, for these stately trees range from 15 to 50 feet in girth, and attain a height of from 100 to 200 feet ere they commence throwing out the branches which form their crown of sombre green. This is a special industry peculiar to Northern New Zealand, and the precious gum is a semi-fossilised deposit which is found buried at a depth of 5 or 6 feet below the surface of the ground, or tracts of open land, where in bye-gone ages grew Kauri forests which have long since disappeared. It is thought probable that these forests have been burnt, and that the exceeding heat liquefied the resio and caused it to flow more freely, for the digger is sometimes rewarded by finding a lump as big as his own body, though more frequently it lies buried in fragments from the size of an egg to that of a man's head.

The value of the gum varies with its colour, which is sometimes of a rich brown, sometimes bright amber, and ocasionally almost like pale crystal. Sometimes it is clouded, sometimes quite clear, revealing flies and tioy beetles which, perhaps for ages, have been enshrined in its transparent depths. The clearest and most crystalline pieces fetch the highest prices, and are carved into ornaments hardly to be distinguished from amber, but very much more brittle. When these extra fine pieces have been selected, the rest is sold in the Auckland market at from £30 to £40 a ton, and is purchased by English and American manufacturers of varnish. The amount collected must be enormous, as the value of the annual export from the colony ranges from £70,000 to £200,000. None is found in the Southern Isle, nor, indeed, to the south of latitude 37° 30′, which is the southernmost limit of the growth of the Kauri.

Whether the special qualities of the buried gum are due to old age, or to the possible action of fire, is unknown; but that which is obtained from the living tree is altogether worthless for the market, being soft and sticky—in fact, simple resin. Large quantities in this condition are sometimes found about the roots of growing trees in the forest; but of this very little can be turned to account.

At one time as many as 2000 men made their living as professional gun-diggers, but in these more settled days other occupations are found to be more remunerative, and a comparatively small number now adopt this as their regular employment—those who do so being for the most part the unsettled roving members of the community.

FLOWERS IN SEASON.

RHODODENDRON AUCKLANDII, - The annual flowering of this magnificent Himalayan species, and the comparative freedom with which flowers are produced, renders it of great value for the decoration of a cool house. In the Winter Garden at Kew, where it flowered about the same date last year, it is now very conspicuous, amongst several others, by its immensely large white blossoms. On first expansion the campanulate corolla is copiously suffused externally with rosy-pink, and to a certain extent also on the interior of the lobes, but after a time this gives place to pure white. The crimson bracts replacing leaves on the basal half of the young growths is another remarkable feature of this species. Plants in the open ground, with several inches of young wood, have had this almost completely destroyed by the 8' to 10° of frost we experienced lately. This species is figured in Dr. (now Sir Joseph) 11ooker's Rhododendrons, t. 11, and a painting of it (No. 257) is to be seen in the "North" Gallery at Kew. It is also known as R. Griffithianum.

MELASTOMA HETEROMALLA. - It is matter of regret that the flowers of Melastomads generally are not more durable, and the more so where, by reason of their great size, the number is so reduced that a succession can only be maintained for a short time. The subject of this note, to be seen flowering in the Palm-house at Kew, has terminal panicles of large flowers, so intensely purple as to appear of a fine blue. The habit of growth is rather tall and straggling, but the "leggy" appearance of this may be obviated by standing the plant amongst others of like proportions when the conspicuous and showy flowers will be seen to best advantage. It is figured in the Botanical Register, 644, under the above name, but according to the most recent authorities it is included amongst the Pleromas on account of the stamens being nearly equal in size, and the nvary free from the calyx-characters which are reversed in Melas-

CALOCHORTUS BENTHAMI.—Although this will not rival in beauty some of the other species, it is yet one that the plant lover will by no means pass over. It is of dwarf, slender habit, with lanceolate, long-tailed sheathing bracts, and pale yellow flowers, t\(^1_2\) inch across. The three petals are broader and rounder than the outer segments, and thickly studded with erect club-shaped glands. At the base of each is a purple spot in a shell-like depression. The anthers burst before the stigma is ready. We are indebted to Mr. Ware for this little gem.

OPHRYS TENTHREDINIFERA.—Very like our Bee Orchis, but the segments have little or no pink in them; the petals are undulate at the edges; the column is very short, and not hooked, as in the Bee Orchis; the lip is oblong, with two rounded lobes, separated by a shallow notch, and of the colour of brown velvet, marked with an H-like marking nf a deep metallic blue colour. From Mr. Ware, Tottenham.

HYPONIS STELLALA, — This is a Cape bullt, with grassy leaves and rich, bright yellow, star-like blossoms. Good pots of this with masses of dark green grass-like leaves and numerous flowers make a very fine show in the cool conservatory at this time of the year. This species and its allies like plenty of light; indeed, it is only during sunshine that they exhibit themselves in all their beauty. The attention of lovers of bulbous plants needs only to be called to this charming species, which would hardly be deliberately discarded after being once fairly tried.

GREVILLEA FUNICEA is a handsome neathabited shrub, with slender branches, clothed with oblong entire leaves, and terminated by short umbelliform racemes of brilliant scarlet loog-styled flowers. It is now flowering in the Winter Garden at Kew, and only needs to be better known to be much more widely grown. A good figure of the species is to be found in the Botanical Magazine, t. 6608.

GREVILLEA LINEARIS.—This is interesting as being one of the earliest of Australian plants introduced to cultivation in Britain. It was brought to England by Sir Joseph Banks, on his return from the celebrated voyage in which Botany Bay was first discovered. It flowers almost throughout the year,

^{*} From the Oil, Paint and Drug Reporter.

The foliage is narrow, and the clusters of flowers vary on different individuals from white to pale lilac-purple. In company with G. Thelemanniana and a number of other species of widely different aspect, G. linearis is now flowering in the Winter Garden at

THE WALDSTEINIAS .- These are charming oldfashioned Potentilla-like herbaceous plants, of dwarf stature, with large golden-yellow flowers. geoides and W. trifolia, both natives of eastern Europe, grow well in the ordinary garden border, and will take care of themselves in shady spots in the wild garden or by the woodland walk. They are thoroughly deserving of a place in any rockery, and will succeed almost in any soil or situation.

MUSCARI HELDREICHI. -- Perhaps the most pleasing of all the Grape Hyacinths in the large collection at Kew is M. Heldreichi, a charming species with bright sky-blue flowers. It flowers, too, later than many of its allies, grows as freely and flowers as profusely in the open border as our native species, M. racemosa, or the widely cultivated M. botryoides. M. Heldreichi is a native of the mountains of Greece, from whence it was introduced by Messrs. Backhouse not very many years ago.

PAMPISFORD HALL.

THE residence of W. Parker Hamond, Esq., is situated on the main road from the Whittlesford station of the Great Eastern Railway to Newmarket. It is about 2 miles distant from that station, 8 miles from Cambridge, and 50 miles from London. The mansion, which stands on a slight eminence, has lately been remodelled from designs by Mr. G. Goldie. It cootains a magnificent entrance hall, anteroom, library, dining and drawing-rooms, the ceilings of which are beautifully decorated in the Italian style, The library contains about 15,000 volumes, and in the hall and ante-room are splendid collections of rare china, minerals, and fossils. The estates came into the possession of the Hamonds about the seventeenth century by the marriage of Sir W. Hamond with the beings of the Parkers, from whom the present owner is directly descended. Ilis father, an ardent lover of hardy plants, laid the foundation of the magnificent and unique collection existing here, and which the present owner is continually increasing. The grounds were improved some years since under the direction of Mr. R. Marnock, who, besides other alterations, laid a new carriage-drive from the Whittlesford Station side of the Newmarket road, leading past the mansion into the same road about a mile further on.

To describe the collection of Conifers, extending over an area of 150 acres, and comprising over 400 species and varieties, it will be necessary to divide it into sections. I will, therefore, ask the reader to start with me from that which I will call the Whittlesford entrance.

Plantations on either side of this entrance of a semicircular outline meet at the mansion, the intervening space of several acres being park, judiciously planted with groups of Conifers and other trees. In these plantations we find grand examples of Pious Laricio. forty years old, So feet high, with fine and well proportioned stems 4 feet in circumference at 6 feet from the ground. P. L. calabrica, is a very striking and noble tree, much more dense in habit (the branches curving upwards) and more conical than P. Laricio; P. pyrenaica, 50 feet high, is oval in outline, and of much brighter green, with rich brown bark; P. monspcliensis, is said to be synonymous with pyrenaica, but is here much more upright in habit and of a duller green; P. excelsa, 40 feet high; P. mugho, 16 feet hihgh by 16 feet diameter of branches. Here olso are fine specimens of Thuiopsis borealis, Juniperus virginiana, Thuia occidentalis, evergreen Oaks, and English Yews, all from 30 feet to 40 feet high. A good Abies cephalonica, and a group of five Pinus Laricio, 80 to 90 feet high, towering above all others, deserve especial mention. As an ornamental tree P. Laricio should be extensively planted, being of rapid growth, and making fine straight and well proportioned trunks. If cut in a comparatively young state it would have a large proportion of sap growth, but when of mature age the timber is said to be equal to that of the Larch Fir. Continuing our walk through the plantations running parallel with the Newmarket road we find them intersected by grass walks, one of which, 2 yards wide and 130 yards long, is planted on either side

with Cupressus Lawsoniana erecta viridis, about 5 feet high, in a straight line. Other winding grass walks divide the plantations into sections, which are planted with young examples of choice Coniferæ, as well as numerous specimens of Abies nobilis, A. Nordmanniana, Cedrus atlantica, and C. Libani, 12 to 20 feet high, all healthy and thriving.

We have now reached the Newmarket entrance and carriage-drive to the Hall from the Newmarket side, about half a mile in length, having an avenue planted with single trees of Cedar of Lebanon, and English Oaks in groups of three, now from 10 to 15 feet high. On each side of the drive are two rows of Conifers between the road and the avenue; those next the drive being planted with Golden Yews, 30 feet apart, for the entire length. Between them are examples of many species and varieties of the smaller growing Coni'eræ, such as Cupressus Lawsoniana compacta, C. L. alba spica pyramidalis, C. L. ochroleuca, Piceas, Abies, Pious peuce, and others of dwarf The second rows contain Conifers of stronger growth, and include Pinus Benthamiana, P. Jeffreyi, P. macrocarpa, P. Bolanderi, P. Beardsleyii, and many others, forming at the present time an interesting collection and nursery from which, in the future, specimens may be taken to enrich the plantations, which even now abound with so many choice examples. From this new drive we enter the older plantations, and the first examples worthy of note are two fine trees of Pinus taurica, 30 feet high, a dense growing variety of the Laricio section. It is of conical habit, and a fine dark green colour. This variety is generally considered synonymous with P. Pallasiana, and by some with P. romana; but the examples growing here, of which there are several of each kind, are certainly very different in habit, although io a young state they might be difficult to identify. Following this carriage-drive to the mansion we note on either side fine young specimens of Abies Nordmanniana, A. Pinsapo, and A. lasiocarpa, Libocedrus decurrens, Juniperus chinensis, 15 to 20 feet high; Picea orientalis, 25 feet, a bandsome tree, which deserves more extensive cultivation; Pinus Gordoniana, a Mexican species, now 5 feet high, and doing well; two fine examples of Abies Pinsapo, 25 feet high.

Having now made a tour through the plantations on the north-east of the mansion, we pass to those on the south-west and south-east. There is a terracewalk on each of these sides, and the lawn and pleasuregrounds. A sunken Italian garden adjoins the terrace on the south-western side, in which are fine examples of Cupressus Lawsoniana erecta viridis, the lawo beyond and on the south-east having grand examples of Cedar of Lebanon planted fifty years ago, and now 50 to 60 feet high, magnificent trees, furnished with branches to their base; a fine Red Cedar, 40 feet high by 30 feet wide; Pinus excelsa, 50 feet, braoched to the ground; Thuiopsis borealis, 20 feet, a grand specimen; Pious Lemoniana, 25 feet; Pious pumilio, 30 feet diameter; Pinus escarena, 25 feet high; Picea mucronata, a very dense-growing and handsome variety of Spruce Fir, 20 feet; Abies Pinsapo, 60 feet, a magnificent specimen; Abies Hookeriana, 9 feet, and grand examples of Thuiopsis dolabrata, Thuia Lobbii, two fine Wellingtonia gigantea, each over 40 feet; Abies Pinsapo Hamondii, free-growing dwarf variety, only 2 feet high in the centre, and having a diameter of 10 feet; grand English Yews, 30 feet by 30 feet, branches sweeping on the grass; Chinese Junipers, Thuias, and Cupressus. Nor are fine examples of deciduous tree wanting to diversify in outline and colour, the more formal shapes and sombre hues of the Conifers, for we find groups of elegant Birches, a magnificent Turkey Oak, Copper Beech, and other equally pictorial trees amongst them.

This judicious grouping is most picturesque and beautiful, and whether seen in the glory of their summer foliage or in the depth of winter (as I once had the good fortune to see them), laden with snow, are equally interesting and beautiful. From the southern corner of the lawn a gradually descending pathway, planted on either side with Yews and Box whose branches meeting overhead form a covered way, leads to a disused chalk-pit. The sides have been sloped and planted with masses of Laurustinus, Mahonias, Golden Yews, and other dwarf growing plants. bottom is grass relieved with a few beds of Conifers and specimens, the latter are also planted in groups at the foot of the slopes and partly on them. Here are Thuia Lobbii (gigantea), 35 feet; Thuiopsis borealis, 35 feet; Chinese Juniper, 25 feet; Golden

Chinese Juniper, 6 feet; Juniperus virginiana glauca, J. virginiana Chamberlainii, J. macrocarpa, J. neoboracensis, J. cracovia, Thuis pendula, and a fine example of Libocedrus decurrens, 30 feet in height. On the level above are groups of Birches, Limes, Beeches, and deciduous trees in variety, intermixed with Pines, Thuias, Junipers, and other Conifers, making a charming background. A Roman dyke leads from the chalk-pit through the plantations for more than a mile towards the south-east. The sloping banks are planted with Yews, Box, Pines, and deciduous trees. The plantations are of Larch Fir, Austrian Pine, Oaks, Beeches, and some undergrowth of Hazel, Chestnut, &c., affording shelter to the hundreds of choice Conifera, the principal of which I will briefly describe.

From the terrace on the south-east front of the mansion there is a fine view of the woods, which are divided by a grass promenade 600 feet long and 100 feet wide. Cedars of Lebanon, now about 15 feet high, are planted on either side; they are growing well, and will in time form a grand avenue. Magnificent specimens of Wellingtonia, over 40 feet high, stand on each side as you enter the avenue, and will eventually form a conspicuous object to mark the entrance. In the plantations, extending over many acres, are numerous groups of healthy growing Conifers, the principal of which are Abies lasiocarpa, Nordmanniana, Pinsapo, and nobilis, Pinus macrocarpa, P. Jeffreyi, and P. Sabiniana, all from to to 20 feet high, and thriving so well as to inspire the hope of their making noble trees in the future. Fine trees in single specimens are distributed over the whole area, and include a handsome Abies cephalonica, 40 feet high, in vigorous health; a noble Pinus Laricio calabrica, 50'(eet; Thuia Lobbii (gigantea), 30 feet; Abies Gordoniana, 20 feet, an especially handsome species, a native of Vancouver's Island (a form of A. grandis); examples of the Mexican Pinus Hartwegii and P. Montezumæ, now about 12 feet high, and doing well; with representative examples of many other equally choice and interesting species and varieties. Spaces from a quarter to half an acre in extent have been cleared and treoched, in which are young plants of most of the newer kinds, now affording to the rambler through these charming woods an almost infinite number of interesting subjects, and presently will supply additional examples whereby this already large and unique collection may be enriched.

The lines upon which the planting of this large area has been carried out are grand in conception, and complete in their unity, whilst the arrangement and disposition of the various groups and specimens has been effected with great judgment and good taste. A few years hence, when the representatives of the foreign Conifers can dispense with the shelter now necessary for their protection, and when they themselves approach the majestic size to which it is possible for them to grow, then will the woods around Pampisford Hall be ranked amongst the grandest and most beautiful in

this country.

To enter into details of the immense number of species and varieties contained in this great collection would require more space than can be allotted to a general notice. A few of the most noteworthy, however, deserve mention:—Picea Parryana glauca (pun-gens), of a beautiful glaucous blue, and robust habit; Pinus densiflora, c'vigorous growth, deep greenfoliage particularly long white buds; a magnificent es pobilis glauca, silvery-blue in colour; and a Abies nobilis glauca, silvery-blue in colour; and a perfect specimen Thuiopsis dolabrata, o feet high-and well proportioned; Abies Finsapo glauca, a hand-some variety; Cryptomeria pungeas, smaller in foliage than C. Japonica, of pale green colour, and which does not turn brown in winter; Pinus parvillora, of the Strobus type, a native of Japan, where it makes a small tree of about 25 feet, the foliage is of a silvergrey, very distinct, the young cones on the specime here are formed round the points of the shoots of last year's growth, from there to five in number, now about half an ioch in length, and ripening the following very ricea excelsa perthensis. a pendulous about halt an lone in length, and referming the coroning year; Picea excelsa perthensis, a pendulous variety of the common Spruce, of vigorous habit, and going off with a good lead; Abies brachphylia, a species from Japan, promising to make a fine tree in our climate. Ficea politica, also from Japan, one of the

species from Japao, promising to make a nne tree in our climate. Fieca polita, also from Japan, one of the finest of all Spruces.

The collection of Junipers contains about one hundred species and varieties, all healthy and in free growth. There are fine specimens of J. Reevesiaoa, 15 feet; J. japonica, 8 feet; J. japonica albo-variegata, 8 feet, a handsome variety of a blush tint, the branches being spotted with creamy-white; J. oxycedrus, 9 feet; J. tigida, a distinct and handsome species, 6 feet; J. Berkeleyi, 7 feet, a strong growing variety of the fragrans type; J. diupacea,

15 feet, one of the finest of all the Junipers, J. neoboracensis, 8 feet; J. communis pendula, 20 feet, a perfectly formed and magnificent specimen. There are several varieties of Juniperus virginiana (the Red Cedar), of which J. Chamberlainii is perhaps the finest. A specimen here, 30 feet high, is of compact babit, the ends of the shoots being pendulous.

The Junipers seem lately to have been almost ignored in ornamental planting, which is to be regretted, as they have many qualities to recommend them, the chief of which are that they are very hardy, have great variety in outline and colour, and in growth range from species which creep on the ground to others that attain a height of, perhaps, 40 to 50 feet.

Cupressus Lawsonian raised from seed produces more variety in colour and habit than any other Conifer. Its tendency to sport into variegated forms is also well known. About fifty varieties have been obtained from various sources to form the collection here. The most

known. About fifty varieties have been obtained from various sources to form the collection here. The most remarkable amongst the strong growing kinds are C. L. intertexta, 12 feet, of vigorous growth; C. L. gracilis pendula, 3 feet, elegant and distinct; C. L. patula, 10 feet, a glancous variety of slender growth and branching habit; C. L. erecta viridis and C. L. Fraseri are good representatives of the upright growing varieties, C. L. minima glauca, C. L. compacta nana, and C. L. densa are of dwarf globular habit; C. L. alba 'spica, the white-tipped variety, appears in several forms; C. L. alba spica pyramidalis and C. L. alba 'spica, the white-tipped variety appears in several forms; C. L. alba 'spica pyramidalis and C. L. alba 'spica nana are dwarf growing kinds—very distinct and beautiful; C. L. lutea is of bright golden colour, free growth, and a most desirable plant.

bright golden colonr, free growth, and a most desirable plant.

The advantages to be gained by an inspection of this splendid collection are numerous. The grandeur and beauty of the larger specimens must be admired, the investigation of those of more recent introduction and consequently smaller size is interesting, whilst the facilities afforded for the comparison of the various species and varieties, which have been from time to time sent out under different names, is invaluable, Maurice Young, Milford, Godalming.

THE CEDAR FOREST OF CYPRUS.

IN 1879 Sir Joseph Hooker communicated to the Linnean Society "the unexpected discovery of a form of the Cedar of Lebanon (Cedrus Libani var, brevifolia, Hook. f.) by Sir Samuel Baker in Cyprus. The following extract from a letter lately received by the Director of the Royal Gardens, Kew, from Sir Robert Biddulph, K.C.M.G., C.B., the High Commissioner, and published in Nature, gives a more detailed account of the forest, and will no doubt be interesting to many readers: interesting to many readers :-

detailed account of the forest, and will no doubt be interesting to many readers:—

"Cyprus, March 25.

"With regard to the Cedars I went last summer all through the thickest part of the forests, including the Cedar forest, and I am able to give you some of the particulars you ask for, having noted them at the time. The Cedar forest occupies a ridge on the principal watershed of the southern range, and about 15 miles west of Mount Troodos. The length of the forest is about 3 miles, its breath very much less. A few outlying Cedar trees were visible on neighbouring hills, but on the ridge they were quite thick, and probably many thousands in number. I took the height have the sea by an aneroid barometer, and found it to be 4300 feet. The trees are very handsome and in good condition, but comparatively young. The smallest seemed to be from ten to fifteen years old; the largest, I am told by the principal forest officer, are probably not over sixty or seventy years. The context is that there were no seedlings or young trees under ten years; and, indeed, this is the same with regard to the Pine forests. It would seem as if the great influx of goats has been comparatively recent. I made a tour through the heart of the forest last August. I started from a point on the west coast, and from thence ascended to the main watershed, and kept along the top till I reached Mount Troodos, taking three days to do it. The coontry through which we passed on the first day was perfectly uninhabited, and a mass of hills and forest. The trees are the summary of the same sort of country as searcity of young trees, and most error of the was a seried of the main watershed, and kept along the top till I reached Mount Troodos, taking three days in the less and through the part of the principal of the princ



NEPENTHES CINCTA (Mast.), n sp.* WITH some hesitation we are led to consider this beautiful Nepenthes as an undescribed species. The material at hand is incomplete, but after due com-

Borneo by Mr. Burke for Messrs. Veitch. Burke, it appears, never noticed the plant itself, which was considered by those gentlemen to be a hybrid between N. Northiana and N. albo-marginata, and, indeed, it does to some extent possess the characteristics of those does to some extent possess the characteristics of those two species. Be its origin what it may, it is a very distinct and handsome form, and a great addition to a genus already rich in handsome forms. The plant is glabrous, or nearly so. The stems cylindrical, stont, the leaves approximate, as in N. Northiana, 12 by 3



FIG. 110.-NEPENTHES CINCTA.

parison with living and dried specimens, and with the descriptions and figures in books, we can come to no other conclusion than that it is an undescribed species. The seed was collected with that of other species in inches, coriaceous, oblong-lanceolate, tapering to a broad dilated base, dark green, midrib somewhat angular on the lower surface. The base of the leaf is intermediate between the sessile leaf of N. Northiana and the long tapering stalk of N. albomarginata. The venation is obscure, but there are two ribs on either side of the midrib parallel with the margin. The tubular, slightly ventricose, rounded at the base, pitchers measure 7-8 by 2) inches, their colour is green flushed with red, and with numerous irregular purple blotches; the rim is

^{*} Journ. Linn. Soc., Bot., xvii., pp. 517-19.

^{*} Nepenthes cincla, u. sp.—Glabra; caulibus teretibus; foliis pedalibus coriaceis oblongis supra basin dilatatam angulatis, nervo medio angulato, apice subpeltatis obuste bilobulatis; ascidiis 7—8 poll. longis tubulatis basi parum dilatatis, dorso aceivo purpurero valde promiencei notato, alis latiusculis margine laciniato dentatis, deotibus longibus, acutissimis, ore obliquo refexo undulato regulariter straito, subtus fascia albida notato; operculo suborbiculari a-costato calcarato calcari brevi bilobato; floribus hand vists.

very oblique, 4 inch broad, undulate, lobed, not entire as in N. albo-marginata, and finely ribbed, with a narrow whitish band around the top of the tube. The lower half of the pitcher is thicker in texture than the upper, the wings deep, extending nearly to the base of the pitcher, and fringed with long sharp teeth; the lid arches over the mouth of the pitcher—it is suborbicular and two-ribbed. The back of the pitcher is marked by a prominent purplish rib. At first sight it resembles N. Boschiana, but has glabrous leaves. M. T. M.

LÆLIA CRAWSHAYANA VAR. LRUCOPTERA, n. var.

A most lovely novelty. Take a small flower of Lælia autumnalis with light rosy sepals and petals, a rather uarrow lip, blunt at the top. The sulphur keels of the disc run to the base of the middle lacinia. The dark divaricate veins at the base have some branchlets; middle lacinia fine mauve-purple, side lacinia white. Column slender, white with some purple lines on the

sessile, rather leathery in texture, dull green, minutely hairy over the surface, distinctly crenate, white, and minutely ciliated on the margin, the largest about 3 inches long by 2 inches broad. Scape 2—3 inches long, terete, green, finely pubescent. Flowers 8—12 in an umbel; bracts minute, deltoid, whitish, pubescent; pedicels cernous, $\frac{1}{2}$ —\(\frac{1}{2}\) inch long. Calyx green, pubescent, \(\frac{1}{2}\) inch long; segments oblong, equalling the campanulate tube. Corolla a uniform bright lemon-yellow; tube cylindrical, \(\frac{1}{2}\) inch long; is gements obovate, deeply emarginate, \(\frac{1}{2}\) inch long, twice as long as the entire collar. Style short in the specimen seen, and anthers reaching nearly to the top of the tube. \(\frac{7}{2}\). Eaker.

DENDROBIUM NOBILE (Lindl.) SCHNEIDERIANUM, n. var.

This is a very interesting variety, having a yellow hue over the lip, and a quite novel, dark mouve.

sangea hieroglyphica; and even now its precise botanical position is not accurately ascertained. It was figured in the *Illustration Horticole*, t. 514.

ODONTOGLOSSUM SCHILLERIANUM, Rchb. f.

It was on January 15, 1854, that I published this in the Bont/landia, ii., p. 12, from a sketch in water-colours prepared by the late Herrmann Wagener. I gave a reproduction of this sketch in Xenia Orchidacca, ii., plate 22. Since that time up to our days the plant has not reappeared. Now, after more than thirty years, I have before me the fresh flower opened in England, and dried racemes and panieles, in excellent condition, all sent over by Mr. F. Sander. It is a kind of connecting link between the group of Odontoglossum newium and that of Odontoglossum newium and that of Odontoglossum buteo-purpureum. It surpasses in extent of flowers the very best Odontoglossum odoratum. The sepals and petals are cuneate oblong-acute, the lateral sepals directed downwards, quite unlike the fashion of Odonto-

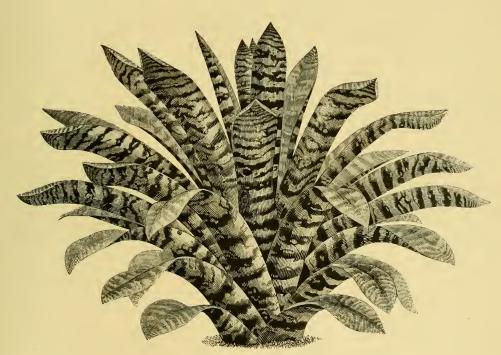


FIG. III. - VRIESIA HIEROGLYPHICA,

base under the fovea. Old bulbs short, ovoid, costate, fresh ones fusiform. Leaves thick, linearlanceolate, I had it from Mr. A. A. Peeters, St. Gilles, Brussels, who also sent a most remarkable Cattleya, that I regard a variety of Cattleya Massangeana itself. H. G. Rehb. J.

PRIMULA DOLOMITIS, Hort. Llewelyn.

The following is a description of this new Auricula, drawn up from a specimen which Mr. J. T. Dillwyn Llewelyn has presented to Kew, and which he exhibited at the meeting of the Auricula Society on April 22 Its affinity is with P. ciliata Moretti, which is identical with P. Balbisii, Lehman, and which is regarded by Nyman and others as a variety of P. Auricula, Linn. The present plant differs from P. ciliata by its more distinctly crenate leaves and longer corolla-tube. It came from Panereggio, in the Tyrol, on the east side of Monte Castellazo, and was collected by Mr. T. M. Franklen. In Haussmann's Flora of the Tyrol, vol. ii., p. 716, this is given as one of the localities for P. ciliata. Leaves 6—8 in a basal rosette, broad oblong, imbricated,

purple mark at the base of the lip. It forms a pendent body with a small included whitish square at the hase. The interior part is like the tail of a heath-cock, I had it from Mr. Oskar Schneider, Cromwell Range, Wilmslow Road, Fallowfield, whose fine Orchids have made a great impression both on the private visitors of Cromwell Range, and on those who saw them at the Manchester Exhibitions. It is great satisfaction to me to give the above name. H. G. Rehb. f.

VRIESIA HIEROGLYPHICA.

This is one of the most handsomely marked Brazilian Bromeliads with a tuft of oblong-acute leaves, chancelled on the upper surface, yellowish-green, marked with irregularly sinuous, transverse, rather broad purplish bars. Each leaf is about 70—80 centimetres long, 0.12 centimetre wide. Great difficulties have attended the introduction of this fine species into Europe, but the "Compagnie Continentale" of Ghent have been fortunate enough to raise a large number of plants from seed. The plant has been variously called Massangea tigrina, Tillandsia tigrina, or Massangea tigrina, Or Massa

glossum luteo-purpureum. The colour is yellow, with small, or large brown blotches; sometimes the flowers are nearly totally brown. The lip has puright basilar laciniæ, which are much reduced, very low, and an oblong-acute, undulate blade, covered with velvet, and two strong blunt calli, each with a small superior apiculus over the upper purple blotch on the disc. The base of the lip is white, the anterior part yellow. The column is slender, with a falcate one-toothed wing at each side of the proboscoid anther. I believe the species will have its success a estime. There are very numerous varieties, as was stated before. H. G. Rehb, f.

Masdevallia anchorifera, n. sp.*

Mr. Hübsch, collector for Mr. F. Sander, discovered this species in Costa Rica. It is near

"Mandevullita aucherițiera n. sp. - Afi. Masdevullius ochindoi, Rehb. f. Pedunculo lzvi, racemo pleiauho distincho sepalo impari trioagulo in caudam aprecem versus distatam exteoso; sepalis lateraihus bene comatis, caudis curvis ascendenti retrozia brevibus, callo utrique antice in utroque sepalo; and cati retrozia brevibus, callo utrique antice in utroque sepalo; cati contrata de la comatica del comatica de la comatica del comatica de la comatica del comatica de la comatica del comatica de la comatica del comatica del comatica de la comatica del comat

M. ochhodes. The pedanole is quite even. The raceme bears numerous distichous flowers, which appear in succession, evidently not all at once. The dried outer perigone is fine purple, the borders of the side sepals ochre with some purple spots, and the same colour at the base of the tails of the odd sepals. Petals fine orange with purple nerves. Lip orange or sulphur. It looks very effective in the recurved tails of the connate sepals; and this suggested the comparison with an auchor. H. G. Rekb. f.



EGYPTIAN GARDENS.

On leaving Alexandria, to take the train for Cairo from the old station of Miniet-el-Basal (great market of Alexandria), 4 kilometres from the Place des Consuls, the road traverses a superb forest of Date Palms, which looks especially well in antumn when these trees are loaded with fruit. The Date Palms are cultivated in forests, and wave their fronds in the air, about 60 or 70 feet above the ground, and with their straight stems, 6 to 9 feet in circumference, produce an astonishing effect, especially upon those who see them for the first time when arriving from Europe, where we see but small specimens of these trees in greenhouses.

The station of Miniet-el-Basal (the Onion market) is now only used for merchandise. Another station has recently been constructed nearer the town with the framework of a conservatory the size of that of the Société d'Acclimatation of Paris, and even larger, and which was ordered by the late Said Pacha during his visit to Paris in 1860. This great conservatory, which remained for fifteen years in the warehouses of Alexandria, has at length been utilised, but covered with zinc instead of glass. From Alexandria to Cairo the journey by express train takes four hours and a half. At Kafr-zayat, a station situated halfway to Cairo, the train stops for 20 minutes; there is an abundantly provided buffet, and a European table-d'hôte. At intervals on the journey the Arab children offer at every station little baskets (made of Juneus spinosus) filled with fruits, such as Mandarin and Blood Oranges in winter, Loquats in spring, Bananas and Figs in summer, and enormous Pomegranates in autumn, which the European travellers buy for one or two piastres. For the Arabs and the Fellahs there are Radishes and green Onions in winter, Chick-peas and Fenugreek in spring, Cucumbers and Water Melons in summer, and Dates in

The chiel garden worth visiting at Cairo is the park of Ezbehieh, situated in the centre of the European quarter, and having an area of upwards of \$5,000 square yards of an octagonal form, with four gates—north, south, east, and west. This garden was reconstructed in 1871 and embanked 6 feet all round, especially in its circular part. In the centre is a great basin fed with water by a cascade, falling from a reservoir, constructed above a grotto, and hidden by a rustic kiosque. There is a concert of military music given there every afternoon, during the promenade hours.

The lawns are formed of Zipania nodiflora. The most remarkable of the old trees of this garden were carefully preserved during the alterations, especially fine specimens of Tamarix arborea, Albizzia lebbek, Cassia fistula, &c. All the other plantations date from 1871, and are specimens taken from the old Khédivial nursery of Ghézireh, established by us in 1868, and which was closed in 1879, on the abdication of Khédive Ismail. After the alterations, the garden of Ezbekieh was thrown open to the public in 1871-72; but the Arabs or Fellahs, who frequented it in great numbers, put themselves so much at their ease there, that the custodians were obliged to put turns'iles at the gates, and charge a copper piastre (about a halfpenny) as an entrance fee to get these objectionable visitors, who made their ablutions in public on the borders of the lake, occupied a whole seat, or two or three chairs, where they stretched themselves to rest, or busied themselves with the capture of sundry parasitic insects, in great numbers, throwing them right and left without killing them, following the Mussulman custom, but leaving them to be swept up by the European ladies with their long dresses. G. Del-hecalerie, in "Elllustration Horti-

Çhe Posery.

MARECHAL NIEL ROSE UNDER GLASS. - The present is the best time for pruning this Rose-or, at least, as soon as the last bloom has been cut; and the best results are desired, it should be done in no balf-hearted way. By this we do not mean that last year's wood or shoots ought to be cut back to about half their length; on the contrary, we would say cut all away to its base. There need be no apprehension as regards the old wood breaking again after being subjected to this apparently harsh treatment, for vigorous young shoots will be pushed forth with freedom. In a three-quarters span-roofed vinery here there is an old tree-planted probably within a year or two of the variety being put in commerce, being at 3 feet from the ground 11 inches in circumferencewhich has for the last four years been subjected to the treatment herein advocated, and that it does not show any symptoms of resentment is evidenced by its having this year produced over 20 dozen blooms of more than average quality. A greater number might have been obtained, but it was thought advisable to resort to a little thinning out when the buds were in a young state. The shoots are trained transversely along three rows of wire fixed to the rafters of the back portion of the roof. Along each wire three shoots only are allowed to grow, and by the end of the year not only have they grown the entire length (24 feet), but there is generally a yard or more to spare; this is cut off towards the latter part of January. I may here say that the roots are outside, and receive nothing in the shape of watering except by rainfall and the uprising moisture from the subsoil, the situation being low and damp. Whether this hard pruning will answer with pot Roses I am not at present prepared to say; but by way of an experiment half of our stock (hybrid perpetuals) were so treated as soon as they had done flowering, and have now young shoots 3 and 4 inches long. After they were cut back, and begun to break again, the plants were repotted into fresh soil; all bloom-buds will be pinched off during the summer, and towards the end of May we shall move them outside into a sunny position, and plunge the pots in ashes. 7. H.

Notices of Books.

The Illustrated Dictionary of Gardening;
a Practical Encyclopedia of Horticulture. (L.
U. Gill, 170, Strand.)

Cassell's Popular Gardening. Edited by D. T. Fish. (Cassell & Co.)

We bracket these two publications together, not with any view of making comparisons between them, but because the aim of the two is identical, although attained by opposite methods. The Dictionary of Gardening, as its name implies, begins with letter A, and so far as we can judge from the part before us, is intended to comprise a brief account of the most important plants in cultivation, their appropriate treatment, the explanation of the technical terms in common use, the insects injurious in gardens, and so forth. The information appears to be well chosen, and well suited to the class of readers for whom the work is prepared. Necessarily the descriptions are very short, and this leads us to note a defect which it is not too late to remedy in future parts-viz., some indication of the leading work or works where fuller information may be obtained; thus a reference to Bentham and Hooker's Genera, in all cases, to the Botanical Magazine, or other illustrated periodicals, for figures, to such works as Veitch's Manual of Conifers, &c., would be desirable additions, and would take up but little room. Some further botanical supervision is also apparently needed. The account of Abies, for instance, is sadly confused, and the species mentioned do not agree with the assigned characters The species mentioned are all, or of the genus. mostly, Silver Firs, but the character of the genus, if it applies to anything, applies to the Spruce, as really of no particular moment whether we call the Spruces Abies and the Silver Firs Piceas, or vice versa-there are good reasons for either practice, but authors are bound to be consistent, and to tell us in what sense they use the words, or the synonymy

of these genera will be "much confused." The book is clearly printed and copiously illustrated, but the absence of any scale gives rise to the erroneous notion that the Fly Agaric is as big as the American Agave. We have no doubt the Dictionary will be found very useful for reference. The misprint Abaraxis on the first page should be corrected in another edition.

Cassell's Popular Gardening, it is to be presumed, is destined as a candidate for the suffrages of the same class as the Dictionary; but it is clear already that, owing to the different treatment of the subject, the two works will be so different in character that he who possesses the one will not by that circumstance feel himself the less inclined to have the other. The coloured plate which meets our gaze as we open the part may attract some readers, but it find favour with the members of the National Rose Society. "Cassell," does not begin like the Dictionary with A, but with garden pots, of which an interesting account is given touching on their manufacture and variations. Touching glazed pots, the old controversy about which has lately been revived, the writer sums up that the majority of gardeners "shun them as they would the plague." The cost is almost double, and as they are equally or more liable to breakage, the corresponding advantages, if any, hardly make up for the enhanced cost, Following the article on pots is one on levelling-a useful article, much needed by amateurs and young gardeners. Florists' flowers, vegetable physiology, vegetable culture, Roses, sub-urban gardening, with some useful plans; flower gardening, Ferns, herbs, hardy flowers, greenhouse plants-these are among the subjects treated of. Something for everybody. It will not be for want of books if the gardening of the future does not surpass that of

FORESTRY.

WORK FOR THE MONTH, - The past month has been characterised by a continuance of cold casterly winds which have retarded vegetation very considerably, and been anything but favourable to recently transplanted trees and shrubs. The latter, especially where growing in light, dry soils, have fared worst, for the keen penetrating east winds, determined to ransack every corner, and enter where nothing else can find an exit, seem to parch and dry up even the life-giving elements of the plants. Under these circumstances careful and regular watering will have to be resorted to, more especially in the case of newlytransplanted evergreens and large ornamental trees. Where the ground surface around large transplants has not been mulched, it is a good plan to hollow the soil about the tree stems into a sort of basin as a receptacle for the water. Syringing overhead is especially beneficial, and may in all cases be practised with the best possible results.

THE PEELING AND HARVESTING OF BARK WILL he the principal work of the month, and to which everything else must give place. Have all bark put on the drying ranges each night, or oftener if found necessary, the smallest in the bottom and the largest top for covering. Where the stools are intended for coppice insist on the use of the saw in felling, and have the stools well rounded off to promote a free growth of the young shoots. Have timber and branches removed from the woodland as soon as convenient after the wind-up of barking. Finish the sowing of coniferous tree seeds as early in the month as possible, and pass a light spiked roller over the surface of early sown beds, which at this season are apt to get baked and hard, for the purpose of loosening the soil. Keep the hoe going in the nursery, and so prevent weeds coming into seed. Dig between the rows of plants, and trench deeply all vacant horders.

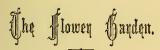
THE TRANSPLANTING OF SEEDLINGS may now be done successfully, indeed the present is perhaps the best time for removing young Pines and Firs. A luxuriant growth of young hedges may be promoted by carefully digging or forking the soil for a couple of feet in width along the line of fence. Paint outdoor work of all kinds, such as fences, gates, doors, &c., during dry, warm weather. Repair rustic arbours, bridges, and seats, at the same time giving a coat of paint or varnish where necessary. Where not already done, put all fences in a thorough state of repair, as stock are usually turned into their summer

quarters during the early part of the present month. The reclaiming of land, fencing, draining, road-making, and levelling may now go on as time permits, this being about the best season for the heavy cartage occasioned thereby. Collect refuse for converting into macure, and turn all compost heaps formed during the early part of the season,

TIMBER FOR HOME CONSUMPTION should be sawn up and placed in a dry, airy position for seasoning. The late storms, so destructive to woodlands generally, will have thrown a quantity of timber on hand, which should be lotted for sale by private treaty or auction. The following are current prices for the various kinds of timber, of average quality, realised on this estate:—

		Pe	r cul	bic	foot.		Pe	r cul	bic	foot
				s.	d.				s.	d.
Oak				1	6	Willow			0	7
Ash				1	8	Poplar			0	7
Beech				0	7	Lime			0	10
Rirch				0	9	Scotch Pine			0	8
Alder				0	10	Silver			0	8
Elm				I	6	Spruce ,,			0	8
Sycam	ore			I	5	Larch			1	2

The above may be considered about the average prices of timber in this district, unless that of Oak, Larch, and Elm, which are to some extent affected by boat-building on the Menai Straits. There is both a railway and port on the estate, thus affording every facility for the removal of timber. A. D. Webster, Penrhyn Castle, North Wales,



SUMMER-BEDDING PLANTS. - Now that the weather has become mild, advantage should be taken of it to remove from the vineries or other heated structures all such plants as will bear removal to the open air with safety, but where cold frames or pits are plentiful it will be safer to make use of them for this purpose for a short time, but as many have not sufficient of these convenient structures all the hardier kinds of plants may be transferred to the open air, provided they are hooped over and carefully protected from frost by mats, Frigi-Domo, or other similar material. The nearer they can be arranged to the flower garden the greater will be the saving in time and labour when the operation of planting commences. They should be placed on a bed of ashes in a partially sheltered position where they will not be fully exposed to cold winds, and where water is conveniently close at hand. The sowing, pricking out, and transplanting of annuals, biennials, and peren-nials, should now be proceeded with. The more tender kinds should be sown either in pans or boxes, and placed in a gentle heat till they germinate. Those less tender should, after sowing, be placed in a cold frame, and the hardier kinds may be sown in an outdoor border, either in seed-beds, to be afterwards transplanted, or they may be sown at once in the positions which they are intended permanently to occupy. As the spring plants and bulbs cease blooming they should be immediately removed to the reserve garden; the beds should then be dressed, dug, and planted with the summer plants, taking care to put out the hardier kinds first, such as Calceolarias, Verbenas, and Lobelias; by so doing the garden will present a neat appearance, and the summer plants will have the advantage of becoming established early in the

HERBACEOUS GARDEN.—Unfortunately many of the more tender plants, which were growing so luxuriantly, have been much injured by the severe weather. The Lilies, Spirzeas, Dielytras, and many similar plants have suffered severely. The borders may now be cleaned thoroughly from weeds, and the surface mulched with well decayed manure, so as to afford them every encouragement to renew their growth, and timely attention should be paid to the necessary thioning, tying, and staking before they become either too thickly grown together or broken by wind.

ROSE GARDEN. — The thinning, pruning, and pegging down should now be completed as quickly as possible. The great advantage of late pruning, especially after a mild winter, has this season been

abundantly proved, as, with few exceptions, the early pruned plants have suffered most severely, while those which have been left unpruned till a recent date have borne the inclement weather comparatively uninjured. After the tying and pegging is finished a good top-dressing of dung will be most advantageous. The climbing varieties, where unprotected, especially the Maréchal Niel, have suffered to a considerable extent—so much so that the earliest and best buds are ruined, showing most clearly the great advantage of a slight protection of Frigi-Domo or elastic netting; as where so protected, not only are the buds safe, but the foliage remains unscathed. T. S. C.



THE bitterly cold east winds and frosty nights (we had 12° here on the night of the 23d), which prevailed throughout the first three weeks in April, considerably checked the growth of all young crops in this department; but under the geoial influence of the recent favourable change in the weather they are now making rapid and satisfactory growth.

TOMATO PLANTING.—Preparations should now be made for getting the earliest batch of plants planted out. The first step to be taken in this direction is to get the necessary number of holes opened between the fruit trees on a south or west wall, and to put into each hole half a barrowload of compost, consisting of three-parts good loam and one of well-decomposed stable-manure. The plants, which should be thoroughly moist at the roots before being turned out of the pots, and previously have been hardened off in cold pits, should then be planted (one in each hole). Press the soil firmly about the roots, and nail the plants to the wall, leaving room in so doing for the development of the shoots. This done, a Spruce bough should be stuck firmly in the ground in froat of each plant for protection from frosts and cutting winds.

RIDGE CUCUMBERS.—For these make a trench 3 or 4 feet wide, 16 or 18 inches deep, and in length according to the number of plants to be grown, and fill it with long stable-dung and leaves well mixed together, raising it about 18 inches or 2 feet above the surface. The whole should then be well trodden down, and subsequently covered with the ordinary garden soil. The mounds should be formed of prepared soil (three-parts of light loam and one of well-rotted dung and leaf-soil), at 5 feet apart along the middle of the ridge, on which hand-lights should be placed, and the Cucumbers planted in them, and watered, and shaded for a few days from bright sunshine until they have established themselves. Damp the plants overhead with the syringe on bright alternoons, and cover up at night with mats.

CELERY PLANTING.—There are various ways of carrying out this operation, but the most preferable is perhaps the following:—The trenches, which should run north and south, and be r spit deep, 16 inches wide, and 4 feet from centre to centre, should be got ready at once for an early planting, and the ridges between should have a good slope, in order to leave the trench well open to the rain. Six or 8 inches thick of the best manure obtainable on the place should be dug into each trench, and the soil broken fine as the digging proceeds. Then, assuming that the plants have been properly hardened off, take them up carefully with a ball of earth. Remove any suckers that may be found, and plant one row in each trench at 9 inches from plant to plant, taking care in doing so that the plants are not buried deeper in the soil than they were before, and that it is made moderately firm about their roots, which should then be watered to settle it. The ridges can be planted before the Celery with two rows of Lettuce 9 inches apart, and 12 inches asunder, from plant to plant in the row. The planting should be done from the treoch before the dung has been put on, and in showery weather.

SEED SOWING.—A good sowing of Peas of such varieties as the following should now be made, viz., Ne Plus Ultra, Champion of England, Telephone, Stratagem, &c., from which sowings Peas will be fit for gathering early in August. Broad and French Beans (Carter's Leviathan and Canadian Wonder) should also be sown to supplement the supplies which previous sowings will yield. With the same object

in view sowings of Turnips, Spinach, Lettuce, Cauliflower (Early London, Walcheren, and Veitch's Au'umn Giant), Radishes, Mustard and Cress (the latter two under handglasses), should be made and duly protected from the ravages of birds, as also a small sowing of Basil (Bush and Sweet), and Summer Savory. Plant out those raised in heat and duly hardened off for that purpose in rows from 12 to 15 inches apart, and at the same distance from plant to plant in the rows. A sowing of Nasturtiums for pickling should also be made.

GENERAL WORK.—This will include the thinning and weeding of Turnips, Carrots, Parsnips, Spinach, &c. The plants should be left at from 6 to 9 inches apart in the rows, excepting Parsnips, which should be allowed 12 inches. The earthing-up and staking of advancing crops of Peas, together with the weeding and rolling of all gravel walks in connection with this department, will, in the ordinary course of routine, receive due attention. Asparagus beds will also require attention in regularly cutting the shoots as they become fit, taking care in doing so not to injure with the knile the crowns of the plants nor the shoots below the surface. Prick out young Celery plants in 2 inches thick of finely sifted soil, which has been placed over the same thickness of short dung on a hard surface out-of-doors. The rows should be 4 or 5 inches apart, and the plants the same distance asunder in the rows. Water and shade the plants for a few days, and see that they have plenty of water when established.

FORCING DEPARTMENT.—Tomatos swelling their fruit should, if not already done, be top-dressed with a mixture of loam and horse-droppings, about three parts of the former to one of the latter; and in addition to this let them have frequent supplies of weak liquid-manure. The shoots and leaves of the plants must be kept well pinched, and the fruit fully exposed to the sun. French Beans, which should now be grown in pits, will require attention in the way of watering and syringing; and Capsicums which are intended to be fruited in pots should now be shifted into larger ones, as they require more room at the roots; and those which are intended for planting out-of-doors later at the foot of a south wall or fence should be gradually hardened off for that purpose.

The Bandy Squit Garden.

THE 9° of frost on the morning of the 22d ult, has been most trying to the fruit crop, but so abundant was the blossom that we still have hopes that there will be an average crop. The gardens here are 400 feet above the sea level, and so escape spring frosts more than those at a lower altitude. Currants and Gooseherries have lost a quarter of the crop, but there is plenty left, and Plums on standards may have the same quantity gone, but we believe there is sufficient for a crop left. Frosts like these show the necessity, as we previously pointed out, of not prucing trees hard, and of leaving more foliage to save the blossom and newly formed fruit. The Peach trees will require constant attention; if the covering for protection has been heavy it will be necessary, if possible, to gradually reduce it, but on no account remove the temporary copings, as nothing is really safe till the Mulberry leaf is as large as a shilling, then the temperature Is sufficiently high to warrant the removal of all protection from our wall trees. The disbudding of Peaches and Nectarines will require to be done gradually. Remove any over-luxuriant or ill-placed shoots, taking care always to retain a promising one near the base of last year's wood. This and the leading shoot are indispensable; the others may be removed from time to time, as the tree and the time of the year will admit of it, but in doing this see that the young fruit is not mubed off. As we pointed out in our last, insects will soon appear, therefore on their first appearance be "up and at them." Apricots will also require their fruits to be thinned, and the forward shoots to be stopped. These require for nailing in, and this will induce the trees to form fruitful spurs for next year. A small caterpillar for nailing in, and this will induce the trees to form fruitful spurs for next year. A small caterpillar often does considerable damage to this tree: we know of no better plan than hand-picking, when they will he found rolled up in several of the leaves tied together; so

APPOINTMENTS FOR THE ENSUING WEEK.

Sale of Imported Orchids, at Prothcroe
WEONESDAY, May 6, Morris Rooms,
Clearance Sale of Phothe, at Billing's NurSale of Established Orchids, at Stevens'
Sale of Established Orchids, at Stevens'
Sale of Flowering Orchids, at Stevens'
Sale of Flowering Orchids, at Stevens'
Rooms, Sorwood, by Prothcroe & Morris
Sale of Flowering Orchids, at Stevens'
Rooms, Sale of Flowering Orchids, at Prothcroe
Rooms, Sale of Flowering Orchids, at Prothcroe

I N speaking of the way in which plants utilise the food stored up in their tissues, gardeners very frequently indulge in statements as to "organisable matter" and other vaguely defined substances, which, while they are apt to provoke controversy, do not really tend to elucidate the subject. When a seed, or the embryo plant within it, begins to germinate, and when the bud begins to lengthen into a shoot, as when a Vine rod breaks, a call is made on the resources of the plant. The new growths are not at this time directly nourished by any food taken up by the roots (except perhaps in the case of water), nor can they be (in deciduous plants at least) fed from the leaves at this early period. The food they require is stored up in some part of the plant-in the seed, in the tuber, or, in the case of the Vine, in the cells of the inner bark, and of the youngest part of the wood.

The questions then arise, What is this food so stored up? What is its nature? How does it nourish the plant? Where does it come from? Without going into elaborate detail we may say that the food is of a threefold character—I, water; 2, that which contains nitro-gen as an essential ingredient; and, 3, that which contains no nitrogen. Under the two last categories numerous substances are included, to which we need not further allude, except to point out that while some are liquid. or held in solution in the water, others are solid, and, except under special circumstances, insoluble. Among the latter, starch is, if not the most important, at least the best known. Starch exists in the plant in the form of small grains, easily seen by aid of a moderately high power of the microscope, and easily detected by the action of iodine, which gives a violet tinge to the starch. But starch in the form of grains, as it exists in the cells of plants, is insoluble, and in that state it is not capable of being utilised by the plant, or of being conveyed from one part of the plant to another. It is rendered soluble and capable of transport by the agency of a nitrogenous substance formed in the protoplasm; this substance is "diastase," and it is one of the so-called "ferments"-substances by whose agency the changes known as fermentations occur. How they are formed and how they do their work is not known, but the result of the action of this diastase is the conversion of the insoluble starch into glucose or grape-sugar, or into some similar compound which is soluble, is transferred from place to place, and is used up in the formation of the new cells, by which growth is effected.

Adverting now to the nitrogen-containing substances out of which the protoplasm is created it may be said that, some of the substances containing this essential ingredient being in solution, there is less difficulty in understanding their transport and utilisation, while those that are insoluble are, like the starch in the former illustration, rendered soluble by the agency of other ferments, such as pepsin, to which we need not now further allude. It is enough to say that of the two main groups of plant-food-that illustrated by starch containing no nitrogen, and that illus-trated by substances called by the general name of "albuminoids," containing nitrogenboth are inert prior to the agency of some "ferment." To ascertain the circumstances under which these ferments are formed is thus one of the most important tasks which the chemist has before him, and up to the present time it cannot be said that he has made much progress in this department. The nitrogenous part of the food is obtained, as a rule, wholly from the soil in the form of nitrates, or allied compounds; though under certain circumstances leaves can secrete a ferment like pepsin, which effects the digestion of nitrogenous matters, such as insects, as in the case of Pitcher-plants, Droseras, &c.

Our concern at present, however, chiefly lies with the starch which is stored up so abundantly in Vine rods and other reserve organs, and which is rendered available, as we have seen, by the agency of diastase. Where does the starch come from? To this question the answer given by science is that it is formed in the chlorophyll, or the substance formed in leaves as a result of their exposure to the light and to which they owe their green colour: briefly, it is formed in the leaves, converted into grape-sugar, and thus rendered soluble, by the agency of the ferment diastase, and in that condition conveyed along the veins of the leaf to the bark, or tuber, or place of storage, or is transferred direct to the place where building operations are going on, and where, in consequence, supplies are needed. The presence of starch in the leaves is easily ascertained microscopically, or by soaking the leaves in alcohol to remove the chlorophyll, and then immersing the colourless leaves in a strong solution of iodine. By such means SACHS has lately contributed much to our knowledge of starch formation. An analysis of his researches is given in a recent number of Nature by Mr. MARSHALL WARD, from which we condense the following details as appropriate for our purpose. In the first place Sachs shows that the same leaf may contain very different quantities of starch at different periods of the day, or according to the weather, the increase or decrease being very rapid. In the dark, or when a portion of the leaf is protected by an opaque body from the light, the starch disappears, and the starch formed in the day-time under the influence of the light may disappear from the leaves at night. This depends on the degree of temperature and on the health of the plant, but we are assured occurs normally during the summer in plants growing in the open. This is proved by dividing a growing leaf lengthwise into two halves, at nightfall after a bright day. One half is removed, the other allowed to remain during the night. The half leaf removed is at once tested by iodine as above described, and found full of starch; the remaining half-leaf is tested, early next morning after having been exposed to darkness, and the quantity of starch is found to be relatively very small.

Again, if the leaf be cut in halves at sunrise no starch is found in the half leaf that is cut away; if the other half be allowed to remain on the plant all the day so as to be exposed to the sun, and be tested at nightfall, abundance of starch will then be found.

It would seem, therefore, at first sight, that the formation, or at any rate the action, of diastase in dissolving the starch must take place at night only; and this would be consistent with the now wellestablished fact, that new growth (not mere extension of old) takes place principally at night, or in the dark. SACHS' experiments, however, show that the change from the insoluble starch to the soluble glucose goes on during the day, as well as at night, though these changes are less evident because during the day more starch is formed than is abstracted. SACHS has further endeavoured to estimate the proportionate amount of starch produced in a given area of leaf-surface. The difficulties in the way prevent anything but a rough approximation. Moreover, we do not find any reference to the comparative leaf-structure, to the number of palisade and other chlorophyllcontaining cells, which, as it seems to us, must be taken into consideration, as well as the mere surface area exposed to light.

By combining his experimental results, and taking note of all the circumstances, SACHS "concludes that 20 to 25 grammes of starch per day may be produced by one square metre of leaf-surface as an ordinary occurrence."

It is clear that some very important practical deductions may be drawn from these facts. If the amount of starchy contents of leaves varies during the day, and still more so at night, the period at which such leaves are cut for food or forage, becomes a matter of great importance. The afternoon or evening would thus be indicated as the best periods for cutting vegetables for salad, for cooking, or for medicinal purposes, so as to secure the produce of the day before it is drafted off elsewhere. The experiments, moreover, tend to show that analyses of plants are of little comparative value unless taken at frequent intervals. At present we get evidence of what has been going on in the plant at the particular time when the specimen was taken, but, in view of the migrations of food materials which, as we have seen, take place at regular intervals, and of the different action that goes on at night and in the daytime, in low as contrasted with high temperatures, and so forth, it becomes evident that a single analysis of the plant at any one time, be it never so accurate, really tells us little of the work done by the plant.

What is now wanted is a series of analyses of the same plant taken at various times of the day, under various conditions, and with reference also to the anatomical structure of the plant. By these means we shall gradually attain to a better knowledge of what goes on in that wonderful laboratory, the plant cell.

- WHAT IS AN AMATEUR? - This question cropped up again the other day, but no satisfactory answer was furnished. It is true the one propounded -viz., that a cultivator who neither grows plants nor trades in them for gain, one in fact who, as a rule, loses by their culture—is undoubtedly an amateur; but still it is fair to plead that the moment a man trades, whether he loses or not by his transaction, he is a trader to all intents and purposes. Really the clearest notion of an amateur is of one who, having some other vocation for means of livelihood, takes to the cultivation of flowers as a recreation and means of enjoyment. Such, no doubt, are the vast body of horticultural amateurs, and no doubt also, as a rule, only very few of them trade at all, whilst those who do only do so because their slender means would not allow them otherwise to fully enjoy that which is to them a delightful recreation. We have the greatest respect for the noble army of horticultural amateurs, and we are sure the trader also holds the body in high esteem as the very backbone of true horticulture in this as the very backbone of true norticulture it this country. It is only when certain competitions occur that the status of trader and amateur is called into question, and but for those occasions the distinctions would hardly be needed. Still the distinctions seem to be required in some cases, but not in all—as, for instance, in Auricula, and some other competitions. Pelargonium, Potato, and some other competitions, the amateur can hold his own with the trader, and beat him. With Roses, Carnations, Dahlias, the trader, being the largest grower, has the advantage. Still if the distinctions were swept away from schedules, and classes made for the smaller growers, from which the larger ones were excluded, no harm would be done, and no farther invidious distinctions would exist. Certainly some writers would have one bone of contention the less to gnaw at. For the prevention of disputes, each schedule should contain definition of terms like amateur agreed upon by the committee beforehand.

—— EARLY POTATOS. — The frosts have somewhat rudely discounted the hopes of those who, having early Potatos well through the ground, were in full belief that they would be able to lift a very early crop. It is of no use to urge people to be careful and 'wise; they will only too readily yield

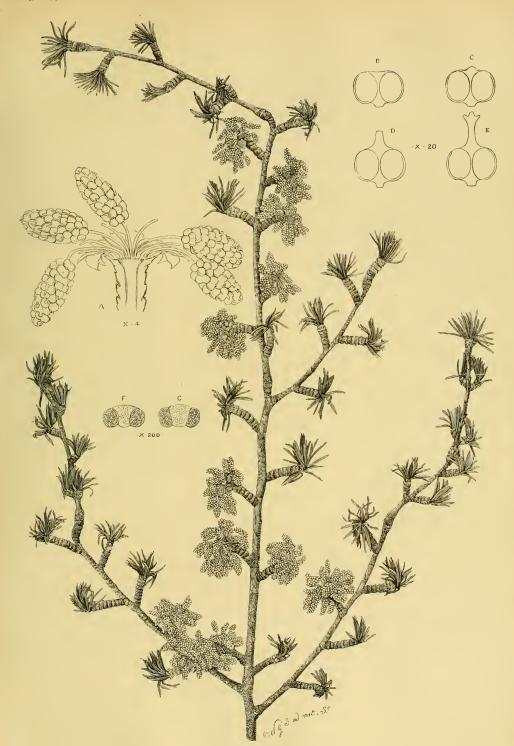


Fig. 112.—PSEUDO-LARIX KÆMPFERI. (SEE P. 584.)

when some prospective but delusive advantage offers. We seldom find very early—and, of course, unprotected—Potatos escaping from late spring frosts; and this season, because the beautiful weather of February induced such early planting, the late frosts have been all the more intense and destructive, Even in Potato culture the race is not alway to the

PRIMROSES AND POLYANTHUSES. - The absence of the former and very indifferent representatives of the border or fancy section of the latter spring flowers at the recent Auricula show, though fairly good prizes were offered for them, shows that here in the south at least, and probably farther north, the end of April is too late a period of the year in which to look for examples of such favourite flowers. The best show of these Primroses and Polyanthuses seen this season was at the ordinary meeting of the Royal Horticultural Society on March 25 last, just four weeks previously, so that offering prizes for them at the end of April seems rather farcical, and to the public somewhat disappointing. No doubt the gold-laced Polyanthuses are fairly in season at the end of April, and specially so in the North; but even these, though abundantly shown, were not up to the customary mark, and most of the flowers looked a little cloudy or stale. Pretty as these are, however, their chief admirers are found in fanciers, those who really understand the points of a gold-laced flower, and can appreciate them. The general public, the hardy flowers in posse, find them perhaps a little uninteresting or monotonous, and always prefer the rich and many coloured border kinds, and the beautiful Primroses when they can be seen. It is too much to expect that the Auricula lovers will permit their prizes for these plants to be offered earlier; it is equally too much to hope that the Royal Horticultural Society, with its improved finances, will offer prizes instead, but if such could be given for Primroses at the last meeting in March, and for fancy Polyanthuses early in April, real encouragement would be given to a meritorious class of flowers, and the public would be gratified also.

- SEX IN PLANTS .- Some interesting experiments have been carried out by F. HEVER (Journ. Microsc. Soc., p. 251) with a view to determine the cause of differentiation of sex in unisexual plants. The result obtained in the case of directious plants, by experiments with 21,000 specimens of Mercurialis annua and 6000 of Cannabis indica, was that external conditions have no influence on the production of seedlings of one or the other sex. In the case of the former plant the proportion of males to females produced was as 105.85 to 100, and in the latter as 86 to 100. In a second series of experiments made with monecious plants, to determine whether external conditions of temperature and soil caused any difference in the proportion of male and female flowers, Urtica Atriplex, Spinacia, Nanthium, and Cucurbitaceæ produced negative results. He also came to the conclusion that sex is determined at an earlier period than the ripening of the seed. A knowledge of the means whereby female plants could be produced at will would be of considerable commercial importance, as, for instance, in the cultivation of Nutmegs, Hops, &c.

-- Russian Apples have proved a disappointment.

—— DAFFODLIS GONE ASTRAY.—Whether the sudden notoriety caused by the Conference has disturbed the equilibrium or no, we know not, but in any case an unusual number of erratic members have found their way to our sanctum. One incomparabilis, not content with having its cup cut into very deep segments (var. semipartita), has only five segments (var. semipartita), has only five segments (var. semipartita), has only five segments, five stamens, and two stigmas, and a two-celled ovary. One Poeticus var. biflora has a five-parted flower, except the ovary, which is in its ordinary condition; another has an eight-parted flower, the ovary here again remaining normal. All these cause from Mr. WARE.

— DAVALLIA MARIESII FOR DINNER TABLE DECORATION.—A great and pleasing change in the character of indoor floral decorations has been effected by Messrs. NIEMAN & CORNISH, of the Poitman Floral Hall, 29, Orchard Street, Portman

Square, by using the beautiful Japanese designs (see p. 46t, vol. xx.) made of this Fern. In some cases recesses and bends in staircases are utilised to arrange beautiful grottoes of this Fern alone, unassisted by any other aid than that given by our native carpet moss, against which the green feathery fronds of the Davallia appear very effective. The defective point in most floral decorations is the appearance of the inevitable flowerpot, and in the fact of their being grown into beautiful shapes without either pot or lies in a great measure the secret of these Davallias being so much admired wherever they are seen-their adaptability for suspending by invisible wire still further enhancing their value in the decorator's hands. On the occasion of a dinner given at the rooms of the Medical Society of London, on Friday, April 26, at which 180 guests were present, the whole of the dioner-table decoration was designed by Messrs. NIEMAN & CORNISH, with these Ferns arranged in pairs, with Odontoglossum Alexandra, Maréchal Niel Roses, Stephanotis, Gloxinias, &c. was much admired, and it would be difficult to conceive anything more elegant or beautiful for such a

- VACCINIUM SERPENS. - This species was added to the Kew collection about three years ago, having been sent there by Mr. H. J. ELWES, who collected it in the Himalayas. The plant is altogether distinct in habit from what we are accustomed to see in this exceedingly variable genus. The comparatively stout branches are loog and arching, slightly branched but very leafy, and originate from a large tuber-like woody rootstock. The leaves resemble those of Pernettya mucronata, but are somewhat larger, and considerably stiffer, or more coriaceous.

The flowers are produced singly in the axils of the leaves, and depend from the underside of the branches in a graceful manner. The tubular strongly fiveangled corollas are of a deep crimson colour, and are similar to those of V. rugosum. As a basket-plant for a cool-house or conservatory it promises to be of great decorative value, and may be seen in the Heathhouse, where it is now flowering for the first time.

Dyson's STOCK .- In all probability this strain of Stock is not very widely known beyond the immediate district of Middleton, but it is one well worthy of notice. It represents a rich crimson intermediate of strong growth, producing very large well formed flowers of great beauty and singularly bright and telling in colour. It is one of many novelties grown at Stakehill, by Mr. S. BARLOW, and in spring and early summer it can be seen in potslarge plants, superbly grown, producing spikes of surprising beauty. The strain is one remarkable for the many double varieties it produces; out of fifteen plants taken from the seed beds not one was single, As a fitting companion to this Mr. BARLOW also grows Mauve Beauty in pots, which is a remarkably fine intermediate-here in the cool moist district of Castleton taking on a wonderful depth of colour under high-class cultivation. Both of these Stocks are bedded out during summer at Stakehill. Here the Daisies which occupy the beds in spring last on much longer in beauty than they do in the South, consequently the summer bedding plants are put out much later. And these Stocks (Mauve Beauty especially) are found to branch freely when planted out, and keep up a succession of scented flowers all through the summer.

-- ANNUAL CHRYSANTHEMUMS. - We have been so very much accustomed to regard that serviceable wild flower, Chrysanthemum segetum, as an autumn-blooming annual that it was with surprise there recently came under our notice, just beneath a cottage window in Middlesex, a fine plant of this Cornflower in abundant bloom-the flowers large and as pure as seen at any time. This seemed to revelation, as showing that what a cottager could have so beautiful thus early in the year could equally be possessed by others caring for such elements of spring garden beauty. The plant had stood the winter well unprotected. The aspect was south-west, yet far from a warm one. How many are there who have taken the trouble to sow seed of this Chrysanthemum at midsummer as well as in March, and thus secure a supply of plants for winter and spring blooming? But for all ordinary purposes where cut flowers are desired, few robust annuals afford more material in the form of flowers than do the single and double forms of Chrysanthemum coronarium, for they bloom profusely, and if the plants have ample space will not cease flowering till killed by sharp frosts. It is an excellent feature of this section of annuals that they may be propagated most freely by cuttings, and any exceptionally good form, double or single, may be increased rapidly in a short time. The tricolor, or Euritdge section, produce very handsomely formed flowers, and of singularly beautiful colours. It is strange that such showy annuals should be so little grown—indeed, we might almost say little known. They make neither bedding nor pot plants, but should be grown in small clumps in mixed borders, or specially with similar plants in a reserve garden the chief object of which is the supply of cut flowers in abundance.

—— PRUNUS PYRIFOLIA.—This variety, although not possessed of such brilliant autumn tints in foliage and fruit as the lately introduced P. Pissardii, is yet deserving of a place where bright tints are valued in the autumn, the foliage dying off in vivid gold and crimson, and being tolerably persistent the display lasts several weeks before the tree is quite bare. It is, moreover, a plant that does not suffer from drought in any apparent degree, and will grow indifferently under the shade and drip of larger trees or quite in the open. Masses of it grown as stemless bushes under trees have a good effect, as have standards standing free; each is good in its way.

—— PRUNUS SINENSIS.—M. CARRIÈRE, who figures this species in a recent number of the Result Horticole, having previously described it in 1869, speaks of it as remarkable alike for "beaut!" and bout!"—beauty of appearance and profusion of fruit. The plant is a bush, bearing clusters of small Hawthorn-like blossoms along the shoots, succeeded in due season by small globular deep red Cherries, of peculiar but agreeable flavour. P. japonica, often confounded with it, has smaller fruits, tipped by the persistent base of the style, and the leaves are rounder at the base.

- THE KODON .- A curious fact is mentioned by Mr. DUTHIE in his second part of Field and Garden Crops of the North-Western Provinces and Oudh, io connection with the Kodon (Paspalum scrobiculatum). The growing plant, it is said, suffers considerably from the attacks of insects, but that it is protected from the ravages of birds by the fact that its ear is partially concealed in the leaf-sheath, as is the case with the coarse varieties of Rice. The grain is liable to produce a kind of intexication, which is vouched for bymany authorities. The settlement officer of Azamgarh writes that instances of intoxication caused by Kodon imported from the trans-Gogia districts (Basti and Gorakhpur) are known to the people, but that no such effects have been noticed from grain locally produced. The reason for the intoxicating effect of Kodon grain under certain circumstances may, perhaps, lie in the fermentation which is undoubtedly brought about in order to loosen the husk and make it more easily removable.

THE ORCHID MARKET.—At Messis. Pro-THERGE & MORKIS' sale of Orchids in flower on Tuesday, some fine varieties came under the hammer, and good prices were obtained. We note a few of them:—Cattleya Mendelli, £31 10s.; Odontoglossum Alexandre, £15 15s.; Dendroblum infundibulum, £5 15s.; Sophronitis grandiflora, £5 10s.; Lælia purpurata, £9 19s. 6d.; Odontoglossum Pescatorei, £6 6s.; O. triumphans, £11 0s. 6d.; Masdevallia Harryana Deoisonize, £5 10s. The best prices obtained by Mr. STevens at the sale of Mr. BOCKETT's plaots on Tuesday were as follows:— Dendrobium Falconeri majus, 10 guineas; Cattleya Skinneri, 13½ guineas; Cypripedium selligerum, 10½ guineas; Leclia purpurata, 10 guineas; La anceps Dawsoni, 9½ guineas; Oncidium mareranthum, 10½ guineas; Odontoglossum mulus, 10½ guineas.

THE LATE MF. R. HANBURY'S LIBRARY.—
The natural history library of the late Mr. R. HANBURY was sold at STEVENS' Rooms on April 25.
There were only 127 lots, but all were in fine condition, and good prices, as a rule, were realised. The pincipal lots were:—CUETIS' Botanical Magazine, a complete set of 111 volumes, £92; a set of seventeen volumes of the same work, vols. 54 to 70, 35 guineas; another set, vols. 1 to 36, £39; GOULD'S The Birds of Creat Britain, a very fine copy,

£95; Gould's Humming Birds, £85; Dresser's History of the Birds of Europs, £50; BOWDITCH'S Frechwater Fishesof Great Britain, £21; Woolf's Zwological Sketches, £15 10s.; LINDEN's Pexadorea, vol. i., 12 guineas; LINDLEY'S Sertum Orchidaceum, 12; guineas; SOWERBY'S English Bodany, 11 guineas; CURTIS' British Entomology, 17 guineas; and PANTON's Magazine of Botany, eleven volumes, 11 guineas. An anabound set of fifty-two parts of LAWSON'S Pinetum Britannicum, belonging to "another property," realised £15.

—— VICTORIA PARK.—We much regret to hear that, on account of ill-health, Mr. McINTYRE is about to retire from the position of Superintendent of the Victoria and Greenwich Parks.

—— FRUIT FARMING: HOP MILDEW.—Messrs. CLOWES & SONS are publishing in a cheap form two admirable papers contributed by Mr. CHARLES WHITEHEAD to the 15th volume of the Journal of the Bath and West of England Society, on "Fmit Farming in Kent," and "Mould or Mildew on Hop Plants,"

-- THE WEATHER.-General remarks on the temperature, rainfall, and duration of bright sunshine, for agricultural and sanitary purposes, during the ek ending April 28, issued by the Meteorological Office, 116, Victoria Street, London, S.W.: -The weather has continued very cold in all parts of the kingdom; in most places, however, the sky has been less cloudy than during last week, although the amount of rain has been rather more. The temperature has again been below the mean in all districts, the deficit ranging from 3° in "Scotland, N.," and 4° in Ireland to as much as 8° or 9° over central, southern, and eastern England. The maxima, which were mostly registered on the 27th or 28th, varied from 53' "Channel Islands," "Scotland, N.," and "Scotland, W.," to 57° in "England, N.E.," and 62° in "Ireland, S." On several occasions the daily maxima were very low, not exceeding 46° or 47° in many parts of the country. On the 23d considerable local differences were observed in the maximum readings over England; at York the thermometer did not exceed 41°, and at Alnwick it only rose to 42°, but over the "Midland Connties" the maxima were between 50° and 54°. The minimat, which were recorded during the earlier days of the week, were very low. In the "Midland Counties" the sheltered thermometer fell to 22°, in "England, S." to 23°, in "England, E." and "England, S.W." to 25°, and in most other districts to Letween 27° and 31°. In the "Channel Islands" the minimum was 39°. The rainfall has been a little more than the mean in "England, E.," "England, S.," and the "Channel Islands," but less in all other districts. Bright sunshine has been much more prevalent than during last week in the east of Scotland, the south-west of England, and the Channel Islands, and rather more so in most other districts. The percentages of possible duration ranged from 17 in "Scotland, N.," to 50 in "England, S.W.," and 65 in "Scotland, E." Depressions observed.—During the first few days of this period pressure continued highest over the north-eastern and northern parts of our area, and lowest to the southwestward of our islands, light or moderate winds between N.E. and S.E. consequently prevailing. As the week drew towards its close, however, two shallow depressions appeared, one travelling northnorth-westwards over Denmark and Norway, and the other in an easterly direction over the southern parts of England. The latter disturbance, which reached the neighbourhood of London on Sunday evening, remained stationary until the close of the period, diminishing in intensity. During its passage it caused westerly breezes on our southern coasts, southerly winds in the south-east and east, easterly at all our more northern stations, and northerly in the west.

—— GARDENING APPOINTMENTS.—Mr. THOMAS GRIFFIN, lately Gardener at Westgate, Beckenham, has succeeded the late Mr. Rose as Gardener to A. J. ADDERLEY, Esq., Davenport House, Bridgenorth, Salop.—Mr. E. H. BRADLEY, for the last nine years Gardener at High Barns, Sunderland, as Gardener to ANGUS HOLDEN, Esq., Woodlands, Bradford.—Mr. JOHN FORBES, for the last four-and-a-half years Gardener to the Princess MESTCHERSKY, as Gardener and Bailiff to J. S. MORGAN, Esq., Dover House, Reehammton.

COTTAGERS' AND ARTIZANS' SHOW AT SOUTH KENSINGTON.

THE Royal Horticultural Society has just issued a comprehensive and very liberal schedule of prizes be awarded at a cottagers' and artizans' show of fruit and vegetables to take place in the gar-dens of the Society at South Keosington on There are thirty-six classes for August 12 next. vegetables and fruit, and, provided sufficient publicity be given to the exhibition, an extensive and interesting show ought to result. There is one class interesting show onght to result. of a special character well deserving attention; it is that which will be called Class A for a collection of garden produce, fruit and vegetables, of not less than six distinct kinds of Iruit and twelve distinct kinds of vegetables, the collection to occupy a space not exceeding 60 square feet. Six prizes are awarded in this class, the highest being £5, and the competition is to be amongst the various local horticultural and cottage garden societies and allotment-holders in the country. Thus the secretary of any society, or any duly responsible person acting on his behalf, is authorised to collect the necessary produce from its members, make the necessary arrangements, exhibit in the usual manner, and to give guarantee that the produce is bond fide grown. Now seeing that of late years there has been a marvel-

lous extension of cottage garden and allotment cultivation through the agency of local horticultural societies, if some of these can be induced to interest themselves in this particular exhibition, it should be one of a very instructive character. But what is to be understood by the term kinds? It is sometimes nsed to designate Cabbage, Potnto, Carrot, Lettuce, Pea, &c., and only one variety of each to be included. Thus, twelve distinct kinds of vegetables under this interpretation would not include more than one representative of each. But the term kinds is very frequently used in the sense of varieties, and a gardener speaks of a "good kind of Cabbage, &c.," variety. But the Royal Horticultural Society's aim is, no doubt, to employ the first of these interpretations, so that they may have the best dish of Potatos, of Peas, Cabbage, Beans, Lettuce, &c., from a district, and not two or more varieties of any of these. And it would undonbtedly be of service if there could be attached to each collection a paper setting forth the district from which the produces comes; whether grown in a cottage garden or allotment, and the nature of the soil; it should be a sine qua non that exhibits be correctly named, and the individual contributing a certain quota should have his name appended to each article. Secretaries of all societies within a reasonable distance of London that embrace cottage and allotment exhibitors can render material assistance by circulating schedules and interesting their members in the competition. The entries for all competitions in this class should be made by the secretary of the local society, and the carriage of the products to London should be defrayed by the same.

Now comes the knotty question of the distribution of the prize-money that may be won. Shall it go to the funds of the local society, or be distributed among the competitors? If the former, it should be used for the benefit of the cottage exhibitors, by offering special prizes for competition at the succeeding show by those who helped to make up the winning collection. If distributed among the exhibitors making up the collection, it can either be pro rata according to the extent of the contributions of each individual, or be equally divided amongst each. This is a matter that can be safely left to each society for itself, but it ought to be a distinct understanding that each exhibitor should in some way participate in any benefits accruing from the competition, or he may not be ioclined to send the best he has towards making up the district collection. One important preliminary step on the part of the authorities of any society that might be disposed to compete would be to call an early meeting of their cottage and allotment exhibitors, and form a management committee among themselves to assist in the matter. The selection of the particular vegetables to form the competing col-lection might be left in the hands of the committee lection might be left in the hands of the committee supplemented by the officers of the society. And it is reasonable to suppose exhibits in other classes will be sent up also from the district; the secretary or com-mittee might render very useful service by collecting these, seeing that they are properly filled up, and for-ward them to Mr. Barron. He or they might also assist by seeing to the careful packing and prompt despatch of all exhibits requiring such oversight.

Floqists' Flowers.

THE AURICULA .- Those intending to save seeds in any quantity from their collection should go over the flowers daily with a small camel-hair brush and thrust it down the tubes of the flowers. The brush carries the pollen with it, and places it on the stigma. Some varieties will not fertilise with their own pollen, and have to be "set" with pollen from a free seeding variety. Few Anricula fanciers save seeds: indeed I do not know any who do, except sufficient for their own nse, and that is carefully crossed to produce the very best flowers. The young seedlings raised from seeds sown early in the year must be encouraged to grow on freely, else the plants will not grow strong enough to flower in one season. I am now pricking them out, about a dozen tiny plants in a small 60-sized pot; they will be there about six weeks before it is time to pot them off again-three or four plants in the same-sized pots. In six weeks more they may be potted singly in small 60's, and again, when well rooted, they may be potted in large 60's, in which they will flower. Mr. Horner, one of the most successful raisers of seedlings, flowers about a dozen or more plants together in a 7-inch pot. established plants should now be removed to frames behind a north wall or in some similar shady position where the sun cannot shine upon them during the hottest part of the day. We have been taking off some offsets from a few of the scarce sorts, but the largest proportion of them will not be disturbed until potting time.

THE CARNATION AND PICOTEE .- I shall not forget a very large bed containing thousands of plants of scedlings in Mr. Barlow's garden at Stakehill House. I saw it in full flower, and the wealth of floral beauty it contained would take loog to describe. The owner of the bed had purchased seeds from some of the principal seedsmen, not florists varieties at all. In this case each plant produced a score or more of fine blooms. Seeds of the best florists' varieties can now be obtained. They should be sown at once, and will produce strong flowering plants to bloom next year. Ours have been pricked out in boxes and pans, and as soon as they are large enough they will be planted where they are to flower. To produce cut blooms there is nothing to beat these masses of seedlings. Most of the better-named varieties will do well in beds, or planted in isolated groups in the herbaceons border. We have now re-moved the pots containing our best selection from the frames, and placed them out-of-doors. They have had sticks placed to them. It is very desirable to fumigate the frames containing the plants before they are removed to the open air. Even if no greenfly is to be seen it is best to do so. The tree or perpetual flowering varieties are now growing freely the greenhouse, but as that structure requires shading to save other flowering plants, we would much rather have them in a cool honse now, near to the glass, and under conditions where the lights could be removed entirely in fine weather. The plants require to be potted on at this season, and encouraged to make good growths. I find that by growing autumn pro-pagated as well as spring cuttings we can obtain a succession of flowers from the time the florists' section are over, all through the winter months. The main object in view at present is to obtain sturdy short jointed growths; this is obtained by keeping the plants clean and well exposed to light and air.

THE DAHLIA,—The very favourable reception accorded to the single Dahlia during the last few years has caused all the sections of the Dahlia to be much more freely enlivated than they had been previous to the introduction of the former. The easiest, and perhaps the best way, to treat the single Dahlia is as an annual. The propagation of the named varieties, whether single or double, ought to have been completed a month ago. The plants should now be in 5 or 6-inch pots, and in cold frames or pix where the light can be removed entirely when the weather is fine. Those intending to grow flowers good enough for exhibition must devote a space of ground specially for their culture. This should be prepared by frequent torking over in fine weather to get the soil into good condition. The plants cannot be planted out until quite the last week in May,

or even early in June, when no danger from frosts is evident. The manner of planting, &c., has been previously given.

THE POLYANTHUSES .- The time to plant out the laced varieties that have been flowered in pots has now arrived. We plant them in a shady position in good rich loam, and under the shade of a north wall or fence. The plants remain more free from insect pests in such a cool shady place as this-at any rate in the southern districts. Seeds ought to be sown at once if a strong bloom is to be expected next year. I sow the seeds in a hotbed, about the middle of April, under the impression that the seeds germinate more freely in a moist bottom heat. The young plants are pricked out into pots and hoxes as soon as they are large enough, and planted out in the open ground soon after midsummer. The fancy Polyanthuses schibited by me at South Kensington were treated in that way. They flowered in the open ground and were lifted and potted about a week before the exhibition. They succeed a great deal better in heavy clayey soil than they do in that which is light.

THE TULIP.—As the Auricula time passes away the show Tulips begin to interest the florist. Usually the one is gone before the brilliant colours of the others open to our view. This year we have Tulips and Auriculas together. Fashion is answerable for many strange freaks, one of the latest being the preference of such monotonous looking flowers as Daffodils to the rich and varied colours of the Tulip. It is a great treat to examine the interior of a first-class Tulim-the ground colour so rich in god It is a great treat to examine the interior of a first-class Tulip—the ground colour so rich in gold, purple, maroon, rose, and scarlet; so beautifully flamed and feathered withal—but Daffodils and Sun-flowers are the fashion, so the few old-world florists must share their pleasures alone. Our bed is not shaded by an awning this year, but being under a wail facing east, and further sheltered by tall trees behind the wail, they have not suffered in the least from the severe frosts we have lately experienced. If from the severe frosts we have lately experienced. If the Tulip could be planted in groups in the herbaceous border, the finer forms would be greatly valued. They are well adapted for that purpose, especially the self (or breeder) forms. Although the "broken" flowers, as they are termed, that is, those that have passed from the self to the "rectified" form of bizare, byhloemen, or rose, are also good border flowers. Their beauty is greatly marred by heavy rains, which dashes the dark pollen about in a pasty mass; in other respects they do not suffer much from the weather. A few plass-lights placed over the beds serve to keep other respects they do not surfer much from the weather.

A few glass-lights placed over the beds serve to keep them in their pristine purity until the flowers fade.

A mulching of rotten manure over the bed, and a good soaking with rain-water, will add substance, size, and lustre to the flowers. J. Douglas, Great Gearies, Ilford.

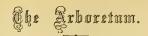
A PLEA FOR MERCY.-There is no sadder sight in the spring and summer than to see a bird's nest torn from the hedge by the idle hand of some thoughtless boy and thrown by the wayside. We earnestly appeal to our readers to use their influence in every possible to our readers to use their influence in every possible manner, whether as parents or schoolmaster, to prevent the ruthless robbery of birds' nests. It should be pointed out to any boy who has set his heart on making a "collection" of eggs that he can do so without causing pain to the mother-bird, by taking one egg when four or five had been laid. There are three good reasons why we should leave the nests of our wild birds unharmed'—1. Because it is now admitted that though birds do some harm, they do infinitely more good. 2. Because some of our most beautiful English birds are rapidly becoming extinct.

3. Because (and this is the best reason of all) it is right to be merciful and kind to every creature that God has to be merciful and kind to every creature that God has made :-

- " He prayeth well who loveth well Both man and bird and beast,
- "He prayeth best, who loveth best All things both great and small; For the dear God who loveth us He made and loveth all."

The Bicester Deanery Magazine.

THE AMOUNT OF VEGETABLE PRODUCE now THE AMOUNT OF VEGETABLE PRODUCE now annually imported into England is more than double that produced by the soil. To say nothing of the tropical or sub-tropical vegetable products — cork, de-woods, oils, resins, gums; nothing of sugar, spices, Tea, Coffee, Cocca; nothing of Cotton and grasses, of Hemp and Flax, of indigo, madder, and fruits—we import sawn or split timbers, staves, and Mahogany to the value of £15,000,000 per annum, of Mahogany to the value of (15,000,000 per annum, of which the one item that we could not ourselves produce, Mahogany, stands for under £400,000. Our imports of timber not sawn and split, down to 1808 (the last year in which they figure in the Statistical Abstract), stood steadily for some years at about £5,000,000 in value. We look in vain for any corresponding item among our exports. Builder.



PSEUDO-LARIX KÆMPFERI (THE GOLDEN LARCH). "The interest attaching to this plant is truly hoth manifold and great. Messrs. Veitch (Manuxl, p. 129, 1881) speak of it as the most ornamental of all the Larches—note, they call it a Larch. It is perfectly hardy, and is, they continue, "a moderately vigorous growing tree, of pyramidal habit. The branches and branchlets are like those of the common Larch, and the leaves are fascicled in the same way as in that tree, but they are longer and broader; at first they are of a light yellowish-green, with a soft pleasing tint, peculiarly attractive in the spring months; as the season advances they become much deeper and duller in colour, and in the autumo finally change to a bright golden-yellow." For this latter reason it is sometimes called the Golden Larch.

Adverting now to the history of the plant, we may mention that it was in the first instance botanically described by Lindley in these columns, 1854, p. 255 and p. 455, with figure of cone, under the name of Abies Kæmpferi, under the impression that it was one of the plants mentioned by Kæmpfer in Japan. This, however, appears to be a mistake. The tree is not Japanese so far as known, but is a native of the central,



FIG. 113.—CONE OF PSEUDO-LARIX KÆMPFERI. (SEE P. 581.

northern, and eastern provinces of China. It was introduced to this country by Fortune, who calls it a Larch (Larix), although the scales of the cone, instead of being persistent, "are so deciduous that it is scarcely possible to hold them together."

Fortune could not assent to its being called an Abies unless Cedars and Larches are also referred to the same genus. "It is," he says, "apparently a plant exactly intermediate between the Cedar and the Larcb; it has deciduous cone-scales, like the Cedar, and deciduous leaves like the Larch, and a habit somewhat of the one and somewhat of the other.' (Gardeners' Chronicle, 1855, p. 644.) Gordon, recognising its distinctness from Abies, Cedar, or Larch, called it in his *Pinetum* Pseudo-Larix Kæmpferi, thus putting it with a new genus, to which objection was raised at the time, on the score that the name was an "ill phrase-a vile phrase."

A. Murray preferred to keep to Lindley's nomenclature, and was of opinion that it was nearer to the Firs than to the Larches. Carrière calls it Larix Kæmpferi. Lambert and Parlatore group it under Pinus.

It is not necessary to cite other authors, who have only copied what their predecessors have said, but we may now cite the opinion of the venerable Mr. Bentham, who, in the Genera Plantarum, iii., p. 442 (1880), after pointing out its peculiarities, concludes that the tree must be affiliated to the Cedars, or considered as a distinct genus; the male flowers, however, are, he says, unknown, and the position of the plant remains uncertain.

This uncertainty we have now the happiness, thanks to the courtesy of Signor Rovelli, of removing. of the most remarkable trees in that emporium for all that is remarkable in that way — the nursery of Messrs. Rovelli, at Pallanza, Italy—is a tree of this species, and this season it has put forth male catkins, of which we lose no time in submitting an illustration to the reader (fig. 112, p. 581), albeit the speci-men was hardly fully expanded, and its beauty would have been enhanced by figuring the specimen at a later stage. These male catkins settle the point. It is clearly not a Pinus (except in the very widest and practically most inconvenient sense). It is not an Abies (Silver Fir), nor a Picea (Spruce), nor a Cedar, nor a Larch, but, as Gordon said, a distinct genus. In spite of his "ill-phrase," we consider ourselves, therefore, bound to adopt his designation. The male catkins are different from those of any Conifer known to us. To some extent they remind us of those of the Ginkgo, which are stalked, grow in tufts in the same manner, but are mixed with the leaves, needless to say there is little or no other resemblance to the Ginkgo.

The catkins of Pseudo-Larix are arranged in umbels at the apex of short spurs invested by brown membranous scales. Each catkin is stalked, the stalk being recurved, so that the catkin itself is pendulous, oblong, about three quarters of ao inch long, applegreen in colour. The lower anthers are subglobose, almost sessile, the upper ones are prolonged into a long appendage, sometimes lanceolate, sometimes, as long appendage, sometimes anaccount, sometimes, as shown in the drawing, 3-lobed at the apex. The pollen grains, drawn by Mr. W. G. Smith, have each two bladders, as in the Pioes, &c.

The tassel-like catkins, not fully developed in our

specimens, must clearly be very ornamental, and, as we have said, they are quite different from the solitary sessile catkin of the Larch.

Fortune's account of the plant in our columns has often been cited. It will suffice to repeat that he first met with it as a dwarfed pot plant; when at a height of some 18 inches the Chinese contrive to make it assume the guise of an aged Cedar of Lebanon.

Ultimately he found the tree growing in the vicinity of a Buddhist monastery near Chekiang. The trunk of one specimen had a girth of 5 feet and a height of 120 or 130 feet. At Quanting, 20 miles away from the first locality, Fortune came upon a sloping hill "covered with the beautiful object of our search." The trees he notes all appeared to have been planted. "One tree in particular seemed the Queen of the Forest, the trunk height, with the lower branches nearly touching the ground." We note the circumstantial We note the circumstance that the trees appeared to have been planted, for it is of importance with reference to the origin of the tree. Two explana-tions have been offered of the fact that curious trees, tions have been offered of the fact that curious trees, such, for instance, as the Abies Fortunei we lately figured, are found in the vicinity of temples and monasteries in Japan, China, Sikkim, Tibet, and other Buddhist countries. One explanation is that the trees have been brought from elsewhere by the Buddhists—but whence? The other is the view taken by Dr. Hance (whose authority on such a point is very great), that the trees form the remnants of the indigenous forest preserved around the temples, from feelings of veneration, but destroyed for timber or by fire is other parts of the country.

seetings of veneration, but destroyed for timber or by fire io other parts of the country. We have said enough to show that the interest attaching to the Golden Larch is manifold, and we cordially thank Messrs. Rovelli for affording us the apportunity of clearing up one part of its history. M. T. M.

CLIMATE OF ALASKA.

In his remarks on glaciers in Alaska, Mr. Thomas Meehan observed that on the tops of what are known as "totem-poles" in some of the Indian villages, trees of very large size would often be seen growing. These poles are thick logs of Hemlock or Spruce, set up before the doors of Indian lodges, carved all over with queer characters representing living creatures of every description, and which are supposed to be genealogies, or to tell of some famous event in the family history. They are not erected by Indians now, and it is difficult to get any connected accounts of what they really tell. At the old village of Kaigan there are numbers of poles erected, with no carving at all on them, among many which are wholly covered, and these all had one or more trees of Abies sitkensis growing on them. One tree must have been about twenty years old, and was half as tall as the pole on which it was growing. The pole may have been

20 feet high. The roots had descended the whole length of the poles, and had gone into the ground, from which the larger trees now derived nourishment. In one case the root had grown so large as to split the thick pole on one side from the bottom to the top, and this root projected along the whole length to the ground, about 2 inches beyond the outer circumference of the pole. Only in an atmosphere sur-charged with moisture could a seed sprout on the top of a pole, 20 feet from the ground, and continue for years to grow almost or quite as well as if it were in the ground,

We may also understand by incidents like these how tree-life endured so very long in this part of Alaska, and why rocky acclivities, on which no vegetation at all could exist in the dry climate of the Eastern States, were here clothed with a luxuriant fresh growth, so thick that it was almost impossible for one to make a journey through it. Indians had very few trails; most of their journeys were by canoes. At this village he also saw a bush of Loni cera involucrata, which was of immense size as com-pared with what he had seen in Colorado and other places. This was at the back of an Iodian lodge, and alongside of a pathway cut against the hill-side. The plant was growing on the bank, and grew up some 10 or 12 feet, where it bent over, apparently of its own accord, and rested on the roof of the lodge, its numerous branches making a dense arbour under which the road passed. The stems near the ground were, some of them, as thick as his arm, and the whole plant was covered by very large black berries. Stopping in admiration to look at and examine the specimen, brought numbers of Indians to see what was the subject, who smiled pleasantly on being made to understand that only the sight of a huge bush had attracted the traveller. Subsequently another specimen was noted in the woods on a plant of the native Hemlock (Abies Mertensiana). In the woods the plant is somewhat sarmentaceous. It could not climb a Hemlock without assistance. This old Hemlock was bereft of branches to about 20 feet high, but the Lonicera was above the lower branches, and had journeyed along them to the extremities, beyond which it was beautifully in fruit. It could only have been there by growing up with the Hemlock when that tree was young, and was probably of about the

ODONTOGLOSSUM LUTEO-PURPUREUM.

So dissimilar have the varieties of this plant been which have been sent to us lately, and to all of which we have had to give the name O. luteo-purpureum, that we take the opportunity of illustrating two of the extreme forms, in order to show how widely they differ. Other forms, equally distinct, have presented themselves, and now that there are plenty of the species in flower it would be easy to find numerous varieties differing from each other only in shades, but which would, step by step, fill up all the space between the extreme varieties we illustrate, and thus establish the identity of the whole, and point out the necessity of glving them but one title. As with most other variable Orchids, the extraordinary variability of the species may be accounted for in a great measure by the large area over which it is distributed. In this case its stability is still further encroached upon by the great variety exhibited in the flowers of the plants from each locality. Thus it is that varietal names which were well understood when the plant was very rare have now but little meaning. The only one which gives distinct features which run consistently throughout the whole of the plants imported is the one named sceptrum, which Messrs. F. Sander & Co., of St. Albao's, recently imported, and which is distinct enough to warrant its name being preserved. In the neatoess of its habit, in the attractive spotting of its petals, and the almost uniform width of its floral segments, it resembles O. facetum, and is very attractive.

The earliest gatherings of O. luteo-purpureum were made on the western slope of the Central Cordillera by Linden in Quindiu, by Roezl nearer to Medellin, and later on by Shuttleworth and Carder at San Domingo. Apropos of Roczl's gathering, he relates that he employed the native children to collect the specimens for him, and that he derived much pleasure from his business relations with them, and they both pleasure and profit from their new occupation; we can easily imagine the zest with which they pursued such a congenial occupation. Weir found the plant

on the Eastern Cordillera, 100 miles south of Bogota, and a matter of a ten days journey from where it had formerly been collected; and later on Blunt sent it from the same place.

Although so very variable the plants of each locality are easily recognised by those who know them well, and they thrive when grown with the O. Alexan-Our illustration fig. 114 represents a good variety of the Quindiu type, and fig. 115 a rather

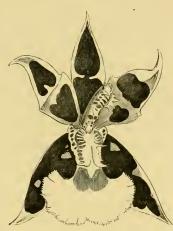


Fig. 114. -ODONTOGLOSSUM LUTEO-PURFUREUM (QUINOIU VARIETY).

narrow petalled variety of the Bogota district, but among the latter many extraordinarily fine and showy things often appear.

What right the plant has to the "purpureum" part of its name does not readily appear, as the flowers of all the varieties are light yellow, in different shades, marked with brown of different tints, the blades of the lips being white, often changing to yellow. Perhaps a form of the Bogota O. luteo-purpureum

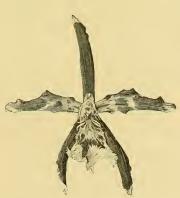


FIG. 11S .- ODONTOGLOSSUM LUTEO-PURPUREUM (BOGOTA VAR ETY).

was the plant Lindley had before him when he described O. crispum for Folia Orchidacea-" a most beautiful species, occasionally as much as 3 feet high; flowers large, yellow, with a purple spotted centre; column deep purple." At all events, the description fits O. luteo-purpureum better than it does the O. Alexandræ, which is reputed to be synonymous with O. crispum. The flowers have a purplish tint when dried, and it is possible that some confusion may have been caused by naming and describing dried

HOME CORRESPONDENCE.

Vellow Spring Bedding Plant.—If Mr. Ingram has not yet tried Viola Yellowboy in his spring garden, I think he may find it not only the very earliest of all yellow-flowered Violas, but a capital bedding-plant for his purpose. This is not only an old friend, but it has never been beaten by much finer flowers in point of earliness or freedom. As the habit is dwarf and dense it makes a capital plant for edgings or yellow carpets. The value of a bedding Viola is that it may be increased in great quantity in a short time; which is more than can be said for the best of Polyanthuses, as the creation of a "big stock of any kind" requires several years. No doubt by planting remote from all others a fairly true strain may be secured from seed, but that is perhaps very difficult in most gardens. Still some of the yellows, especially of the duplex forms, produce splendid masses of colour, and very early, and if a quantity can be had, all of rich hues and of even habit, they can hardly be excelled. A. D.

— I think Mr. Ingram will find that Ranunculus montanus will suit his requirements. R. C. Appleton, Everyley.

— I am much pleased you brought this subject.

— I think Mr. Ingram will find that Ranunculus montanus will suit bis requirements. R. C. Appleton, Exercity.
— I am much pleased you brought this subject into notice (see p. 550), as where spriog bedding is carried out the want is very much felt, and if some one could raise or introduce one similar in habit to Alysaum saxatile or Arabis albida, and to bloom as early as the Arabis, he would confer a boon upon gardeners and all lovers of spring gardening. I have tried Fansies and Violas, but can rarely get them in bloom before the end of April or beginning of May, consequently they are hardly at their best when they have to he taken up to make room for the summer bedding plants. I should like to have a good yellow Cowslip or Polyanthus. Perhaps Mr. Ingram would be kind enough to recommend one, and also state whether he has put his improved Cowslips in commerce. Our spring bedding this year has been lovely, indeed far before the summer display. The plants we chiefly use are Hyacinths, Tulips, Aubrietias, Arabis, Daisles, Myosotis disstitifora, double Primoses (filta and white). My employer and many visitors like the Daisles best of all. I have whole beds of them planted, red and white alternately, which are far more effective than when planted in lines of separate colours, as each colour, when mixed, shows up the other. To those who have not tried the nabove method I would strongly recommend them to shows up the other. To those who have not tried the above method I would strongly recommend them to do so, and I feel sure they will be highly pleased with the result. F. H., B.

Early Melons.—When anything is really well done, more especially by an enterprising young gardener, a note of the same ought to be made and duly recorded in the Gardeners' Chronicie. At Newbold Revel oo Saturday, April 26, I had the pleasure of seeing a very fine house of Melons, which did great credit of Mr. John Coysh, the clever young gardener at this place. There were eighty-five fruits in all, some ripe and cut, and others approaching more or less the ripeoing stage. This variety, which no doubt Mr. Coysh will name the "Newbold Revel Scatel Gem," was obtained by a cross between Conqueror of Europe and Scarlet Gem. It is a handsome fruit. Mr. Coysh describes it as a free setter, of good constitution, and of early proclivities. Two fruits, Mr. Coysh informs me, had been sent to the floral meeting to be held to-day (April 29) in Early Melons .- When anything is really well irec setter, of good constitution, and of early proclivities. Two fruits, Mr. Covsh informs me, had been sent
to the floral meeting to be held to-day (April 29) in
the Town Hall, Manchester. The house in which
these Melons are growing is a neat and useful spanroofed structure, 29 feet long, 7 feet 6 inches wide,
and 9 feet 9 inches high. The space underneath the
beds in which the Melons are grown is available for
the forcing of Seakale, Rhubarth, &c. I need hardly
say, the pit in which these Melons were grown is
adequately heated, but this I should qualify by adding
that for about a week the plants had to comport
themselves in a rather low temperature owing to a
mishap to the heating apparatus. These Melons,
Mr. Coysh informs me, average 3 lb., and some
4 lb. in weight. Last year they gathered fifteen nice
fruits from two plants, which says much for the fruitfulness of the variety; and this from the first fruiting,
not from the second fruiting of the same plants, Mr.
Coysh preferring always to replant. Wm. Miller,
Combe Abbey Gardent, April 29.

Melons in Cold Frames.—As the time is drawing near when frames now containing bedding plants will be vacated, a few remarks as to how a few of them may be profitably used, especially by those not having better accommodation for the purpose, in the production of Melons during the summer months, may not be without interest to some of your readers. The only preparation that is necessary as regards the bed, is to place the frame, or frames, on a south or west border (the former is the more favourable aspect), and under the centre of each light to put a barrow load of soil, consisting of three parts of good loam and one of lime rubble and horse droppings. This

done, the frame should be kept closed for a day or two to get the soil warmed a little, after which the Melon plants, which should be clean and vigorous-growing, should be planted two in each light and about 9 inches apart on the mounds. The soil should be pressed firmly about the roots, and the plants le watered and shaded from bright sunshine for a few days, when it should be discontinued altogether, as the Melon is a sun-loving plant. These plants, bearing in mind that there is no bottom-heat in the frames other than that imparted to the soil by the sun, will require very little water at the roots afterwards; they should, however, be damped overhead, and shut up early on bright afternoons, to encourage a clean growth. The plants should be stopped when they have made the third rough leaf, and three shoots resulting from this stopping trained regularly over the bed will be sufficient for each plant. These, when they have attained 18 inches in length, should have the points nipped out, which will result in fusit-bearing shoots being produced. As soon as the flowers are expanded fertilise them about mid-day when the pollen is dry, withhold the syringe, and ventilate more freely until the fruits have set, when a closer and moister atmosphere should be maintained. Three or four fruits, according to the size which the varieties grown attain to and the condition of the plants, will be a sufficient crop for each plant to bear, and these should be distributed pretty regularly over the plants. The shoots, which should be kept well thinned out and be no closer together in each light than if the latter contained only one plant, should be stopped at one joint beyond the fruit as soon as the latter have set. As soon as the fruit—which should be letwated above the foliage or flower-pot just when they begin to swell—approaches maturity, which state will be indicated by a cracking about the stems, syringing should be discontinued and a freer circulation of air admitted. High Cross Hybrid is a good variety for framework. Cutti

The Frost and the Fruit Crops.—Most saddening indeed is it to examine the fruit bloom throughout this district, as evidences of the effects of the recent sharp frosts are terribly abundant. How the Plum and Pear bloom, so luxuriant, so robust, and so beautiful, had been destroyed only a cursory examination showed. When, however, curiosity led me to examine unopened and most immature Apple and Cherry bloom, I found in almost every case, sort making no difference, that the germ of the fruit was blackened and killed. We shall presently see the Apple bloom expanded, looking doubtless lovely in its rosiness, but it will soon fall because of its lack of fertility. If out of the general destruction any one kind shows life and fruitfulness, let it be known, for if found to equally hardy in other places its possession must be a great boon. Throughout this extensive market garden district the loss will prove enormous, and its effect upon the labouring population will also be unfortunate, as a fine fruit crop gives abundant and well paid employment. Sometimes our fruit trees when in bloom suffer from fierce sweeping cast winds, then we call out for shelter, but this season the wind, though cold enough, really was less to blame than the very low temperature that carried destruction as much where the wind was quiet as where it prevailed. It is worthy of observation that the Blackthorn this spring bloomed most luxuriantly; are, therefore, Blackthorn winters are breader?

is more or less abundant? A. D., Bedjont,

— The week ending on April 26 has proved one
of wholesale injury and total ruin to the major portion
of the fruit crops in this district. As usual, this
abnormally mild winter has decoyed the crops forward
to destruction. As day after day passed on throughtout April—abnormally cold as well as dry—hopes of
a sure and abundant fruit crop rose higher and yet
higher. No doubt, the drought and the cold hardened
the fruit and blossoms for what was coming, for the
majority of the crops bore a frost of from 10° to 12°
with apparent impunity. But when the frosts
increased from 12° to 18° several nights in succession
the bloom was blackened, the embryo fruits frozen
through in the most wholesale way. It is impossible
as yet to write with certainty of the actual state of the
crops. For several mornings in succession the Apple
shoots were so severely frozen through that the entire
shoots hung down as if actually killed. The bloom,
however, being rather late, it is difficult as yet to
divine the effects of such freezing on the future
Apple crops. The probability is that a large
proportion of the fruits are destroyed. Forward
Pears are also frozen through, the embryo fruit
not blackened on the outside, showing a black line or
streak down their centre or core, which is a sure
proof of injury as irreparable as fatal. Cherries have
also suffered severely, but the most cruel cut of all
has been given to the Plums; these never promised a
more full crop, but will now yield little or nothing.
This will be a great loss, especially to those who
depend on their Plums to pay their rents. There was
but a scant crop in most localities last year, and this
year's promise of abundance appeared most oppor-

tunely to make good last season's losses, and now this year's wreck of the Plum crop is complete in this district. Gooseberries, Currants, and Raspherries, all of which were full of promise, are also severely injured. Strawberries were hit so hard several days in succession that the leaves lay quite flat on the surface of the ground. It may be hoped, however, that the embryo blooms were not sufficiently advanced to be scriously injured. Possibly the cold wave may have expended its chief force in the Eastern Counties, as I have heard from Surrey since the frost that the fruit crops are not seriously injured. [We are sorry not to be able to confirm this. Ed.] Assuredly around this district the major portion of the fruit crops have vanished. The effects upon Roses and other plants have been almost equally disastrous; the flowering shoots of Tea Roses showing buds are in some cases quite shrivelled up, while in others they have escaped with but little injury. Forward blooms of Rhododendrons and Azalea mollis are quite destroyed. The early Forget-me-Not, dissitifiora, has every bloom blackened, while Marie Louis Violets that have been in bloom in the open all winter have had the plants severely injured. All Potato tops and Asparagus have been cut down to the ground, while early Peas and Broad Beans have suffered more than I remember to have seen them. D. T. Fijts.

— Fruit prospects in this locality were most promising until the frosts experienced between the 18th and 22 of April set in. Fruits of all kinds have suffered severely, even wall fruits under a covering of Eddy's No. 5 shading are all lost. Early Peas on a north border, with a protection of Spruce boughs, are cut to the ground. Vegetation in this part of Berkshire being so forward, could not stand against such unseasonable weather. 3. H. Rose, Lockinge Garden, Wandage.

Spring Cabbage.—I am growing three sorts of Cabbages for our spring supply — Heartwell Early Marrow, and Wheeler's and Sutton's Imperial. They were all sown on July 16, and in the second week of September 2000 of Heartwell Early Marrow, and 5000 each of Wheeler's and Sutton's Imperial were planted out. Quite two-thirds of Heartwell Early Marrow bolted, and 10 per cent. of Wheeler's Imperial; but of Sutton's Imperial I can only see thirty-five in the whole bed. I find that these three sorts suit me very well in this chalky soil, coming in in succession as named above. We planted another bed of 1500 plants of Heartwell Early Marrow held of 1500 plants of Heartwell Early Marrow for this being, I think, explained by the time of planting. In January, the weather being mild, we planted out the surplus stock of the three sorts, and none of these have bolted. They will carry us on till the spring-sown plants come in, as although I want from 5 to 6 cwt. a week I never leave the stumps to sprout. For a spring-sown Cabbage to turn in quickly I find none better than Sutton's Reading Altheart, as they can be planted over close between Peas and Beans, and grow very fast. C. F. Prangnell, Kensington and Chelsea Schools, Banstead.

Bees and their Relations to Fruit and Flowering Plants.—Mr. J. Sheppard says "Will North Nofolk' tell us what wax for the comb is composed of, and can be prove that pollen is not converted into, or forms part of that substance?" Wax is composed of, say, in round numbers, 100 parts — about 80 per cent of carbon, 13 of hydrogen, and 7 of oxygen. Any beekeeper having an observatory hive (I have two), can if they choose prove that pollen does not in any way, either in a crude or digested state, enable bees to make wax. You may supply them with any quantity or quality you please, naturally gathered and stored by themselves, or artificially produced and given to them, and no wax will be made, for the very good reason—pollen does not supply the uccessary material. Give them caue: sugar, or honey and water, and they will make wax, without having access to pollen. I have "read up" the Gardeners' Chronicle for something over forty years, and it is refreshing to find history repeating itself. It does not follow because Aristotle wrote upwards of 2000 years ago, and Huber something less than a century, that they were not acute observers of bees and flowers. They have also recorded facts that have not yet been called in question by those best qualified to judge. I am in ohaste to reply, this interesting subject will keep, and I hope lose nothing; in the meantime I can "read up" some of the old authorities, such as Evelyn's Sylva, &c. North Norfolk.

Rhododendron "Otto Forster,"—Of all the beautiful-scented Rhododendrons which have resulted from cross-breeding, none can surpass one which is mentioned in your notice of the proceedings of the Scientific Committee of last week. For some years I have carefully studied these plants, and my mature

conviction is that R, Otto Forster is the finest of all I know. My cool greenhouse has been glorious for some weeks with the profuse trusses on three plants of this variety, planted in a peat border. Mr. Otto Forster raised it by hybridising R. Veitchianum with pollen of R. Edgeworthii. He sent me three plants, and made over the rest to the Messrs. Veitch. Undoubtedly, in my opinion, the hybrid surpasses both parents. The blossoms are larger, and the foliage finer than is the case with the female parent. The flower and the habit, again, are better than in R. Edgeworthii, at the hybrid is far more floriferous. Till the present year I had no notion of its capacity in this respect, I had no notion of its capacity in this respect, I had sone before the sent buds. In the summer of last year it formed blossom-buds; the side-shoots then grew, and again formed buds sightly higher than the centre bud. In the spring the three trusses of flowers opened simultaneously, and formed one grand mass of immense fringed white florets with yellow centres, and with the most delicious scent. I ruthlessly cut my plants, and sent basketsful to many friends, who have expressed the utmost admiration. I am always careful not to praise unduly; but I must congratulate my friend most warmly on his most lovely production. J. H. Mangles, Valencow, Hatelmere.

The Best Potato at Present, — There are one or two important things that have not been touched upon by either of your correspondents which I should like to allude to. The first of these is the soil which best suits the Schoolmaster and Magnum Bonum. It not unfrequently happens that a Potato turns out remarkably well in cropping and table qualities off some soil, and we see this Potato recommended as "the best Potato in the world," while no mention is made of the kind of soil that produced these results. At the same time, grown on a soil totally different in character, the same Potato might be almost "the worst in existence." Now I have found this to be the case with Schoolmaster. I have found this to be the case with Schoolmaster. I have found this to be the case with Schoolmaster. I have found this to be the case with Schoolmaster. I have found the torp was not worth digging up. On the other hand, grown on medium and heavy soils, the crop and table qualities have been all that cool have to might soils, but is not floury when cooked. The best Magnum Bonums I ever saw were grown on heavy soil, and this and a medium heavy are the most suitable for these varieties; while for such sorts as the Americans it cannot be of too dry a nature. I grow the Champion for a late supply, and no better Potato can be found for very shallow soils, indeed these are the only soils it should be grown on, when it will be found not to be particularly coarse. The case of its being black bruising the property lawriant balm will, I think, prevent it from becoming a general favourite. T. H., B.

Tree Violets: Double "Swanley White,"—
I received about three years since, immediately on its
introduction, this really fine double white Violet, which
in size of bloom and richness of fragrance, has not, to
my mind, been exceeded by any other, before or since.
Indeed I cannot help thinking with a Sussex friend,
who sent me yesterday a "posy" of Count Brazza,
that they are synonymes. However, my present
object is to ask what you think of growing them like
Tree Ferns—umbrella shaped; or, have any of your
correspondents any experience thereof? I have on
my few plants—I mean the older ones—taken off
every runner or offset as they appeared, with the
result that I have a stem, firm and woody, several
inches long, and with numbers of blooms handsomely
arching all round, and falling gracefully towards the
rim of the pot. W. J. M., Clonmel.

Anemones.—There is little that is new to be said about these beautiful flowers, but a word concerning their frost-conduring qualities is excussible. During the successive severe white frosts that did so much mischief, searing and scorching up flowers of many kinds, and literally destroying them, I found the Anemone blooms laid nearly flat by the frost, to come up again daily under the benign influences of the sun and to be absolutely uninjuned. Really no weather seems to injure the flowers, because if rain prevails the blooms close up, and open only when the sun again peeps out. I have heard from various directions the warmest praise of Anemones from those who, having had seed, have raised them for the first time. They, and probably many others, perhaps little imagined how beautiful a display of rich bloom they could obtain at so little trouble. As there seems still to be some doubt as to the obtaining of really double flowers from single strains, I may say that I get a moderate proportion of doubles from single sonly every year, and many of them are singularly

beautiful. Too many doubles would be undesirable, hecause they do not seed. It na much larger proportion of single flowers may, however, be seen evidences of doubleness, anthers here and there having run out into petals. By simply selecting seed from the finest and richest coloured flowers the properties of a strain are soon greatly improved. I should very much like to see prizes offered for Anemones in pots at some of our spring shows, for a class would be created that would prove singularly attractive. This would in no case be one in which the trade could excel the amanuary or gardener, for from a packet of seed any on might easily raise hundreds of plants, and whilst the first year would enable all to bloom so as to admit of selection, the second year would give very fine roots. It is a good time to sow now, though I, for the sake of convenience, always sow as soon as the seed is ripe, in shallow boxes, dibbling out the seedlings in good ground in rows 10 inches apart, and as soon as large enough to handle. I have a bed of last year's sowing now blooming grandly. A. D., Belfont.

The Berbageous Borden.

THE "SIR WATKIN" DAFFODIL,-The Editor's note at p. 552 raises a question of much importance to all the raisers of new flowers, and as one been successful in raising many new varieties of florists' flowers, I venture to claim for myself and for others the right to name the flowers of our own raising, and at the proper moment, which is when the plant is ready to be sent out. Now what is the history of the double naming of Sir Watkin alias James Dickson? Mr. Pickstone, its raiser, sent blooms to many, and amongst others to Messrs. Dickson. They sent blooms to Mr. Burbidge, who, doubtless thinking they were the raisers, christened the plant "James Dickson," and showed it about privately. Messrs. Dickson applied for more examples, which Mr. Pickstone supplied, and these they exhibited at the Horticultural Society, where a Firstclass Certificate was awarded. All this was without the raiser's knowledge or consent. The name was thus registered as James Dickson. In the meantime, Mr. Pickstone had submitted his flowers to the Wynn family, asking leave to honour his neighbour, Sir Watkin Williams Wynn, by calling the Daffodil Sir Watkin, after him. The compliment was appreciated, and the plant was named accordingly. Messrs. Dickson acquiesce in this, now that they are are aware of it, and the plant will be called Sir Watkin in the agreement by which they are purchasing it from Mr. Pickstone. There will, I suppose, be no difficulty in putting the matter right at the Royal Horficultural Society, by amending the record, and in future there ought certainly to be some rule which would prevent the naming of a plant which thus comes casually before the Society without its raiser's knowledge and consent. IVm. Brockbank.

NARCISSUS "SIR WATKIN."-In addition to the intrinsic merits of a floral novelty there is an added charm when the history and associations are presented at the same time. This induced me to carefully investigate the history of Mr. Pickstone's new Narcissus Sir Watkin, for which purpose I visited the gardens where they are growing, and carefully examined large numbers of cut flowers. Pickstone has since kindly brought me flowers from the garden where the variety originated, and tells me the seedlings are what are known as wind or accidentally cross-fertilised. Amongst those he brought were double and single Telamonius and single and very slightly double incomparabilis. At Caerwys were growing the double and single Telamonius, with the variety of incomparabilis. That the latter is one of the parents is clearly shown by the peculiar fragrance of that species, and still more in the revolute arrangement of the anthers, as shown in the variety figured in last week's Gardeners' Chronicle, while the much enlarged crown and broad perianth leave no doubt that Telamonius or Pseudo-Narcissus is the other parent. (I may here state my opinion that Telamonius, lobularis, and Pseudo-Narcissus are but varieties or geographical forms of one and the same plant.) Among Mr. Pickstone's seedlings are many forms with varying shades of colour from whitish to orange-sulphur, some having very narrow perianths, others broad, as in the form you figure. The cups or corona vary in length and width from that of incomparabilis to Pseudo-Narcissus. This would

indicate a first batch of numerous seedlings, or, what is more probable, there are several generations of self-sown seedlings. That no scientific or artificial hybridising gave rise to this interesting lot of varieties have clearly proved, and the same chance or accidental crossing produced the interesting lot of seedlings grown by the late Mr. Leeds, but with this difference, that Mr. Leeds' collection contained nearly all the species known to cultivation and all growing in close proximity. Several years ago, when I made inquiries into the subject, the only person I could find to have worked on scientific principles since the time of Dean Herbert was Mr. Backhouse, who raised Emperor and Empress, I mention this in hopes that some young cultivators may direct their attention to a field so full of promise when careful hybridising is carried out. I say young cultivators, because it requires long life and diligent care to fully realise the pleasure and benefit of raising seedlings and bringing to perfection such slow subjects as Narcissus. I note your editorial remarks respecting the name of Mr. Pickstone's flower, but certainly think he is entitled to give a name to his own baby. It is his particular wish that it should be called "Sir Watkin," and, as he had received that gentleman's permission to have it so named, it ought at once to be accepted. Had it been known that the flowers were not produced by Messrs. J. Dickson, but only sent to them for identification, I am quite sure Mr. Burbidge would not have named them "James Dickson." J. Tyerman.

NARCISSUS INCOMPARABILIS JAMES DICKSON, ALIAS "SIR WATKIN,"-It is with pleasure I noticed the excellent figure of this noblest and, one may say, best of all Daffodils-for at the present there nothing in the field equal to it. Mr. Wolley Dod's remarks at p. 552 are as near the truth as it is possible to get, on account of the obscurity of its origin; on the other hand, those of Mr. Brockbank on the same and preceding page contain some inaccuracies, to take all of which seriatim would occupy far too much space. First he says Mr. Pickstone was the raiser, afterwards that it originated as a chance seedling in that gentleman's garden. Is that raising? The fact is, it is one of Nature's own beautiful children, and I contend that Messrs, James Dickson & Sons were perfectly justified in adopting the name, which the Rev. Wolley Dod and Mr. Burbidge had simultaneously but independently given it; if I mistake not, it was Mr. Brockbank himself who first suggested to Mr. Pickstone, after it had been certificated (whether he knew of that fact or not I cannot say), the name of "Sir Watkin;" and as it was a very favourite Welsh name, no doubt it was a most agreeable suggestion, and I have no doubt if that name is ultimately adopted it will materially assist to make the variety popular. Mr. Brockbank says he took the flowers on different occasions for Princess Mary of Cambridge and Emperor, the former being very different to the latter, if I know that variety at all; lower down (p. 552) he says it "had been unheard of at the Conference." This is a remarkable statement, if, as I understand, Mr. Burbidge himself showed the blooms of it to Mr. Brockbank, and the latter pooh-poohed its superior value, and Messrs. Barr, Ware, and Walker, all saw and admired them (as well they might); the latter was especially struck with their dis tinctness and value for all purposes. Mr. Brock-bank further says, when he visited Mr. Pick-stone's garden the flowering period was nearly over, yet he was able to decide "there was but one variety," which is only part of the facts; in this respect there is no telling what will turn up, for the end of this Daffodil is not yet. Mr. Wolley Dod has, I believe, suggested its true origin, as between one of the larger trumpets, and the typical incomparabilis. I may add, that I quite think the large trumpet is N lorifolius, if not Emperor; in proof of this I gathered flowers from among Mr. Pickstone's clumps of a large trumpet, which I could not distinguish from Emperor, also another trumpet, which I took to be the typical Telamonius. The Narcissi I saw in Mr. Pickstone's garden, growing with this magnificent variety, were the following :- bicolor, moschatus, single and double Telamonius, single and double incomparabilis, a whiteperianthed form of Pseudo-Narcissus; but after all I feel confident it is a natural cross between the large trumpet and incomparabilis, being much larger than either of them, with a grand cup, and a very agreeable and strong perfume. Mr. Brockbank presumes the scent is inherited from biflorus, whereas I contend it comes from incomparabilis. By whatever name it

may henceforth be known, it is one of the finest Daffodils in the market, for I measured many flowers 5 inches across, and I understand the entire stock has passed into the hands of Messrs. James Dickson & Sons, Newton Nurseries, Chester, who will distribute it during the coming antumn; and although the supply is very large, it appears as if the demand will quite equal it, and without a doubt there is a brilliant future before it. Daf.

DOUBLE DAFFODILS .- Has Mr. Brockbank really seen ripe seed-vessels and seeds (not merely ovaries an ovules) in the double Daffodils? In making this inquiry I would by no means deny the possibility or even the probability of such an occurrence. At the Daffodil Conference Mr. Krelage and Mr. Polman Moy, two of the largest cultivators in Holland, both asserted that they had never seen seed-pods in any double Daffodil. The report of the Linnean Society mentions "that in two of the most double forms ovaries filled with seeds [sic] were present." It is not quite clear from this whether seed pods are intended. E. [We have had a very large number of double Daffodils through our hands, and have always found the todus inrough our nands, and nave always found the ovules present, but we have never had the luck to see the seed-pod or the seed, though doubtless they do occur. Of Narcissus poculiformis we have never seen a perfectly constructed flower, but always more or less deformed; the ovules, nevertheless, are, in our experience, always present, though, so far as we know, no one has seen the seed. E.o..]

Reports of Societies.

Newcastle-on-Tyne Horticultural: April 23 and 24.—The annual spring show of this Society was held on the above dates, in the Town Hall and Corn Exchange. There was a good display in the several departments of flowering plants, cut flowers, bulbs, &c.; the latter were extensively represented, although so far Hyacinths are concerned it was getting somewhat late, and the plants in some cases showed the effects of having been retarded.

late, and the plants in some cases showed the effects of having been retarded.

Stove and greenhouse blooming plants were plentiful and in unusually good condition. In the open class for four there was a close run between Mr. Noble, Woodburn Gardens, Darlington, and Mr. Methven, Heathfield House, Gateshead, both being awarded 1st prizes. The first-named gentleman staged a beautifully flowered Erica Victoria, about 2½ feet across; Tetratheca ericides, about the same size; Darwinia fuchsioides, laden with flowers; and Clerodendron Ballourianum. Mr. Methven had Dendrobium devonianum and D. nobile, both large and profusely bloomed; Occidium sphacels, but the profusely bloomed; Occidium sphacels, the profusely bloomed; Orcidium sphacels, but the profusely bloomed; Orcidium sphacels, and the profusely bloomed; Orcidium sphacels, South-land, and the profusely bloomed; Orci

some fourteen spikes: this was much the finest plant in the exhibition.

Azaleas were nicely shown, Mr. Ford taking the lead with four medium-sized, well flowered plants. Deutitals are always well represented at Newcastle, and on the present occasion were beautifully bloomed, 1st honours for six going to Mr. Ford, who had good examples about 4 feet through. Mr. Methyen was 1st for three specimens, and Mr. Morris 1st with a single plant. Mr. J. Wood, Fenham, was casily 1st in the class for three Genistas with splendidly bloomed plants about 5 feet high well clothed down to the pots. Spircas were present in quantity and in excellent order, large, profacely flowered, and just to the day in the opening of their flowers. In the open class for six the 1st prize went to Mr. Noble, who staged a faulties half-dozen; 2d, Mr. W. J. Watson, Fenham; 3d, Mr. W. R. Armstong, Niveastle, both having well managed groups. In the class for six muserymen excluded, Mr. Noble grant of the class for six muserymen excluded, Mr. Noble grant of the class for six musers were the class for six musers with the class for six musers with the class for six musers with six compact plants of Cincrarias of medium size, full of flowers and healthy of the Valley was shown in beautiful condition by Mr. Noble was 1st vit in another class. Lidy of the Valley was shown in beautiful condition by Mr. Ston, whose half-dozen examples in the open class were the best we have seen for a long time. For six hardy Primores the 1st prize went to Mr. McInty, who had a nice group.

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double Tulips.—ist, Mr. McIntyre; 2d, Mr. Morris-Auriculas were shown in considerable numbers and in nice condition, some with the flowers severely thinned in the way admitted by florists, others with larger and consequently more effective trusses. With twelve (alpines excluded) Mr. Adams, Swalwell, was 1st; Mr. T. [E. Hay, Killingworth, who also staged a good dozen, [2d] and Mr. [arrett, 3d. For six (alpines excluded) Mr. Hay, was 1st, and Mr. Adams 3d. Twelve alpines.—rst Mr. W. J. Watson; 2d, Mr. Adams; 2d, Mr. T. E. Hay, Cut flowers included Camellias, Rhododendrons, Azaleas, Roses, show Pansies, fancy Pansies, &c., and the competition in all cases was good. (From a Correspondent.)

National Auricula (Northern Section).—
This was held on Tuesday, the 20th ult., in the spacious Town Hall at Manchester, when a very large number of the favourite flowers was staged, entirely by the Northern growers, for as far as we could ascertain none of the Southern fanciers were exhibitors, the plants being past their best in the South. Mr. H. Wilson and Mr. E. Pohlman, both of Hallidax, ran each other very closely in many instances, the former apparently taking the premier position, and without a doubt his plants merited the honours lavished upon them. There is no mistake about the quality of the blooms many of these growers can bring out. Traill's Prince of Greens was an allound favourite, and especially good in several collections, but was one of the kinds which a few days longer would have greatly improved. John Simonite (Walker) was also very strongly represented, and is assuredly one of the varieties of the future, provided that a sufficient stock can be found to meet the demand already existing and kleyl to a rise for it. "A bonny fine flower, of good breed," as some of the Yorkshire growers expressed themselves, it really is, and more is the pity it is so slow to increase. Read's Acme was also well to the front, and was scarcely ever better shown. There was very keen competition in most of the classes, especially in those provided for single plants of the different kinds; as an example we may mention that for selfs, in which if we mistake not there were over fifty entries, each plant themselves, it really is, and more is the pity it is so slow on increase. Read's Acme was also well to the front, and was scarcely ever better shown. There was very keen competition in most of the classes, especially in those provided for single plants of the classes, especially in those provided for single plants of the different kinds; as an example we may mention that for selfs, in which if we mistake not there were over fifty entries, each plant hiving meritorious points, and the work of the large staff c. judges was by no means light, especially in these single plant classes. New varieties were not very numerous, a ruby self exhibited by Wm. Brockbank, Esq., under the name of Lord Rosebery, was honoured by the premier award in the class for selfs; we mistook it for Dukej of Argyle, but found it was larger, and rather more even, with a good tube and paste, and it promises well; there was also a very fine new green-edged variety, exhibited by the same fraise, crists, even and the self that th

and C. J. Perry, with ten large even pips; 3d, Mr. Wil-liam Taylor, with George Lightbody, and a seedling; 4th, S. Barlow, Esq., Stakehill, Manchester; 5th, Mr. R. Lord, Todmorden; 6th, Mr. F. Shaw. This was also a very keenly contested class, Mr. Beswick running the premier collection very hard, so that the judges had a were difficult task to decide the investment.

R. Lord, Todmorden; 6th, Mr. E. Shaw. This was also a very keenly contested class, Mr. Beswick running the premier collection very hard, so that the judges had a very difficult task to decide the issues.

A PATROF SHOW AURICULAS, DISSIMILAR—"madden "growers only.—There were only two competitors, the leading position being taken by Arthur Potts, Esq., with elading position being taken by Arthur Potts, Esq., with elading position being taken by Arthur Potts, Esq., with elading position being taken by Arthur Potts, Esq., with elading position being taken by Arthur Potts, Esq., with elading position being taken by Arthur Potts, Esq., with elading position being taken by Arthur Potts, Esq., with elading position being taken by Arthur Potts, Esq., with elading position being taken by Arthur Potts, Esq., with elading the property of the prop

good trusses.

FOUR ALPINE AURICULAS, DISSIMILAR.—Ten exhibitors staged for the most part good collections, the 1st prize falling to S. Barlow, Esq., with strong, well grown plants of President (Turner), Mrs. Llewellyn (Turner), and Mrs. Dodwell (Turner), the second bad an enormous truss; 2d, Mr. J. Beswick, whose best plants were Diadem (Gorton) and Daziel (Turner), the former with fifteen excellent pips; 3d, Mr. E. Shaw, Diadem being again very good; 4th, Mr. Heys; 3th, W. Brockbank, Esq.; 6th, Mr. Prescott. SINGLE ALPINEAURICULAS, SHADED.—Gold centre.—Twenty-nine plants were staged. Premium, Mr. E. Shaw, with a grand plant of Diadem; 1st prize, Mr. S. Heys, with a seedling from Diadem; 1st prize, Mr. E. Pohlman. Esq., with Mariner; the same exhibitor taking the 3d prize; 4th, Mr. G. Geggie; 5th, Mr. E. Pohlman. White centre.—Twenty plants were entered and staged. Premium, Mr. Pohlman, with a grand seedling; the same exhibitor taking the 1st prize, also with a seedling; 2d, Mr. R. Heys; 3d, Mr. Partington, Middleton. POLYANTHUSES: There DISSIMILAR.—Black grounds.—1st, Wm. Brockbank, Esq., with Cheshire Favourite, Exile, with the very fine pips; and Beanty of England, with six pips. 2d, Mr. 10o, Peswick, with Lord Beaconsfield, Exile, and Blackbird; 3d, S. Barlow, Esq.

Of Digitally, when he had been a process of the process of the policy of the process of the proc

tection, the same exhibitor axing the 1st prize for the velve dissimilar Primroses, his being the only collection staged.

THE ROYAL HORTICULTURAL AND BOTANICAL SOCIETY'S portion of the display reflected great praise on Mr. Findlay for enticing so many exhibitors to occupy what would have been blank space. Mr. William Rumsey, Joyning's Nursey, Waltham Cross, staged a magnificent bank of pot and cut Roses, which were really the feature of the exhibition next to the Auriculas, the whole showing the best evidence of culture and selection; the Certificate awarded was well merited. The cut blooms (by the hundred) were remarkably fine, especially Marcehal Niel. Messrs. Fisher, Son & Sibray, of Sheffield, also staged a fine collection of stove and greenhouse plants, including Azaleas, greenhouse Rhododendrons, Asparagus plumosus, several Orchids, &c. Annong the Orchids were Vanda tricolor amabilis, and the variety

ON THE SPREADING OF THE POTATO DISEASE.

IT has given me great satisfaction to see that my theory of the tendency in the disease to alternate between an early and later period of its general outbreak, has been fully corroborated by the tables given by Mr. Plowright in the Gardeners' Chronicle of March I. These tables, based on the reports published in that journal for the last seven years, are very interesting. Mr. Plowright has extracted from them the principal lesson they contain, viz., the demonstration of the above-mentioned alternation. There are, however, still some other facts to be derived from this excellent table, to which I beg to call attention.

I have shown by experiments that the disease commences spreading from its starting points as soon as the Potatos have appeared above-ground, and that it developes slowly at first. If this be true, the disease must, generally speaking, be more advanced in the southern than in the northern districts of a large country at a certain early period of the year, because it was starting earlier in the southern districts. Mr. Plowright's table shows this in a very marked way. Taking the average of all the cases in which disease was reported in the last week of July and the two or three first weeks of August for the years 1877-83, we find that in Scotland 11 per cent. reported disease; in England — northern counties, 25 per cent.; mid-land counties, 58 per cent.; southern counties, 89 per cent. reported disease.

For comparison it ought to be remembered, what a well-known mycologist says on the suddenness of the attack of the disease ; "A field of apparently sound plants of one day may succumb the next, and every plant be prostrate on the ground." (W. G. Smith, in Science for All.) In another quotation from author in the same paper, speaking on the Potato disease, Mr. Smith says: "It generally came suddenly in July, and then increased and multiplied with such extraordinary rapidity, that in a few days it would cover the whole of North-Western Europe.

The table for 1878, however, shows that the disease was present nearly everywhere in the southern counties of England, and in many cases in a far advanced state, while the twenty-three Scotch reports show that up to that period no disease was observable in that country. On looking at the map it will be seen that Ireland is situated pretty nearly in the same latitude as England. When the southern counties of this country are not taken into account, it would, therefore, be expected that as a rule the disease would attain the same degree of development at about the same time in these two districts. This is indeed just what the table shows on an average of seven years. England (excluding the southern counties) reports 58 per cent. of disease, Ireland 53 per cent. Again, it would be expected that the disease would advance rather more rapidly in the western districts because of the greater rainfall, Eastern and midland counties report 60 per cent. of disease; western, 71 per cent.; Wales, 74 per cent.
In Mr. Plowright's table the alternation of the

disease from year to year in the United Kingdom is very obvious. At the end of July, however, the disease is a little too much advanced in the southern counties, and not sufficiently advanced in Scotland for obtaining a perfectly accurate view of the case. The alternation is, therefore, more distinctly shown by excluding Scotland and the southern counties of

	Year.	United King- dom; Disease Absent out of 100 cases in	United Kingdom, exclusive of Scotland and the South- ern Counties of England; Disease Absent out of 100 cases in
Late	1877	50	43
Earty	1878	41	31
Late	1870	44	39
Early	1885	31	2.5
Late	1881	80	80
Early	1882	9	6
Late	1883	68	66

It will be seen that in all cases the difference between two consecutive years is greater when Scotland and the southern counties of England are not included.

In taking the mean of the four late and of the three early years respectively, we have for the United King-dom-in the late years, 61 per cent. disease absent; in the early years, 27 per cent. absent. That this great difference is only due to the natural alternation of the disease is obvious, from the fact that the mean rainfall for each of the two classes of years was, practically speaking, the same.

Rainfall in Inches.

		May.	June,	July.
In the late years	 	 2 51	3-47	3.92
In the early years				3.90

The rainfall in June and July was practically the same; May only gave a trifle more rain (1 inch) in the early years. On the other hand, the weather does undoubtedly exercise a very marked influence in retarding or accelerating the general outbreak of the disease. Want of rain may make an early disease year late, and the disease in a late year will be accelerated by excessive rain, although it cannot by rain alone be made "very early." The accelerating influence of excessive rains is less than the retarding influences occasioned by want of rain.

Mr. Plowright classifies the degrees to which the disease has attained as-1, absent; 2, slightly present; 3, distinctly present; 4, severely present. Upon these points I would remark that if we take the average of these four classes for the early and the late years respectively (omitting the late year 1879, which, indeed, was something between late and early), we find that out of a hundred cases the disease was reported to be :-

		In the Late Years.	In the Early Years.
I. Absent	 	Cases.	Cases.
II. Slightly present	 	15	12
III. Distinctly present	 *	17	48
IV. Severely present	 	2	13

How are these classes to be interpreted as regards the origin of the disease in the respective fields or gardens in which it occurred? My interpretation is the following :-

Division IV., the fields "severely attacked," are those in which the disease originates directly from diseased seed Potatos. The disease has had a longer time for its development here, and therefore it has reached a more advanced stage.

Division III., fields in which the disease was distinctly visible, are, as a rule, those situated in close proximity to the fields originally diseased. They have, therefore, been early attacked by conidia (spores) coming from the originally affected fields. Some of the fields in this division may have had a few starting points in them from diseased sets, but only a very few compared to the size of the fields in question.

Division II. comprises those fields which, being more distant from the original centres of the disease (Division IV.), have only been attacked later, by spores being blown on to them, and were free from diseased sets in the first instance.

Division I. has not been visibly attacked up to the period in question, because they are most distant from the original and secondary disease centres.

I am, however, far from thinking that this interpretation exhausts the subject, for the phenomenon is not quite so simple as that; yet I do not doubt that it gives the leading principles of the spreading of the disease.

The circumstances which have a modifying influence on the propagation of the disease throughout the country especially are:-1, local showers, or their absence; 2, the direction of the wind (spores, of course, are obliged to follow the wind, and cannot go against it); 3, an open or a sheltered position of the field-in a garden, for instance, the disease advances faster than in an open field; this, according to my observations, is occasioned by the relative stagnation of the air in the garden, and not by the greater shade.

When I first found out the means of completely disinfecting the tubers I was not quite sure that this would be of any great practical value, for accepting the current opinion of the rapidity with which the disease developes, one could not help thinking that it was of very little consequence whether the disease commenced from one or two, or from a hundred thousand starting points in a country. Nothing has impressed me more in this direction than the descriptions given on the spread of the disease throughout all Northern and Western Europe in 1845. It commenced, it was said, in Belgium, in July, 1845; shortly after it was noticed in the Isle of Wight, then in Ireland and Southern England, and in a few weeks invaded all that country and Scotland. On the Continent it invaded France, Belgium, Holland, Germany, Denmark, Norway, Sweden, and part of Russia, in the course of two months. If the spread of the disease when it first appeared was at this rate, what could be expected now from the disinfection of the seed Potatos, even if made obligatory in an entire country? Of course, nothing. But fortunately this description is as erroneous as many other things that have been stated about the Potato disease; and the more I have studied the propagation of the disease the more convinced I have become that a general disinfection of the seed tubers will prove to be a most powerful means of checking its progress.

1. I have shown in the experiment made in my garden in Neuilly last year that it took about six weeks from the time the disease first appeared till all the Potatos became thoroughly affected.

2. In many instances I have seen Potato fields badly discased at one end and perfectly free from disease at the other, and have watched them in this condition for a considerable time. To quote one such instance from my diary in 1881 :-

In a Potato field about 40 yards in length I observed some disease spots on August 16; on August 23 I took down the following note:—" About 12 yards of the field badly diseased. Could not find a single disease spot in the opposite end, comprising more than half the field." Later on all the leaves were destroyed by the fungus. From this and similar observations it may fairly be concluded that the disease will spread in a given field with far greater rapidity when it starts from forty or fifty evenly distributed centres per acre than when it originates from only one place in each acre. If these fifty centres were all close together the rapidity of the spreading of the disease would not be materially increased, but the chances are that they would be pretty evenly distributed over the field. J. L. Jensen.

(To be continued.)

OXYLOBIUM ELLIPTICA. - It is not without a good deal of justice that old-fashioned gardeners mourn over old times. Half a century ago or less a host of Australian plants were in cultivation which are now either altogether lost to cultivation or are but rarely met with. Many of these were not only highly interesting, but were ornamental plants of the first rank. Unfortunately, although presenting no great difficulty to the cultivator of ordinary intelligence, they did require a somewhat special treatment, and so rapid growing and easily managed soft-wooded things have taken their places. For cool greenhouse or conservatory decoration some of the Oxylobiums are decidedly acquisitions. O. ellipticum is a neathabited shrub, with lanceolate entire leaves and terminal dense-flowered racemes of lively yellow peashaped flowers, the standards being blotched or feathered with red at the base. Nicely flowered specimens may be seen in the conservatory at Kew.

The Meather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON,

	FOR TI	HE WE	EK I	ENDI	NG V	VEDI	ESDAY	, Ar	81L 30	, 1884.	
DAY.	Вляом	ETER.	т	EMPI TI	ERAT HE A	URE	OF	duc fr Glai Tab	rome- l De- tions om sher's les 6th ition.	WIND.	77
MONTH AND DAY.	Mean Reading Reduced to 32° Fahr.	Departure from Average of 18 years.	Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 50 years.	Dew Point.	Degree of Humidity. Sat. = 100.	Average Direction.	RAINFALL
April	In.	In.							٠,	N.E.:	Io.
24	29 65	-0.13	50.2	32.0	20 2	39 -9	- 8.3	35-3	75 {	N.N.E.	82,0
25	29.69	80.0	48.2	33·S	14 7	41.1	- 7.2	37 5	87	NE.	0.00
26	29.62	-0 15	52 0	38.0	14 0	43 0	- 55	38 2	83 {	S.W.: S.S.W.	0.09
27	29.49	-0.29	52 0	36.5	15 5	43.2	- 5.5	41.5	93 {	S: E.S.E.	0.19
28	29.60	-0.17	SO . 2	38.1	12.1	44.1	- 48	39 5	83 {	S.S.E.	a.00
29	29 61	-a 17	58.5	34 5	24.0	45-7	- 3.4	41 8	83 }	N. N. W	0.00
30	29.6x	-0 16	59.0	38 0	21.0	48.4	- 1.0	38.8	70	s w.	a.03
Mean	29.61	-0.16	52.9	35-5	17-4	43 £	- 5.1	39 0	82	Vari- able.	a.39
			-		_						

April 24.—Fine and bright morning; shower of hail at 3.30

15.—Fine clear mght.

25.—Fine; dull day and might.

26.—Dull day; rano between 7 F.M. and 8 F.M.

27.—Fequent rain all day. Fine and clear at midnight,

28.—Fine; dull day till 4 F.M., sunshine afterwards. Fine
and clear at midnight.

29.—Sun shining at times; dark and dull mostly. Fog at night.

night.

30.—Fine bright day; slight rain about 7.15 P.M. Fine and clear at midnight.

LONDON: Atmospheric Pressure. — During the week ending April 26, the reading of the barometer at the level of the sea increased from 29.92 inches at the beginning of the week to 29.99 inches by midnight on the 20th, decreased to 29.96 inches by 9 A.M. on the 21st, increased to 30.03 inches by midnight on on the 21st, increased to 30.03 inches by midnight on the 21st, decreased to 29.93 inches by 9.4.M. on the 22d, increased to 30.03 inches by midnight on the same day, decreased to 29.95 inches by 3 P.M., increased to 29.95 inches by midnight on the 23d, cereased to 29.79 inches by 3 P.M. on the 24d, increased to 29.89 inches by midnight on the 25th, and was 29.77 inches by the end of the week.

The mean reading of the barometer for the week was 20.01 inches, being 0.04 inch lower than last week,

The mean reading of the barometer for the week, and 0.03 inch below the average of the week, and 0.03 inch below the average of the week. Temperature. — The highest temperature in the shade in the week was 52°.5, on the 23d; the highest to the 20th and 25th was 48°.2. The mean of the seven bigh day temperatures was 50°.4.

The lowest temperature was 36°. on the 24th; on the 26th the lowest temperature was 38°. The mean of the seven low sight temperature was 38°.

the 20th the lowest temperature was 35°. In e mean of the seven low night temperatures was 33°.2.

The greatest range of temperature in one day was 21°.6, on the 23d; the smallest range was 14°, on the 20th and 26th. The mean of the seven daily ranges 20th and 26th.

was 17°.2.

The mean temperatures were — on the 20th, Inc mean temperatures were—on the 20th, 40°,7; on the 21st, 41°,9; on the 22d, 40°,3; on the 23d, 41°,3; on the 24th, 30°,9; on the 25th, 41°,1; and on the 26th, 43°; and these were all below their averages by 6°,7, 6°,7, 7°,5, 6°,7, 8°,3,

The mean temperature was 41°, being 0°.7 lower than last week, and 6°.9 below the average of the week.

The highest reading of a thermometer with blackened bulb in vacuo placed in the full rays of the sun was 113°, on the 21st and 22d. The mean of the

seven readings was 99°.3.

The lowest reading of a minimum thermometer with its bulb placed on grass was 24°.1, on the 25th. The mean of the seven readings was 26°.7.

Rain .- Rain fell on the 24th and 26th, to the amount of 0.17 inch.

ENGLAND: Temperature .- During the week ending

ENGLAND: Temperature.—During the week ending April 26 the highest temperatures were \$5°.1 at Cambridge, \$5° at Truro, \$4' at Plymouth and Hull; the highest at Sunderland was 47°, at Bolton 49°.1, and at Sheffield 50°. The general mean was \$2°.5°. The lowest temperatures in the week were 23°.5°, at Cambridge, 25° at Wolverhampton, 25°.1 at Nottingham; the lowest at Preston was 34°. at Plymouth and Sunderland 33°. The general mean was 29°. The greatest ranges were 34°.6 at Cambridge, 31° at Truro, 25° at Hull; the smallest ranges were 44° at Sunderland, 15° at Preston, 19°.7 at Liverpool. The general mean was 23°.5°.

general mean was 23°.5.

The mean of the seven high day temperatures was highest at Truro, 55°.4, at Cambridge 51°.7, at Nottingham 51°; and lowest at Sunderland 45°.4, at

Bolton and Bradford 47°.7. The general mean was

49°.7.
The mean of the seven low night temperatures was highest at Liverpool, 37°, at Sunderland and Preston 36°.3; and was lowest at Cambridge, 27°.9, at Hull 29°, and at Wolverhampton 31°. The general

at Hull 29°, and at Wolverhampton 31°. The general mean was 33°.1.

The mean daily range was greatest at Cambridge, 22°.8, at Truro 22°.7, at Hull 20°.3; and was least at Sunderland, 9°.1, at Preston 13°.1, and at Bradford 13°.2. The general mean was 16°.6.

The mean temperature was highest at Truro, 42°.4, at Liverpool 42°.2, at Plymouth 41°.5; and was lowest at Hull, 37°.5, at Wolverhampton 37°.8, and at Cambridge, Sheffield, and Bolton, 38°.2. The general mean was 39°.8.

Kain.—The largest lall was 0.31 inch, at Brighloo, 23 inch at Truro, 6.21 inch at Blackheath and

Kain.—The targest lail was 0.31 inch, at Digniou, 0.23 inch at Truro, 0.17 inch at Blackheath and Sunderland; the smallest fall was 0.02 inch at Bristol, 0.03 inch at Bradford and Leeds. The general mean fall was 0.09 inch. No rain fell at Sheffield, Bolton, or Preston during the week.

SCOTLAND: Temperature.—During the week ending April 26, the highest temperature was 54°.2, at Greenock; at Leith the highest was 48°.4. The general mean was 51°.2.

The lowest temperature in the week was 28°.8, at Edinburgh; at Greenock the lowest temperature was 35°.2. The general mean was 31°.2. was 35°.2.

was 35, 22. The general mean was 31, 22.

The mean temperature was highest at Glasgow and Greenock, 42°, 5; and lowest at Perth, 40°. The general mean was 41°, 3.

Rain.—The largest fall was 0,33 inch, at Greenock; and the smallest fall was 0,12 inch, at Glasgow and Paisley. The general mean fall was 0,18 inch.

LAMES (17 MARIED) F. S. JAMES GLAISHER, F.R.S.

Obituary.

MANY of our readers must have had business relations with JEAN VERSCHAFFELT, of Ghent, though it is possible that some of them may have been better acquainted with his adopted son, Jean Nuytens-Verschaffelt, who died a few years ago. M. Jean Verschaffelt retired from the business after the death of his son, and after a long and painful illness died on the 20th ult., in his seventy-fourth year. The deceased gentleman was highly respected, not only in his own country, but abroad as well, as is testified by his membership of various titles of honour from foreign Governments.

- WE regret to record the death, on March 14, at Campbelltown, New South Wales, of coosumption, aged twenty-nine years, of Mr. ALEXANDER MOORE, Superintendent of the State Nursery, and late of Dublin, Chelsea, and Kew Botanic Gardens. The deceased was a most estimable young man, and had won the highest respect and esteem of all those among whom he had been living, as evinced by the fact that, although a rigid Presbyterian, on the day of his funeral the bell of the Catholic Church was tolled—a r are mark of respect for a non-Catholic, and the clergy-man of the English Church followed his remains to the grave. The deceased was the first Superintendent of the Government or Stale Nursery, established some four years ago, partly as an experimental garden, but principally for providing young stock of the best kinds of trees for the purpose of re-afforesting the country. He was a nephew of Mr. Charles Moore, Director of the Botanic Gardens, Sydney, and cousin of Mr. F. W. Moore, Curator of the Botanic Gardens, Glasnevio, Dublin.

- We have also to record the death, on April 22, at Ventnor (where he had gone for the benefit of his health), of ARTHUR HERBERT, second surviving son of W. H. DUNNETT, Esq., Stour House, Dedham, aged 29.

Answers to Correspondents.

BEDDING PELARGONIUMS: W. L. The bes The best dwarf

CLEMATISES: IV. L. Please state at what season you want them to flower,

CRESTED VINE LEAF: 9. G. & Co. There is no disease, but rather an excess of growth, like that which occurs in the crested varieties of Ferns, or the Ragged Jack Kale.

Ragged Jack Raile.

CUCUMBERS: 'J. Churchfield, Yours is a had case of
the Cucumber disease, for which, we regret to say, no
certain remedy has yet been found.—Cucumber. We
cannot say what causes your plants to "go off" just
as they commence to fruit. The soil seems good
enough, but the roots are very weak for fruiting plants,
and look as if there was something in the compost

they did not like; what that may be we have no means of knowing.

GARDENIA: E. G. The deformity is not due to any disease, but, we think, must be attributed to some irregularity in the treatment.

GLOXINIAS: T. M. & Sons. Not uncommon. Some years ago there was a race of these double-flowered forms, the doubling consisting in the outgrowth of additional petals from the outside of the corolla instead of the inside. The variety is described in Dr. Masters' Vegetable Terato'ogy.

NAMES OF FRUITS: Englond. Your Apple bears the closest resemblance to Hunt's Deux Ans of any variety we know, but we are not certain of its identity. It is of comparatively little value.

of comparatively little value.

NAMES OF PLANTS: A. IV. C. Cattleya intermedia; the form often imported with Leelia elegans.—G. Steep, Kerria japonica.—John Earl. Odontoglossum luteopurpureum, and a species of Pleurothallis which we do not recognise.—J. L. C. A. Babiana, as near as we can tell from such a poor specimen.—C. S. & Co. Orrithogalum pyrenaticum.—E. R. B. Such scraps are uterly unfit to be submitted for naming. 1, Lomariopsis heteromorpha; 2, Cyrtomium falcatum; 3, Pleopeltis pustulata; 4, Phebodium aureum, probably, but may be areolatum.—E. Yonkins. Broughtonia sunguinea.—J. Spalding. A good ordinary form of Vanda tricolor, not the Dalkelth variety.—E. C. C. D. 1, Tulipa Orphanidea; 2, T. Celsiana; 3, Cardamine pratensis var. parviflorus.

RATING CUCUMER-HOUSES: T. Skvens. You are

RATING CUCUMBER-HOUSES: T. Slevens. You are certainly liable to be rated for the Cucumber-houses, See the case reported in our issue for July 14, last

SEEDS: D. Elkins. The seeds of the Papaw (Carica papaya), or, perhaps, of a Passion-flower.

CATALOGUES RECEIVED.

JAMES VEITCII & SONS, 544, King's Road, Chelsea— New and Rare Plants, Bedding Plants, &c. WOOD & INGRAM, Huntingdom—Select List of Bedding Plants, Florists' Flowers, &c. J. CHEAL & SONS, Lowfield, Crawley, Sussex — Choice Florists' Flowers, Herbaceous Plants, &c. W. &.A. K., JOINSTON, 5, White Hart Street, Pater-noster Square, E.C.—Geographical, Educational, and other Publications.

and other Publications.

COMMUNICATIONS RECEIVEO. — Greenwood Pim. — T. M. — W. G. S.—J. T. R. —W. B.—J. G. B.—H. G.—J. R. J.—W. H. D.—E. Verreat.—G. B.—C. F. S.—T. S.—H. R. P. —J. L. T.—H. W.—R. I. L.—Professor Celakovsky.—C. G. A.—P. B.—E. V. E.—J. B. E.—P. J. L.—J. T. E. C. W. D.—J. G. & CO.—T. M. & CO.—W. H. F.—J. V.—Th. Fischer.—L.—A. van den H.—D. 7.

Markets.

COVENT GARDEN, May 1.

[The subjoined reports are furnished to us regularly every Thursday, by the kindness of several of the principal sales-men, who revise the list weekly, and are responsible for the quotations. It must be remembered that these quotations are averages for the week preceding the date of our report. The prices fluctuate, not only from day to day, but often several times in one day, and therefore the prices quoted as averages for the past week must not be taken as indicating the price at any particular date, still less can they be taken as guides to the price in the coming week. Eo.]

TRADE still dull, but clearances made at low rates. James Webber, Wholesale Apple Market.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

Aralia Sieboldi, doz.10 -04-6
Arbor-vitic (golden), 6 -018-0
Arbor-vitic (golden), 6 -018-0
Arbor-vitic (golden), 6 -018-0
— (common), dozen 6 -02-0
— Common, dozen 6 -02-0
— Extra size, each 2 -0 -10
— Extra size, each 5 -0 10
— Cyperus, per dozen 6 -018-0
— Forman term. doz... 30 -05-0
— Viridis, per doz... 2 0 -019
— Per dozen ... 0 -018-0
Evergrens, io var.,
per doze ... 6 -02-0
Ferns, in war., dozen 4 -018-0
Forms, in war., dozen 4 -018-0
Forms PLANTS IN POTS .- AVERAGE WHOLESALE PRICES

CUT FLOWERS .- AVERAGE WHOLESALE PRICES.

GE WHOLESALE PRICES.

2. 1. 2. 1. 2. 2. 3. 6 o Mignonette, 12 buo. 3 o - 6 o Mignonette, 12 buo. 3 o - 6 o Mignonette, 12 buo. 3 o - 9 o Narcissus (Paper, white), 12 buo. 6 o Periorises, 12 buo. 6 o Primoses, 12 buo. 0 o - 1 o Primula, double, buo. 1 o - 1 o Primula, double, 10 o - 1 o Primula, double, 12 buo. 1 o - 1 o Primula, 10 CUT FLOWERS.—AVERS.
Abutiloo, 12 bunches 20 ~ 4 o
Anemooss, 13 bito... 20 ~ 4 o
Anemooss, 13 bito... 20 ~ 4 o
Anemooss, 12 bito... 20 ~ 4 o
Anemooss, 12 bito... 20 ~ 4 o
Camalicos, 12 bito... 10 ~ 1 o
Camalicos, 12 bito... 10 ~ 1 o
Camalicos, 12 bito... 10 ~ 1 o
Distroicité double, 12 c o
Single, 12 bito... 10 ~ 3 o
Fucharis, per doz... 4 p ~ 0
Fucharis, per doz

12 sprays o 6- 1 o Lapageria, white, 12 blooms 3 o- 6 o blooms ... 3 0- 6 0 — red, 12 blooms.. 1 0- 3 0 Lilac, white Fr., bun. 6 0- 8 0 Lily-of-Valley, 12 spr. 0 9- 1 6 FRUIT.-AVERAGE WHOLESALE PRICES.

Apples, ½-siev . . 3 o - 50

Apples, ½-siev . . 3 o - 50

Cobs, per roo lb...r25 o -550

Grapes (new), hb. 30 - 70

Enmons, per case. . 10 o - 14

Peaches, per dat. . . 15

O-80

Peaches, per dat. . . 15

O-80

Peaches, per dat. . . 15

O-80

dozen 2 o- .. Garlic, per lb. .. o 6- ..

POTATOS.—Kent Magnums, Sor. to 100s. per ton; do., Regeals, Sos. to 100s.; Champions, 50s. to 65s.—New: Jersey, 4d lb.

SEEDS.

SEEDS.

LONDON: April 30.—There was but little business transacted on the seed market to-day, the attendance being poor. Stocks generally are reduced to a moderate compass, consequently values for all descriptions show no material change. Trefoils are somewhat dearer, owing to a speculative inquiry caused by the late frosts. Spring Tares realise fortner terms. There is no noteworthy change in Hemp, Canary, or Millet seeds. There is a better trade for blue boiling Peas. Feeding Linseed cheaper. John Shaw & Sont, Seed Merchants, 37, Mark Lane, London, E.C.

CORN.

At Mark Lane on Monday English red Wheat sustained an advance of 1s. per quarter, while of foreign descriptions the improvement of 6d, per quarter noticed on Friday last was upheld. Flour, on the week, was in some cases the turn in sellers' favour. On the spot grinding Barley was quiet, but steady. Beans fully supported late value, and Peas, from searcity, were 1s. higher. Maize was also scarce, at a like rise for the week, the market to-day tending further to harden. Common grades of Russian Oats were 3d. lower since Monday sennight, prime qualities remaining firm, and a fairly good business was done.—On Wednesday, with less inquiry, prices for Wheat were not so well sustained. There was very little doig in flour, and prices were unaltered. Burley on the spot was quiet. Beans and Peas remained at previous value. Maize was inactive without appreciable change in price. Oats, though dull, were not quoted worse on the spot.—Average prices of correfer week ending April 26:—Wheat, 37s. 2d., Barley, 31s. 2d., Oats, 20s. For the corresponding period last year:—Wheat, 42s.; Barley, 32s. 9d.; Oats, 21s. 1od.

CATTLE.

At Copenhagen Fields on Monday a very depressed trade was experienced in every department. Prices of both beasts and sheep gave way, the former 2d., and in some instances 4d., and the latter very generally 4d. per 8 lb. Lambs sold very badly, at 4d. to 6d. decline, and calves were lower. Quotations:—Beasts, 3s. 1od. to 4s. 1od. and 5s. to 5s. 6d.; calves, 6s. to 6s. 8d.; sheep, 4s. 8d. to 5s., and 5s. 4d. to 5s. 8d.; lambs, 7s. 6d. to 8s.—Thursday's trade was dull. Beasts sold slowly at Monday's prices; sheep and lambs were dull; calves were not in demand, and pigs sold on former terms.

HAY.

Tuesday's Whitechapel Market report states that trade was very dull and supplies large. A very heavy tone prevailed for Clover, 95. to 1081; inferior, 601, to 751; prime second out, 901. to 1051. Best meadow hay, 801. to 905; inferior, 402. to 651, and straw, 281. to 375, per load.—On Thursday there was a large supply, and trade was dull at previous rates.—Cumberland Market quotations:
—Superior meadow hay, 841. to 921; inferior, 631. to 721; superior Clover, 1055, to 1141; inferior, 701. to 881.; and straw, 321. to 371. per load.

POTATOS.

The average prices during the week have been:—Magnum Bonum, 60s. to 85s. per ton; Flukes, 80s. to 90s.; Reds, 70s. to 80s.; Snowflakes, 50s. to 55s.; 90s.; Reds, 70s. to 80s.; Snowflakes, 50s. to 55s.; Flourball, 40s. to 45s. 7 Champions, 45s. to 70s.; Roses, 45s. to 70s. per ton.—The imports into London last week were 250 boxes from Cadiz, 220 sacks 80 baskets St. Nazaire, 27 bags Rouen, 3 Ostend, and 65 casks 4860 packages from Malta.

Government Stock.—Consols closed on Monday at 101½ to 101½ for delivery, and 101½ to 101½ for 101½ for baccount. Tucsday's prices were 101½ for 101½ for both delivery and account. The closing figures of Wednesday were, for delivery, 101½ to 101½ for 1010 for the account. The Exchange was closed on Thursday, as customary on May 1.



DEANE & CO.'S GARDEN FURNITURE GARDEN ROLLERS. Single Cylinder. 16-in., 325.; 18-in., 355.; 20-in., 455. 22-in., 525.; 24-in., 632.; 26-in., 802. Double Cylinder. 18-in., 525.; 20-in., 607. 22-in., 707. 24-i0., 805.; 26-in., 905.; 28-in., 1156.



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325.64.









SUBURBAN SEAT, 5 ft. 175.; 6 ft., 195. Strong and easy, the cheapest seat made GARDEN SEATS IN GREAT VARIETY

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This VARNISH is an excellent substitute for oil paint on all outdoor work, while it is fully two-thrids cheaper. It was introduced upwards of thirty years ago by a boat of unprincipled intractors, in fully attested by its constantly increasing sale. It may be applied by an ordinary labourer, requires no mixing or thirming, and its used cold. It is used in the grounds at Windsor Castle, Kew Gardens, and at the seats of many hundreds of the Hobility and Gentry, from whom the most accordance of the control of the

Customers against the various cheap Varnishes oow so much advertised. H. & S. S varnish has been a ratice of common use on most of the large estates in the kingdom for in a most of their years. The common is the properties of the large estates in the kingdom for in a mod the numerous Testimonials they receive, stamp it as a truly genuine article. Every cask is legibly marked with their name and Register Trade Mark as above, without which none is genuine. Large illustrated CATALOGUE of Fencing Hurdles, Field and Entrance Gates, &c., sent free on application to HILL AND SMITH, Berierley Hill Ironwerks, Staffordshire: 105, Queen Victoria Street, Lasgeon, E. C.; and 196, St. Viocent Street, Clasgoon.

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DENNIS PARK IRONWORKS, STOURBRIDGE.



The Best and Quickest

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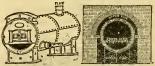
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Established 1841.

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SATURDAY, MAY 10, 1884.

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Fleral, at 11.A.M., in the Conservatory: SCIENTIFICAL 11.P. M.
GENERAL MEETING for the Electron of Fellows, &c., at 37.M., in the Conservatory on TUESDAY NEXT, May 13.
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The ANNUAL EXHIBITION of the Society will be beld
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TUESDAYS, THURSDAYS and SATURDAYS.

SPECIAL OFFER of ORCHIDS, SPECTAL OFFER No.

with GORDON, New Phot and Bubl Importer, Nurseries,
Amyand Park Road, Twickenham, Middlesex, City Office:
10. Callum Street, Loadon, E.C. See Advertisements
Gardener! Chronicle of March 29, April 5, 12, and 19.

FOR SALE, TWO Fine Specimen ARAUCARIA EXCELSA, 14 feet bigb; also ONE ALSOPHILA EXCELSA, 0.3 feet seem, 9 feet through. For particolars as to price, &c., apply to cm. W. J. WATSON, Town Hall Buildings, Newcastle.

PELARGONIUMS, in 40-pots, showing bloom, best Show and Decorative varieties, 9s. per dozen, 6ss. per 10a.
GARAWAY AND CO., Durdham Down, Clifton, Bristol.

GRAPE VINES.—A fine stock in leading varieties, Placing and Fruiting Canes. Apply to FRANCIS R. KINGHORN, Nurseryman, Richmond.

Asparagus.—Asparagus.

ROBERT AND GEORGE NEAL, having a Surplus Stock of the above, beg to offer ten thousand, 1-yr. old, for £5, cath; also 3 and 4-yr. old. Samples and price 1-yr. old, for £5, casb; also 3 among on application.

The Nurseries, Wandsworth Common, S.W.

A SPARAGUS. — This delicious vegetable does not require half the expense often incurred. For directions see Illustrated Seed List, free. Strong roots, 21. 6d, per 100; extra strong, ditto, 2-yr. old, 32. 6d, per 100. RICHARO SMITH AND CO., Worcester.

A SPARAGUS, Giant, 2 and 3-yr. For price apply to JAMES BIRD, Nurseries, Downham.

SALES BY AUCTION.

Choice Collection of Nepenthes.

The Collection of Nepenthes.

The Collection of Nepenthes.

STEVENS has received income to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Gniden, W.C., on WEDNESDAY, May 14, at half-bis entire COLLECTION of NEPENTHES, all in grant health and strong plants. Amongst others will be found Nanquinea (Veitch's best variety), hybrida macmilat, licial-carata, Raflesiana, Veitchi (magnificent plant), Northiana, Sec. railocalesiana, Veitchi (magnificent plant), Northiana, On view morning of Sale, and Catalogues had.

On view morning of Sale, and Catalogues had.

Wednesday NEXT.—(Sale No. 6565.)

IMPORTATIONS of DONTOGLOSSUMS, CATTLEVAS,
See, received direct.

M.R. J. C. STEVENS will include in his
Strest Covent Carlot, at his great Rooms, 38, King
Strest Covent Carlot, at his great Rooms, 38, King
Strest Covent Carlot, and Strest Rooms, 38, King
Strest Covent Carlot, at his great Rooms, 38, King
Strest Covent Carlot, at his great Rooms, 38, King
Strest Covent Carlot, and Landson, 38, King
Strest Covent Carlot, and Landson, 38, King
ANTHURIUM, ODONTOGLOSSUMS, SCHOMEURGK1AS, BRASSAVOLAS, &c., from Carrocas, and a quantity of
fine imported change of Disk of RABUELDORA,
On view morning of Date, and Catalogues had.

On view morning of Sale, and Catalogues had.

Wodnesday Next.—(Sale No. 65.6).

MIPORTED and SSTABLISHED ORCHIDS, &c.

MIPORTED and SSTABLISHED ORCHIDS, &c.

MIR J. C. STEVENS will SFLL by

Covent Garden, W.C., on WEDNESDAY NEXT, May 14,
at half-past 12 o'Clock precisely, importations of Lefis anceys
avrs, Cattleya, Critina, Evodendrum Parkmonsinama. E. vitelinum mjns, Schomburgkia tibicina, &c., from Messrs. F.

Horsman & Co.; the choice collection of NEFENTHES

tormed by A. E. Katcliff, Esq.; several small collections of Established armibioteses and other Bulks. Co.

21,000 Action of the Cape,
On view morning of Sale, and Catalogues had.

Sale No. 6657.

MOST VALUABLE IMPORTATIONS.

M. J. C. STEVENS will SELL by AUCGraden, W.C. on THURSDAY, May 15, at Inlifeast 19
Click precisely, by order of Mr. F. Sander, a beautiful NEW
DENDROGHUM, D. CRUENTUM, Inc. DENDROBUM, D. GRUENTUM, flowers pare white, with crumson centre, shape of infundibalum, and most free flowering; the importation is in submidd condrison. ODONTOGLOS-the importation is in submidd condrison. ODONTOGLOS-the importation is in submidd condrison. ODONTOGLOS-the importation of the importation of the importation of MEXICAN ORCHIDS, many CATTLEYAS, a NEW MASDEVALILIA, Octnotlosam Alexandre, fifty fine varieties of Alexandre in flower, several fine Hybrids; also a fine importation of VANDA CATHCART! and VANDA chosma saavis, Piciones, Dendrobium nobile, Sophronites grandifica, Oncidium concolor, &c.

The Sale will also include a HVERID, now in bud, the like we have not seen before; the specimen has it bulbs, came how evith Alexandre, and will be in flower on day of sale, It promises to be not only quite distinct, but of great beauty. On view morning of Sale, and Catalogues had.

The Down House Collection of Orchids

The Down House Collection of Orchids

MR. J. C. STEVEN'S has been favoured

SELL by AUCTION, at his Great Rooms, 38, King Street,
Covent Garden, W.C., on TUESDAY, WEDNESDAY,
And THURSDAY, May 20, 21, and 22, at half-past
12 o'Clock precisely each day, his well-known COLLECTION of ORCHIDS. The plants have been selected with
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purpose
J. Stonei Dendrobium Lowii , nobile giganteum , Wardi, old var.

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superbiens Coradinei
respans garatum
respans garatum
respans garatum
respans garatum
respans garatum
respans garatum
Ruckerianum
Oncidium macranthum, fine
plant and var.
Vanda coratum
respans garatum
respan Odontoglossum vexillarium, fine var., &c.
On view mornings of Sale, and Catalogues had. Important Sale of Established Orchids,

Important Sale of Established Orchids,
on account of Expiry of Lease.

M.R. J. C. STEVENS will SELL by AUCGarden, W. G., STEVENS will SELL by AUCGARDEN WIL

Bluntii "Walkerianum
On view mornings of Sale, and Catalogues had.

Dispact from Brazil.

On view morning of sole, and Cataolyces mad.

I Luesday Next.—Direct from Brazil.

M. ESSRS. PROTHEROE AND MORRIS

will include in their SALE at the Central Auction

Rooms, 67 and 68, Cheepsude, E.C., on TUESDAY NEXT, ia

preces of CATTLEYA HARRISON, and over 500 ON
CIDIUMS CRISPUM, FORRESI, and FLEXUOSUM.

On view morning of Sale, and Catalogues had.

Tuesday Next.

IMPORTED CATTLEYATRIANÆ, DONTOGLOSSUM CRISPUM (Alexandruc) in fine condition and the best type; MASDEVALLIA CHIMÆRA, M. SHUTTLE-WORTHII, M. TROCHILUS, M. HARRYANA, ON-CUIUN, S. C., established.

MESSRS, PROTHEROE AND MORRIS Sale Rooms, by and 68, Cheapide, E. C., on TUESIVA NACA, AND CONTROL OF THE COLOR OF THE CO

On view morning of Sale, and Catalogues had.

Friday Next. — Valuable Importations.

MESSRS. PROTHEROF. AND MORRIS

have received instructions from the New Plant and
Bulb Company, of Colchester, to SELL by AUCTION, at
their Central Sale Rooms, 67 and 68, Cheapside, E. C., on
FRIDAY NEXT, May 16, at ball-past 10 of Clock precisely, and
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and importance of the Colchester, to Sell by AUCTION, at
and importance of the Colchester, to Sell by AUCTION, at
and importance of the Colchester, to Sell by AUCTION, at
AUCTION, and AUKEA (9); a large importation of CYPRIPEDIUM SCHLIMI in uousually fine masses; two new
Australian ORCHIDS—Dipodium ponetatum, blue; and
DDONTOGLOSSUM SCEPTRUM, collected near Medellin,
On view morning of Sale. Catalogues had of the Anctioneers,
67 and 68, Cheapside, E. C. (Telephone No. 1800)

New Glass Erections.

By order of Mr. C. Cansley, who is relicquishing this part of his business.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION. M ESSKS. PROTHEROE AND MORKIS

for and 68, Cheapside, E.C., on FRIDAY, May 23, two newly
ecceted (Span Roof and Learn-to GREEPHOUSES, several
patent portable PLANT PRESERVERS, and 6 ONE-LIGHT
BOXES; the whole glazed on Causley's patent system with

21-02. glass.

May now be viewed at Mr. Causley's Works, No. 13/2,

Downs Park Road, Shacklewell, five minutes walk from Dalston

Junction and Hackney Downs Stations. Catalogues may be

had of the Auctioneers, 67 and 68, Cheapside, E.C.

Flowering Orchids,
MESSRS. PROTHEROE AND MORRIS
Deg to announce that their next Special SALE of
ORCHIDS in Flower will be beld on TUESDAY, May 97,
and they will be glad to receive an EARLY INTIMATION
from gentlemen desirons of including lots.

67 and 68, Chiespate, E.C.

Royal Exotle Nursery, Onslow Crescent, South KENSINGTON, S.W. By order of the Mortgagees.—Important to Decorative Florists and Others.—Occupying an unrvalled position in the heart of a neighbourhood which of recent years has rapidly become the favoritie residential district at the West-End of London.

become the favonite residential district at the West-End of London.

MESSRS. PROTHEROE AND MORRIS

are favoured with instructions to SELL by AUCTION, on the Premises, on WEDNESDAY, May 28, at 12 eClock operating the control of the

Onslow Crescent, South Kensington, S.W.

Onslow Crescent, South Kensington, S.W.

In the High Court of Justice, Chancery Division.—In ref The General Horticultural Company (John Wills), Limited.

MESSRS. PROTHEROE AND MORRIS

will SELL by AUCTION, on the Premises, the Royal Exotic Nursery, Onslow Crescent, S.W., a minnte's walk from the Company of the Company

and Valuers, 67 and 00, Cheapand,
Providence Nurseries, Boston Spa, near Tadcaster,
One Mile from Thorparch Station, oo the

Providence Nurseries, Boston Spa, near Tadeaster, VORKSHIRE. One Mile from Thorparch Station, oo the Church Fenton and Harrogate Kailway.
PRELIMINARY ANNOUNCEMENT.

IMMENSE SALE of NURSERY STOCK, comprising valuable Exhibition Plants, Stove, Greenhouse, Bedding-valuated exhibition Plants, Stove, Greenhouse, Bedding-out and other Plants, Ferns, &c.

M.R. S. ANDERSON begs to announce that to SELL by AUCTION, on the above Premises, the whole of his valuable NURSERY STOCK, on WEDNESDAY, May advertisements and bills.

Auctioneer's Offices, James Street, Harrogate.

Hammersmith.

IMPORTANT ANNUAL SALE of well-grown BEDDING and GREENHOUSE PLANTS, &c.

and GREENHOUSE PLANTS, &c.
TO OWNERS OF ORNAMENTAL GROUNDS, GENTLEMEN,
FLORISTS, NURSERVMEN, and UTHERS.

M.R. J. A. SMITTH has received instructions from Mr. F. Herridge to SELL by AUCTION, on
the Planten, and the Product of the ProHammeranith, W. (near the Producty, and within three
minutes' walk of three Railway Stanons), on TUESDAY, May
co, at z for z o'Clock punctually, about 30,000 PLANTS
(varions), well selected for Pedding, Greenhouse, and Window
Diplay, viewed the Saturday prior and moming of Sale.

(Valuus), we seek the Saturday prior and morning of Sale. Display, the viewed the Saturday prior and morning of Sale. Catalygues may be had so the Premises; and at Mr. J. A. SMITH'S Auction, Land and Estate Offices, 48, King Street East, East of the Broadway, Hammersmith, W.

FOR SALE, a genuine SEED BUSINESS, situated in a good Market Town. In consequence of the death of the Proprietor. Principally Agricultural, Established upwards of sixty years. Long Lease, Incoming from Argon to Agronauticultura apply to Messix. PROTHEROE AND MORRIS, 67 and 68, Cheapside, London, E.C.

By Order of the Trustees, who are now desirous of

By Order of the Trustees, who are now desirous of SBORN'S NURSERY, Sunbury, Middle-Gest of Building Frontage; all the Intercent of State o

To Small Capitalists, &c.

ON SALE, the UNEXPIRED LEASE and STOCK of a ROSE NURSERY, sitented in one of the best districts in the North of England—7 Acres of Land, four Greenhouses, and other very useful buildings. Good, old-catablished business. Price 4.200. Great bargain, Apply X. 85, Gardners' Chronicle Office, 41, Wellington Street, Strand. W.C.

To Horticultural Builders.

THE LIVERPOOL HORTICULTURAL
CO. (JOHN COWAN), Limited, owing to the great increase
in the other beanches of their business, are prepared to LEASE
appliances for carrying on the Horticultural Building and Heasing Business. Machinery and Stock to be taken at valuation.
This affords an excellent opportunity for any one who may be
inclined to embark in this business. Full particulars on application to the MANAGER, The Vineyard, Garaton, Liverpool.

TO NURSERYMEN, FLORISTS, &c.—
Several very comfortable 6-roomed HOUSES, nearly
ready for occupation, at £18 per annum, or for Sale, with the
option of any extra quantity of Ground, Well adapted for
Glass and the Trade. Less than ten minutes from Hampton
Station. Can be had on Lesse or Furchasted by easy instalments,
Apply to Mr. £ EMBLETON, Sanfolk Houses, New Hampton.

To Seedsmen, Florists, Frulterers, &c.

TO Seedsmen, Florists, Frulterers, &c.

TO BE LET, a First-class FRUITERER'S,

FLORISTS, and SEED SHOP, io one of the principal
thoroughlares in the towo of Northampton, clase to the Maiete
Square and Corn Exchange. Also about 5 acres of GADENING LAND, in good condition, well stocked with Vegetables
and Frmit Trees. Land can be let with or without shop.
For further particulars apply to Messrs. EARBER AND
SONS, House and Estate Agents, College Steet, Northampton,

Sourse, House and Estate Agents, Conege street, Normampton.

To FLORISTS, FRUIT GROWERS, and OTHERS,
TO LET, Large CONSERVATORIES,
Heated with all the Newest Appliances, recently erected,
capable of Growing a large amount of Fruit and Flowers. The
wall cropped with Peach, Netzurine, Aprico Trees, and Vines.
All to be let at a very moderate rental. Address to
E. A., Fyrey's Advertising Offices, rist, Blobom, Londoo, E.C.

To Fruit Growers, Market Gardeners and Seedsmen.

TO BE LET, on LEASE, 80 ACRES of
excellent GARDEN LAND, with suitable Buildings, at
Peterborough, situated almost adjoining the Great Northen
and Middaed Kallwey Intoins.

Gardener and Seedsman 5 acres are placeted with Asparana
and Fruit Trees, now in full bearing, which could be let

separately.
The Buildings are all new, and consist of an excellent Residence, Two Cottages, Large Onion and Seed Sheds, with Stables, Cart Sheds, &c.
Apply to Messis. ENGLISH BROTHERS, Peterborough or Wisbech.

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MILLINGTON AND CO., ENGLISH and FOREIGN SHEET and PLATE GLASS, WHITE LEAD, MILLED LEAD, OILS, and COLOUR MERCHANTS, 43, COmmercial Street, E.

PROTHEROE AND MORRIS, HORTICUL-TURAL, MARKET GARGEN and ESTATE AUCTIONERS and VALUERS, 8, New Broad Street, E.C., and at Leytoostone, E Monthly Horticultural Register had on application.

R. AND A. MORRISON, The Nurseries.

AND A. MORKISON, THE INTESTIES,
MARECHAL NIEL ROSES, in 5-inch pots, on own roots
est with bud, at 60s, per 100.
ACUILLEGIA GLANDULOSA, 2-yr., at 10s, per 100.
TROPEOLUM SPECIOSUM, established in 60s, at 20st
POLYGALA CHAMÆBUXUS, 29s, per 100.

[Per 105
CHAMÆROPS EXCELSA, in 485, 9 inches, at 30s. per 100.

New White Ipomea.

IPOMEA THOMSONIANA (Masters).

TRELAND AND THOMSON have the pleasure to announce that they are now sending out this splendid novelty. In thabit it is almost the same as the well-known Ipomea Horsfallen, but produces in great about the same as the well-known in the same and the well-known in the same as the well-known in the same and the splendid novel in the same as the well-known in the same and th

New Carpet Bedding Plant.

HERNIARIA GLABRA AUREA — Bright
Golden-yellow, quite as hardy as the well-known Herniaria glabra. Certraidy one of the best plants for the purpos
yet introduced. 12. 6d. each., 15f. per dozen.

THOMAS SIBBALD, Nursenyman, Bishop Auckland.

CARPET BEDDING PLANTS, Well established from stores.

ALTERNANTHERA magnifica, amabilis, paronychioides major, paronychioides major aurea (new), versicolor, spathulata, ameena, ameena spectabile, 75. per 100, 651.

AGE REACH STATE AND A STATE AN

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PFT 500.
PYRETHRUM, or Goldeo Feather, 2s. 6ss. per 100.
PYRETHRUM, or Goldeo Feather, 2s. 6ss. per 100.
PYRETHRUM, or Goldeo Feather, 2s. 6ss. per 100.
LIST of Carpet and Geoeral Bedding Plants gratis.
W. MILES, West Brighton Nurseries, Hove, Brighton.

First-class Certificate awarded to H. G. Smyth. A beautiful rose-coloured Solf, very highly scented, of great size, very full, and of perfect shape; does not burst the caivx, a very free bloomer and vigorous grower, and perfectly hardy. See Garburer Chronick, August 4, 1828, p. pge 146. Price 2s. each or 31. 64, per pair. Cash with order.

H. G. SMYTH, 21, Oldsmith Street, Drury Lane, W. C.

FOR SALE, a fine CROTON PICTUM, also C. VARIEGATUM, measuring about 4½ feet in diameter. Apply to Mr. F. MORELAND, The Tower, Belvedere Park, Kent.

STRONG BEDDING GERANIUMS, Vestu-vits, Madame Thibaut, Crystal Palace Gem, and others, strong stuff, 8r, per 100. Choice named Zonals, best, 16r. per 100, in pots. FUCHSIAS, splendid plants, in 48°s for market, 205, per 100.—W. JACKSOW, Blakdown, gear Kidderminster.

28x, per 100.—W. JACKSON, Blakedown, ear Kidderminster.

TWO GRAND NEW SHOW OF BEDDING
PANSIES.—Hooper's New White (Mrs. John Laing),
he finest White Show or Bedding Pansy in cultivation, having,
fine, free, dwarf, branchung habit and profuse bloomer; Mrs.
Lewalpy, a rich, deep Golden-yellow Self. The above has
been awarded Six First-class Certificates by the Royal Horticultural, and the Royal Bottain Societies of London, the Crystal
Palace and Manchester. 11. each, 97, per dozen. Seeds from
facet tamated Sulfation application.

H. HOOPER, Vine Nursery, Widcombe Hill, Eath.

CABBAGE PLANTS (attumn sown, very fine).—Early Rainbam, Vanack, Cattell's Reliance, Shilling's Queen, Early York, Enfeld, Nonpareil, Battersea, Daniel's Defanece, Sugar Point, Sant Joho's Day, Wheeler's Innernal, and Robinson's Drambead, 3r, per 100 of 1200, £6 for 600 pollants, cash with order. Sample for free for 64—Apply, ED. LEICH, Wordam Farm, Dundfold, Goldalming, Surrey, X.B. Lower quotations for larger quantities.

FIFTY THOUSAND DAHLIAS,
Double and Single, CATALOGUES on application.
KELWAY AND SON, Langport, Somerset.

AWN S.—The best Seeds for producing Grasses it is possible to obtain (as testified from various localities), 12, per pound; 202, per bushel of 2t lb. Particulars as to soil should be given with order.

Historated LIST of FARM SEEDS free.
201, value of Seeds carriage paid to any Railway Station 12 England or Wales.

RICHARD SMITH AND CO., Worcester.

VERBENAS.—Strong, healthy, well-rooted Cuttings, perfectly free from disease, of White, Parple, Scarlet, and Pink, 6. per too, got, per tooo; too in 1a distinct and splendid varieties, First Frize Flowers, for 8s. CALCEOLARIA, GOLDEN GEM.—Strong, sturdy, autum-struck plants, 5s. per 100, 40s. per 1000. FULL STRESS HES, AGER ATUMS, &c., very cheap Terms cash.

The Exors, late It Blandford, The Dorset Nurseries, Flaudford.

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MENYANTHUS TRIFOLIATA
One of the most beautiful Aquatics.
By Parcels Post, 32. 6d. per dozen pieces. Apply to T. R. CHEADLE, Post Office, Stoke-on-Trent.

JOHN LAING & CO.

Collections of 1 dozen named, our Se Laing's Begonia

Collections of 1 acore named, our selection 3: Singles, A 24', B 36', C 30', D 24', E 18', F 12', Doubles, P 30', R 32', S 48', T 42', Collections unnamed, our Selection :— Singles, G 24', H 18', J 18', K 12', L 9', D 40', D 24', D 50, D 24', B 28', D 24', D 24

ANTHONY WATERER

Invites attention to the following LIST of well-grown and properly rooted NURSERY

HOLLIES, Common Greeu, 3, 4, 5, 6, 7, 8 to
"laurifolia, dutto. [to feet high.
"Hodgio's, 3, 4, 5 to 8 feet.
"mystifolia, ditto.
"Saw-leaved, ditto.

Tubers.

many thousands.

Såw-leaved, ditto.

Scottica, 3 to 8 feets.

Vellow-berried, altachrense and others.

Variegated, of sorts, 3,4,5,6,8 to 10 ft.

Waterer's, splendid plants, 3,4,5 and 6 feet, 8 to 15 feet io circumtereace.

Golden Queen, 3,4,5,6,7,8 to 10 feet, hundreds of beautiful specimens.

Perry's Weeping Holly, on straight stems, with beautiful heads, ten to fifteen years' growth, hundreds.

aew Golden Weeping, a large number of very beautiful plants.

plants. BOX, Green and Variegated, 3, 4, 5, 6, to 7 feet, many

thousands.
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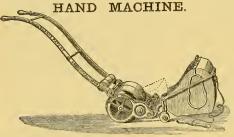
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JOHN FORBES begs to state that his Annual PLANT CATALOGUE for 1884 is now ready, and will be posted on application. It consists of seventy pages of closely printed matter, representing probably the largest and best collections of Pansies, Phlores, Pentstemons, Antirnhums, Edphiniums, Fotentials, Minulus, Caruntions, Pyrethmons, Delphiniums, Fotentials, Minulus, Caruntions, Pyrethmons, Delphiniums, Fotentials, Minulus, Caruntions, Pyrethmons, Pentstemons, P

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THE

Gardeners' Chronicle.

SATURDAY, MAY 10, 1884.

MAGNA CHARTA ISLAND.

THOSE who love to visit historic scenes I may very easily reach Runnymede, and hear the birds sing and the trout splash close to the spot where King John's signature acknowledged the equal rights of Englishmen in the eye of the law. The nearest station is at Wraysbury, as the word is pronounced and sometimes spelt, though the older orthography is Wyrardisbury. Datchet is the next station, and then Windsor, and therefore the visitor will expect to find himself on the Thames-side among meadows and rows of pollard Willows Wraysbury is a pleasing, retired village, such as Mr. Jesse describes it in his Favourite Haunts, and King John's Hunting Lodge, a quaint old house of many gables, where Mr. Jesse found the two largest Walnuts in England, stands at the Datchet end of the village. The house is several centuries later than John's reign, and now stands among rich and smiling, well-drained meadows within sight of several ornamental new houses across the river and within an hour's ride from London; but this was formerly a capital position for a hunting lodge, the heron and bittern abounding among the reeds, as did the hare and stag on the drier ground above the river. Even now it lies in a good district for outdoor amusements, including angling, which Charles 11., Isaac Walton, and Sir H. Wotton enjoyed on this spot. The Walnuts measure 24 feet in girth at 3 feet from the ground, according to Mr. Jesse.

The well watered soil here carries timber of the largest size, and among the big trees I noticed four other great Walnuts on Magna Charta Island, a magnificent Plane, carrying its girth to a great height, on the lawn of Ankerwyke House; several Huntingdon Willows, one reported 20 feet in girth; and the famous Ankerwyke Yew, in the grounds of the same residence, measuring 29 feet at 4 feet, and bearing still, at the age of many centuries, a grand head spreading 78 feet, and containing many branches and a vast quantity of green foliage.

Ankerwyke House stands hard by Magna Charta Island, a little lower down the stream of the river, and rejoicing in the same soft landscape, and in the same richly enamelled meadows of the Thames. Close to it, with the Yew and several great Cedars of Lebanon at hand, are the remaining ruins of a Benedictine priory of the time of Henry II., a building which supplied materials for the erection of the present house in 1805. A member of the Harcourt family owns this property as well as the island and its ornamental cottage. It is interesting to observe constantly in England the intertwining and strong union of new and old. We may call the owner and late occupier "old" in regard to his connection with this spot, and we may call his tenant, the present occupier, "new." The his tenant, the present occupier, "new." same conjunction by which antiquity finds the material support and substance which it needs from those whose pursuits are commercial, or professional, may be constantly met with in various parts of England; and the remark does not lose its force, however high, socially, the

position of the tenant may be. The younger brother of the present occupier of Ankerwyke House, whose studies were, doubtless, most un-Cambridge, very kindly landed me on Magna Charta Island and then put me over the river where I stept out of the boat in the meadow opposite called Runnymede.

It is not certain whether John signed the Charter here in Berkshire or there on the island, a narrow slip of land on the Buckinghamshire side of the river. Probably the act took place here; the stone on which the parchment was laid, and which now bears an appropriate inscription, is there in an ante-room of the pretty cottage. The lady-tenant of this cottage most kindly showed me, on our landing as I have noticed, the stone and the arms of the confederate barons, the legends on the walls, and the four commemorative Walnut trees, on the lawn before her drawing-room windows. The trees have been described somewhere as dating from the time of the signing. They may be regarded rather as memorials of the incident, but of later date. The island contains from 2 to 3 acres. The stone is octagonal, 3 feet in diameter, and Dearing the Macra "Be it remembered that on this island, 25 June, "Be it remembered Magna signed Magna feet in diameter, and bearing the inscription, 1215, John, King of England, signed Magna Charta, and in the year 1834 this building was erected in commemoration of that great and important event by George Simon Harcourt, Esq., Lord of this Manor and the High Sheriff of this county."

After following the river about half a mile, a road on the left leads to the Long Walk and to Windsor, 4 miles distant. H. E.



DENDROBIUM CRUENTUM, n. sp,*

THE flower is very like that of Dendrobium tridentiforme, Lindl., but it is larger, and nearly reaches the size of a good flower of Bulbophyllum macranthum. The linear acuminate petals, the falcate narrow side laciniæ of the lip, and the very long callus, with its gyrose, brain-like anterior part, are quite distinct from the oblong acute petals, the broad falcate side lacinize, and the very small median callus of the old Dendrobium tridentiserum. Sepals triangular acuminate, the lateral ones with a very well developed, nearly rectangular chio. Petals licear acuminate. Lip most deeply trifid, side lacinic falcate, erect central lacinia ovate apiculate, with a nearly microscopically muriculate border. The large oblong tumid callus has an acterior gyrose surface which may be compared to the surface of the brain; the upper part is not gyrose, but nearly smooth, with five blunt elevations, including the outer ones. The column is broader at the base than at the tridentate top, and has the whole base a little concave, though there is no distinct abrupt cavern-like hollow there, as in numerous Deodrobia. What I see of the colour is that the flower is whitish, with a strongly marked cinnabar callus, and three similar cinnabar ascending lines with two interposed small teeth from the base to the middle of the column. As to this it is positive. Now I see also on the wet flowers some mauve lines on the anther and petals, but I am in doubt as to whether these lines are not products of some chemical change, as I can see no vestiges in the flowers which were not softened. Neither is there any vestige of this in the coloured sketch prepared by the excellent discoverer, Mr. Förstermann, who painted also the lateral falcate lacinize of the lip cinnabar, which looks very pretty.

The plant has slender, furrowed, nearly terete stems, and short oblong bilobed leaves. The young sheaths are like those of the Nigro-hirsuta group, and all the peduocles appear one-flowered. Singularly enough, all the vegetative organs are much smaller than in Dr. Liodley's typical specimen, although the flower is so much greater.

1 have imported plants and dried flowers before me, all kindly seat by Mr. F. Sander. H. G. Rohb. f.

DENDROBIUM PURPUREUM (Roxb., nov. var.? (vel nov. sp.)) MoseLevi, Hemsl.

The singular Dendrobium purpureum is a native of the Moluccas, and was cultivated in the Calcutta Botanic Garden at the beginning of the present century, and more recently at Buiteozorg, in Java; and Miquel has figured it in his Choix de Plantes, but I have found oo evidence of its ever having been cultivated in this country. It differs so markedly from all the other described species of its numerous genus that it is easily recognised. The bright purple flowers are about three-quarters of an inch long, cylindrical in shape, and arranged in dense, spherical, sessile clusters, which are produced from the nodes of the old leafless, spiodle-shaped stems, of many years' duration, and usually 3 or 4 feet long. At Kew there is a plant, bearing one cluster of flowers, that is so like D. purpureum in all its characters, that in the absence of specimens for comparison 1 place it as a variety, though it may prove to be sufficiently distinct to be entitled to rank as an independent species. It differs in having white flowers tipped with green, and apparently less pointed tips to the parts of the perianth. The bracts, too, are ovate-acuminate, not cordate, as described for purpureum. Further, the oldest and largest stem of the Kew plant is only 9 inches long, yet this may be due to the conditions under which the plant exists

Dendrobium Moseleyi is one of a number of Orchids collected by Mr. Moseley during the voyage of the Challenger in the Aru Islands, Amboina, &c., which he sent to Kew about ten years ago. It is a botanical curiosity, though not an ornamental plant. W. B. H.

OLEARIA MACRODONTA, n. sp. = OLEARIA DEN-TATA, Hook. fil., Handb. New Zeal, Flora, p. 126, non Moench.

We have got into confusion about Olearia dentata, There is a well-known Australian plant of this name, which is excellently figured as Olearia dentata in the Botanical Magazine, tab. 5973, It is the old Aster dentatus of Andrews, Bot. Rep., tab. 61, and is described under the name of Olearia dentata in De Candolle's Prodromus and Bentham's Flora Australiensis. Not remembering this, Sir J. D. Hooker, in his Handbook of the New Zealand Flora, gave the name Olearia deotata to a New Zealand species, which in his original Flora of New Zealand had been called Eurybia dentata. This latter Messrs. Veitch have lately introduced. When they sent a plant to Mr. Gumbleton, the latter immediately pointed out that it did not agree with the Botanical Magazine figure. He is perfectly correct, for the New Zealand is a totally different species from the Australian one, and so must have a new name. The New Zealand plant has very conspicuous acute teeth to plant has very conspicuous acute teem to its leaves, and much smaller and less showy capitula than in the rightful claimant to the name dentata, in which the expanded heads, with their crimson-tipped, white ligules, measure an inch in diameter. J. G. Baker.

EXACUM AFFINE.

This is one of the many interesting plants originally introduced from the little known island of Socotra by Professor Bayley Balfour. It is a pretty, warm greenhouse plant with square stems, stalked, opposite, ovate, 3-ribbed leaves, which forbid us thinking it a Solanum, as the bluish-lilac flowers with their yellow stameos might otherwise lead us to infer. flowers are not only grateful to the eye, but they have an agreeable perfume. Our engraving was taken from a specimen sent us by Haage & Schmidt, of Erfurt. These gentlemen received seeds from Dr. Schweinfurth, who visited the island subsequently to Professor Balfour.

The illustration (fig. 116) obviates the necessity ot entering into any further detail as to this summer and autumn floweriog perennial. A description, accompanied by a coloured plate, is given in the Gartenflora, t. 1108.

ROYAL INSTITUTE OF PAINTERS IN WATER-COLOURS.

THE Exhibition of Water-colour Drawings in Piccadilly is a large and most excellent one. remember no exhibition of drawings in London of equal importance. The examination of the large number of pictures-nearly 1100-in the three rooms is almost too wearying for a single visit. The catalogue is itself a sketchy work of art, for it contains eighty-nine reduced copies of original sketches made by the artists whose works are exhibited.

Many of the pictures in this exhibition will have a strong interest for readers of the Gardeners' Chronicle, for not only are there many landscapes of the first class, but there is a considerable number of superb and highly-finished garden views, and excellent pic-tures of flowers and fruit.

Out of more than a thousand paintings we can of course only point out a few which have special horticultural interest. The first picture we stop at is No. 8, "My Lady's Garden," G. S. Elgood, a true masterpiece of skilful and truthful drawing and painting of a beautiful subject. 50, "Mountain Mist," A. Weedon, is a superb drawing of mountains, cattle, water, and mist, with water trickling like a thread of silver down the mountain side. 55, "Poppies," Charles Robertson; these, although described Poppies of our gardens, Papaver somoiferum; this, although a little hard and formal, is a good picture. 70, "Autumo Leaves," W. H. Thompson, is a pleasant departure from some of the two familiar little pots of flowers. Mr. Thompson has treated masterly manner a few branchlets of Beech, with the leaves showing the autumnal tints. 91. "Dawn," 100, "Evening," H. G. Hine. These are two really superb pictures; the first represents a view taken from undulating hill-tops or downs, the valleys being full of the mists of morning; the picture is most powerful and truthful, and altogether excellent. The second picture, of a still summer evening, is equally truthful and good. 98, "Abutilon Pelargoniums," is a pretty little picture by Mrs. Wm. Duffield. 143, "Mushrooms," J. Bligh, is a very truthful and well-executed picture of a basket of freshly-gathered pasture Mushrooms, very different from the plants of our markets. 162, "Polyanthus and Forget-me-Not," Miss Ada Bell, is a most beautiful little work; in every way good in grouping, drawing, and colour. 195, "Ox-eye Daisies," Miss M. Chase, is also very good indeed; so is 219, "Pelargoniums," Mrs. Wm. Duffield. 258, "Gen-tian and Narcissi," Miss R. Wallis, is bard, and shows a weaker appreciation of the beauties of flowers than the works of the other artists we have just mentioned. 259, "A Tumbler of Violets," Miss Ada Bell; we do not like this, the colour is rich, and the painting bold, but the flowers have no form. "An International Congress," B. W. Spiers, is one of the most remarkable pieces of realistic painting we have seen. It is a group of books of all sorts, little antiquities, prints, coins, &c., but so real that one cannot help imagining, on looking at the picture, that the things themselves (and not painted copies) are before one. The book covers with the gold ornaments are especially illusive. 307. "Marornaments are especially illusive. 307. "Marguerites and other Flowers," Mrs. W. Duffield, is in the excellent manner of this well-known artist; the picture contains Roses, Pansies, Violas, &c., as well as Marguerites. 386. "Odontoglossums and Azaleas," by the same lady, is a large and beautifully painted picture of these admired flowers. 408, "Bough of Plums," John Sherrin. Every one who visits exhibitions is familiar with these superbly painted bunches of Plums by Mr. Sherrin, they are life itself-if not better than life; but we confess ourselves a little weary of the iteration of the subjects selected by Mr. Sherrio. 483, "Single Dahlias," Miss M. Chase, we like less than other works we have seen by this skilful artist. 512, "Daffodils and Violets," Miss A. Bell, falls far short of the "Polyanthus and Forget-me-Not" same artist; we esteem this and several other works by Miss Bell, as far too careless and rough, the dash, and gorgeous and harmonious colour does not compensate for the absence of all care and study in the drawsate for the absence of all care and study in the drawing. 558, "Baskets of Flowers," Mrs. Wm. Duffield, is a well executed picture of Roses and Violas; and 664, "Lilies," by the same artist, is a grand group of varieties of Lilium speciosum. 756, "The Terrace Walk," Geo. S. Elgood, is one of a series of beautiful garden pictures in this exhibition;

Dendrobium cruentum, n. sp. — Aff. D. trideutifero, Lindl.: floribus ringentibus telas valida; spealis triangulis, mento obtusangulo; tepalis incaribus accuninatis, labello profunde trido.

Trido de la companio del companio de la companio del companio de la companio del companio del companio del companio de la companio de la companio del co

we have never seen anything better, each is a perfect and powerful work of art. 835, "May," W. J. Muckley, is an admirable picture of Hawthorn blossoms; if any one has ever painted Hawthorn blooms better than Mr. Muckley, it was the late Mr. Hunt, a superb example of whose work in representing these blossoms may be seen in the South Kensington Museum. 866, "Chrysanthemums," Miss F. W. Currey, is exceedingly good and spirited. 939, "The Fish Pond," Geo. S. Elgood, is another

PRIMULA SIEBOLDI.

Ir may well be hoped that the exhibition and introduction into commerce of the new and beautiful additions to this section of hardy Primroses which Nr. Geggie, of Bury, has raised, will serve to draw attention to them more fully than has hitherto been the case, and to render them common and popular denizens of greenhouses and frames in the spring months. It should be one of the strongest

blooming. For that reason it is always found desirable to break up the clumps annually and repot them.

Naturally the creeping crowns or rhizomes strive to force themselves to the outside, and as a result in outdoor chumps the centres become bare, whilst in pots the best crowns get pressed or jammed against the insides, and, of course, are forced into deformed growth. This tendency is specially seen when clumps have remained over a second season of growth in the same pot. To obviate this, not only should the crowns be not too thickly placed, but should also be annually removed. Practically, if the best crowns be selected when the clump is broken up, there is little to choose as to future method of potting. Single strong crowns make nice useful plants in small pots, three or four make a nice clump in a 48-sized pot, and from eight to nine crowns in an 8-inch pot give good results. Smaller stocks of crowns may be planted more densely, or will do well if put thickly into a large shallow pan, in which they find ample space to ruo, and produce fine blooming crowns for the following year.

The work of breaking up and repotting may be best done in the late autumn, after the foliage has decayed. Then the roots literally rest if existing under natural conditions, till about March, but if they be placed in a greenhouse or frame will begin to push in February. No very considerable quantity of new roots is made till the plants are well leaved, and then from that time till the last leaf is gone they are active, needing water and proper attention. As with many Primroses so with this, thrips is a source of some trouble, but still is not much so, as the plants, in good soil, and in a cool position during the summer; will leaf so abundantly. Next to thrips, perhaps, these Primulas have no greater enemy than drip from trees or other overhanging matter; hence, when stood out doors in the summer it is better to plunge the pots in ashes or cocoa-fibre refuse, yet otherwise exposed to the sun than beneath trees, where drip, especially in the autumn, will prove most detrimental. During the growing season a little liquid manure is beneficial, but because of its tendency to produce robust leafage and strong crowns, so also is it well that the plants should have the benefit of some ripeniug

In houses where there is heat, or when kept far from the glass, these Primulas show a natural tendency to develope long flowers and leaf-stalks. For that reason it is not well to force them, but the ordinary warmth of a greenhouse in the spring will always induce fairly early blooming, whilst if others be kept in a cool frame the blooming season may be greatly prolonged. Practically a cool frame with the pots plunged in ashes and near to the glass is the very place in which to keep the plants for the winter till needed in the greenhouse from time to time. In repotting the crowns it is undesirable to bury them deeper than just below the surface, whilst the use of some sharp sand on the surface soil will help to keep that open and loose. Shallow pans or pots are just as favourable for these Primulas as ordinary ones, perhaps more so, as they seldom root deeply. The best drainage is that composed of rubbly turf and pieces of decayed manure, as such material tends to entice the roots downward, and thus the longer maintain the foliage in vigour.

Of kinds we now have so many that are beautiful that enumeration of a few would be but invidious. Most of Mr. Geggie's new kinds differ from older ones, and some may be said to show improvement. The colours run chiefly in mauve, pale purple, and reddish tints, in great variety, whilst the fairly equal distribution of smooth edged and laciniated flowers offers forms for various tastes. So charming, and indeed elegant, are all these feather-edged varieties that almost alone with Chinese Primulas do they seem the more acceptable the more they display that feature. Amidst all the merits of these flowers, however, they possess the defect of want of stiffness in the flower-stems, and from which fault it would be well if raisers could purge them. The result is that in most cases the flowers are of a drooping habit, as though too modest to boldly look about them. This feature is more seen when only one or two trusses emanate from a plant than when a number form a good head of bloom. It is not an absolute fault-some may even think it the reverse, but if it be a fault, it seems to be the only one they



FIG. 116.—EXACUM AFFINE: FLOWERS BLUE. (SEE P. 604.)

of the magnificent garden views that we have before adverted to, from the brush of this accomplished and painstaking artist. We have no space for any notice of the ounerous excellent figure subjects, and, if possible, more admirable landscapes. There are beautiful landscape works by Messrs, Alfred Parsons, Whymper, Wimperis, Thomas Collier, Tulleylove, and other artists of repute.

OXALIS ARTICULATA.—This is one of a large group distinguished by their stout woody rootstock. The leaves are trifoliolate, the flowers pale lilac. Native of South Brazil and Patagonia. See Botanical Magazine, 1, 6748. recommendations of these Primulas that, whilst so apparently delicate and refined in habit and heautiful in bloom, they are yet so hardy and easy of cultivation. On the other hand, though hardy, they are not so well adapted for outdoor culture as may be desired; but then it is not as border plants, but rather as cool-house pot-plants, that they are so worthy of recommendation. Perhaps the well-known habit of growth and increase on the part of the roots tends in some degree to militate against their adaptability for border cultivation, as we know full well if left in clumps in pots or pans they soon become too crowded and cramped to admit of strong growth or free

CARNATIONS AT TRING PARK.

THESE favourite flowers are grown to perfection in Sir Nathaniel de Rothschild's garden at Tring Park, and there-thanks to the admirable system of cultivating them adopted by Mr. E. Hill, the gardenerthey are made to produce their flowers all the year round. The chief aim of course is to get a good supply in winter and early spring, and for this purpose the perpetual flowering kinds are grown, a fresh stock being raised every year, and all the old plants not wanted for cultivation thrown away. This has been found to be the only way of securing a good, clean, and neat-looking house of plants, every one of which may be depended upon to give its share of blossoms, Mr. Hill's plan is to strike the main crop in heat in the month of February, and also to propagate a small lot in the same manner later on for succession. As soon as rooted the plants are potted singly in small pots, and still kept in a gentle heat until they are well established. Later on they are hardened off and shifted into larger pots, and as the spring advances they are moved into the handy light span pits outside, where the earliest plants for next winter's flowering may now be seen together with an immense stock of all sizes to follow on.

The main batch is shifted into large 32-sized pots before the summer sets in, and they are kept in the cold pits until the second week in September, when they are removed to the roomy, light, span-roofed house which they are destined to make gay and useful throughout the whole of the winter and spring. This house is even yet very bright, and plentifully supplied with flowers borne on neat plants of uniform growth, all of which are clean and free from insects notwithstanding that they have been in bloom for so long a time. The perpetuals are followed by the Souvenir de la Malmaison, and half a houseful of these are well furnished with buds and ready to commence their duties. These, supplemented by the latest of the perpetuals, carry on the blooming period until the garden sorts are ready in the open air, and they in their turn keep up the supply until the earliest of the perpetuals come in. The compost used by Mr. Hill for potting his Carnations is turfy yellow loam three parts, and one part of leaf-mould and silver-sand.

The best sorts for winter flowering are naturally sought out where so much trouble is taken with their culture, and the sorts most in favour here are Hermine, Ville de Nancy, Countess of Seston, all whites; Empress of Germany, a very large white, with some-times a prettily tinged edge; The Queen, a snowwhite, with very clean cut, plain edge to the petals, and a perfect form, is, however, the favourite white. The scarlets are Lucifer, Sir George, Le Grenadier, and A. Alegatière. The blush Miss Jolliffe is also grown, but there is another, named Laura, of much the same tint, but having a fringed edge, which is perhaps even more beautiful. Lady Musgrave, a brilliant crimson; Irma, bright rose; Belle Rose, and Governor Wood are also very fine kinds. Valentia is one of the sweetest of Carnations, something like the old crimson Clove in colour, but with heautifully fringed edge and decided tree habit. The yellow grounds are Jean Sisley and Mazeppa, and Andalusia, a variety first introduced at Tring Park-it has lovely sulphur-yellow flowers tinted with pink, and is a great beauty. The old scarlet and white flake Attila still holds its own here; the favour which such old servants as it and the Gloire de Dijon Rose and many others find everywhere goes far to prove that our fancies for particular flowers are not swayed by caprice.

It will not be saying too much to say that there are hundreds of flower lovers in these isles who would gladly take up the culture of winter flowering Carnabut who, having experienced reverses when they have tried it on a small scale, have not persisted in it. Let them again make the attempt on Mr. Hill's plan, and better fortune will attend them if they earnestly carry it out.

TIMBER IN NEW ZEALAND, — It is stated in the Colonics and India that the export of timber, especially Kauri (Dammara australis), from the northern part of New Zealand is very large; numbers of vessels are constaulty employed carrying Kauri to the southern parts of the colony and to Australia, where there is a good market for it. In addition to this several large mills in Auckland are fully employed cutting up the logs into sizes fit for building purposes. cutting up the logs into sizes fit for building purposes. Between 400 and 500 hands are engaged in this work

SPRING FLOWERS AT EDGE

THE end of April in this year is a good time for making a record of plants which stand east wind and frosty nights well when in flower. From the begin-ning to the end of the month cold east winds pre-vailed with very few intervals, and on many nights there were from 8° to 10° of frost; but plants have not suffered nearly so much as they did in the middle of March last year. I find that Japanese plants are most injured by these cold parching winds, to which they seem quite unaccustomed in their own country. On the other hand, early-flowering American plants are, as a rule, unaffected, being liable in their own country to late returns of cold. European alpines seem to suffer from drought more than from cold, and some of them, especially the Dianthus tribe, get withered up. Cytisus Ardoini, which flowers freely for a month from the middle of April, is now very bright. It does not grow fast, and takes three or four years to make a good bush; planted in crevices it seems to hug the stones, from which it does not rise more than 6 inches. It is the dwarfest and prettiest of the yellow Broom tribe, and no weather seems to

Veronica saturæifolia is the earliest, and one of the best of its genus for the rockery, both foliage and flower being very neat. It roots as it spreads, and its pretty compact tufts of purplish-blue come out about the middle of April, and are never spoilt by frost. Phlox divaricata, or canadensis, is the bardiest of the early dwarf Phloxes. The lavender-coloured umbels of flowers are borne on stalks about 9 inches high, and continue for a long time. It requires one precaution, that it must be guarded from slugs, which it attracts as long as there is anything of it left, either leaf or flower. The perforated zinc guards are quite effectual in protecting it. Phlox amoena, in the style of verna, but earlier, and producing far more flowers, is not quite so hardy, but has not suffered much this year. The flower-stalks are not more than 4 or 5 inches high, and the flowers bright pink. Both these Phloxes should be frequently renewed, which is easily done by spreading the shoots and covering the base of them with fine soil, when fresh tufts will readily root. When rooted they do best transplanted to a raised store-bed of fine soil, from which they can be moved to their flowering places in October,

Campanula Wanneri is most successful this season; though the March frosts of last year killed nearly all, it is this year flowering freely and uninjured. biennial; the seed sown in June as soon as ripe comes up at once, and makes good plants for putting in crevices between large stones in warm spots of the rockery in October. They are liable to be killed by very hard winters, and a few should be kept in cold frames for flowering in pots in a cool greenhouse, for which they are well suited. It is very ornamental, its large pale purple flowers, like those of a Foxglove, resting against the stones which support them. These biennials are far too liable to be neglected, but require far less trouble than they are worth.

Ranunculus montanus I have been in the habit of treating too much as a dry soil plant, and it flowers in a stunted way on the higher ledges of a rockery; but some plants facing north-east, at the base of the stones, have been a mass of bright yellow flowers all through this April. The flowers, borne on single stalks, are of the size and colour of R. auricomus, but the plant is only about 4 inches high, and very desirable.

Hesperochiron californicus. I regret to observe that this lovely little plant, which I had from Ware, seems to have disappeared from his catalogue. It does not always establish itself, and out of several planted I have only two specimens which have flowered where they now stand for three seasons. The best plant is in an exposed part of a raised peatbed. It has a sparse tuft of procumbent leaves, round the outside of which a ring of snow-white flowers, like wax, in size and shape reminding one of Stephanotis floribunda, made a wreath of about 6 inches in diameter. In size the plants have hardly increased in three years, and I know of no way of increasing them except by seed, which I have never been able to get. I wish some one in communication with California would help us in this.

Gentiana verna defies the cold, and is remarkably fine this year. I can only grow it as an imported plant, and after doing well for about three years the tufts deteriorate. It must have prepared soil, and

good drainage, and is better for being watered in dry weather. With these helps it does well either on the flat border or the rockery in fully exposed spots, plants of 4 inches square bearing from twenty to fifty flowers at a time. Hutchinsia alpina is perhaps the best of the dwarf Crucifers in April. The flowers are snow-white, and plants grow out of small crevices so as to form a compact tuft upon the stones. Seedlings come up round it, which take so little room that they seldom require moving. Silene maritima has just the same habit of growing from between the stones on the higher parts of the rockery, but it is on a much larger scale than the last. I like the single-flowered far better than the double, which generally is a straggling and untidy plant. It is so easily weeded, and the seedlings so convenient in their plenty for leaving in the right place, that I am never without it.

Androsace sarmentosa has done unusually well. is capricious about flowering, and even about living, turning brown and going off at all stages of growth without any apparent cause, but it is easily increased, and should be planted plentilully. Pockets under overhanging stones, backed by a bank, suit it best, with a southern aspect. It must not be drenched overhead, nor get dry at the root. I have a plant with more than twenty bunches of flowers open. few of the older flowers are discoloured by the sbarp frosts, but the plants do not suffer.

Tiarella cordifolia deserves to be commended for its hardiness, as it suffers neither from cold nor drought. The plants are remarkably well filled with buds this year, and they begin to open about April 20. I find it best to collect the straggling runners into compact bunches towards the end of autumn, and plant them

where they are to flower.

Mertensia virginica does not appear in gardens as often as it deserves. It is a plaot which when established may be left for several years without being moved or divided. The roots are so tough, and th crown so compact, that it is not easy to divide it successfully. Cuttings may be taken in very early spring, and it occasionally comes up from self-sown seed. A moderately retentive, but not hard soil, suits it best. Most of the plants supplied by nurseries are imported from America, and though they seem dry and dead when they arive, they generally recover.

The large Doronicum—which I always call after

Mr. Harpur-Crewe, the raiser—is far more hardy in flower than the better known D. cancasicum. I have it in flower all the year round, ten months in the open it in flower all the year round, ten months in the open air, and two in the greenhouse. By constantly cutting up and transplanting the flowering time is prolonged, and the number of flowers increased. No plant which I have supplies a greater profusion of cut flowers, or any which last longer in winter. It thrives in any soil or situation, and as it has now been in the market for ten years, it is surprising to find any herbaceous border without it.

Two of the prettiest alpine Primroses are the dwarf P. muretiana, with flowers of dark rich crimson, and a mealy-leaved Auricula, with a bunch of goldenyellow flowers the size and shape of the English Cowslip. I am told that this is the genuine and original P. Auricula.

Frimula intermedia, or ciliata, is also very flowers.

Primula intermedia, or ciliata, is also very flowery

and good. It is especially fine now on Messrs.

James Dickson & Soos rockery at Chester.

Rubus arcticus, and Anemone Pulsatilla, always

suffer with me from spring frosts—the former because

it expects perpetual day when it is time for it to

flower; but for the destruction of the flowers of the latter, which is a native of our bleak chalk downs, I can assign oo reason; but it was in full flower early in April, and, as usual, was turned brown by the late flowering again in July. All these plants, with the exceptions I have made, have flowered quite uninjured by the recent frosts. C. Wolley Dod, Llandudno,

Jured by the recent frosts. C. Welley Dod, Llandudne, April 30.

[We awail ourselves of the opportunity of publishing a view of the old Itall (see p. 613), seated in the midst of the rich collections which so often furnish valued notes for our columns. A description of the garden was given at p. 445 of our second volume for 1882, but the number and variety of plants grown is so large that a description written for one week would have to be superseded the next. The garden was the other than the second work of the superseded the next. The garden is one of those places which makes the ordinary visitor feel his ignorance somewhat unpleasantly. The Hall itself is a good substantial specimen of the seventeenth century style, and the illustration (p. 613) we are enabled to give has a special interest, in that it contains the portraits, easily recognisable, of Mr. Wolley Dod, and of the late much regretted Harpur Crewe, and that it was produced from a photograph taken by another great plant lover, Mr. A. O. Walker, of Colwyn Bay. ED.]

NOMENCLATURE OF NAR-

AT the Narcissus Congress of the Royal Horticultural Society, held on April I, 1884, the following resolution, proposed by H. J. Elwes, Esq., and seconded by J. G. Baker, Esq., was adopted, and a committee was appointed to revise the names now in use, in order to adapt them as far as possible thereto :-

Resolved-" That, in the opinion of this Conference, Resolved—"That, in the opinion of this Conference, uniformity of nomenclature is most desirable, and that garden varieties of Narcissi, whether known hybrids or natural seedlings, should be named or numbered in the manner adopted by florists, and not in the manner adopted by botanists."

The Revising Committee met on the morning of the following day, when the names of the flowers then present underwent revision and correction in the sense present underwent revision and correction in the sense of the resolution. Mr. Elwes presided. Mr. J. G. Baker kindly undertook to frame a table showing the botanical relationship between the several plants, while to Mr. T. Moore aod Mr. P. Barr was deputed the further task of filling in the names of other garden forms and monstrosities. The list here printed is the result of their joint labours; the first portion showing Mr. Baker's grouping of the botanical forms, and the second portion the garden varieties, arranged according to their botanical affinities.

THE CONGRESS CATALOGUE OF NARCISSI. SERIES I .- GENUINE SPECIES AND THEIR VARIETIES.

NOTE:—The names printed in the first left-hand column, in small capitals, represent the subgenera, those in the second, in italies, indicate the admitted species, the third column contains the subspecies, and the fourth the varieties as understood botanically. The contents of a fifth column (garden forms) and a sixth (monstrosities) will be printed at the end, our column not being wide enough to take them in their proper position.]

MAGNICORONATI.

I. CORBULARIA-I. Bulbocodium

conspicuus citrinus

Graelsii

monophyllus 11. AJAX— 2. Pseudo-Narcissus

Pseudo-Narcissus proper { the wild Daffodil of England abscissus (muticus) cambridge. cambricus lobularis

links between
PseudoNarcissus and Telamonius P. B. princeps [P. B.] major major maximus

obvallaris [P. B.] minor

pumilus minimus

bicolor

connecting link lorifolius between Pseudo-Narcissus and bicolor

moschatus albicaus [P. B.]

MEDIOCORONATI.

III. GANYMEDES—
3. calathinus
4. triandrus

pulchellus cernuus coucolor nutans

IV. QUELTIAincomparabilis
aurantius
albidus

apodanthus

6. odorus (calathinus, Hort.) lætus 7. juncifolius

rupicolus PARVICORONATI.

V. HERMIONE— 8. Jonquilla 9. Tazetta dubius intermedius

bifrons primulinus bicrenatus radiatus

pachybulbus

```
canariensis
mediterraneus
                  ganymedoides
polyanthos
ochroleucus
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papyraceus (unicolor, niveus) Luna

Panizzianus italicus chrysauthus Bertolonii

aureus 10. viridiflorus II. serotinus autumn flowerers elegans obsoletus

V1. EUNARCISSUS-12. poeticus

stellaris recurvus poetarum radiiflorus (angustifolius, Ait.)

verbaneusis VII. AURELIA—
13. Broussonetti

[Five of the preceding thirteen species are, practically beaking, out of court as garden plants.]

SERIES II .- HYBRIDS, KNOWN OR PRESUMED.

[NOTE. - Of these the first column of names represents what are regarded as primary types; those in the second are regarded as secondary types.]

r. Humei (Hume's hybrid): incomparabilis × Pseudo-Narcissus albidus

concolor
2. Backhouse's Backhouse's hybrid)
3. Maclai (Macleay's hybrid): Pseudo-Narcissus ×
Tazetta
Nelsoni

Bernardi [P. B.] Sabini

tridymus 4. Leedsii (Leeds' hybrid): montanus × Pseudo-Narcissus

cissus Vincenti 5. Barrii (Barr's hybrid) : poeticus × Pseudo-Narcissus 6. poeuliformi: == montanus (Salisbury's hybrid) :? papy-raceu × moschatus galanthifolius Dr. Masters

PARVICORONATI.

7. gracilis: juncifolius × Tazetta tenuior 8. Burbidgei (Burbidge's bybrid): superpocticus × Pseudo-Narcissus

9. bistorus : ? poeticus × Tazetta albus

[Nos. 3, 6, 7, 9 are old, the others recent] J. G. B.

GARDEN VARIETIES OF SPECIES (SERIES I.).

2. Pseudo-Narcissus— albus—Inteus—pallidus—Nelson—scoticus— serratus

serratus
sub-group: F. D, C. Godman—Nell Barry—
Stansfield—variformis—Wolley Dod

2a. nobilis of Redouté
2b. lobularis—
amplicorona
2c. pagir—

2c. major-

amplicorona

Beaconsfield—Backhouse's Queen—Captain
Nelson—Corporal Trim—Cleopatra—Chinese
Gordon—Eliza Turck—Evening Star—Green
Jack—Gertrude Jekyll—Gladstone—Golden
Prince—Her Majesty—Fludbras—Haveloon
John Nelson—i, Ghes Honger, Chambertain
Vincent—John Melson—i, Ghes pictor, Chambertain
Vincent—John Mayor—Mr. Engelheart—Mrs. H. J.
Elwes—Mrs. Gladstone—Mrs. Shirley Hibberd—Mrs. Nelson—masimus—M. J. Berkeley—Marie Louise—major luteus—major superbus—Morning Star (stellatus)—Peri—
propinquus — Prince George — President
Arthur—President Lincolm—spurius—spurius
coronatus—Sir Charles Dilke—Sir W. Harcourt—St. Bridgid—Shirley Hibberd—Sharnan Crawford — Seraph — Thomas Moore
(Mooreauus)—Thomas Spanswick—Townshend Boscawen—Tottenham Vellow.

Affred Parsons — Cardinal Haynald — brevifios (bicolor, Rot. Mag.)—Dean Herbert (primulius)—Duke of Edihuvgh—Duchers of Edihuvgh—Empress—George H. Barr—grandis (maximus) — Horsfeldii — Harrisquadis (maximus) — Horsfeldii — Harrisquadis (maximus) — Br. B. M. Camm—Jeannette—Mrs. J. B. M. Camm—Isanette—Mrs. J. B. M. Camm—Isanette—Mrs. J. B. M. Camp—Isanette—Mrs. J. B. M. Camp—Mrs. M. Foster—Sulphus—President Garfield—Prince of Wales—Peabody—Sir R. Peel—T. S. Dorrien-Smith—William Robinson. 2d. bicolor-

2e. lorifolius us—
A. F. Barrou — anceps— Emperor — Edith
Barber—J. W. H. Barr—Lady Dorothy—
Mrs. W. Goldring—Lord Derby—P. R. Barr
—rugilobus.

atus—
cernius pulcher — Mr. Cowan (Cowani)—
Cecilia de Graaf—Dr. Hogg—Duchess of
Connaught—Exquisite—F. W. Burbidge—
G. F. Loder—L'ady Grosvenor—Mr. Miher
(Milneri)—Mrs. F.W. Burbidge—Marchious
of Lorne—pallidus præcox—Rebecca Syme
—Sir Stafford Northcote—Sarah Tisdale—
William Goldring (longipetalus).

5. incomparabilisconcolor-

Dolor Autocrat (expansus)—Bella (minor)—Blucher—Chang—Edward Hart—Eclipse (graudiflorus)—Hector — Jenny Lind—Provost—Sunray (stellatus)—Sycorax—Wellington.

Leedsiidsii—
C. J. Backhouse—Figaro (expansus),—
Fairy (marginatus minor)—Gloria Muudi
—Glow (marginatus)—Mrs. A. F. Barron
—Suulight (stellatus)—Titau (grandiflorus)

sulphureus-

ohureus—
Astrea (aureo-tinctus)—Beauty—C. H.
Astrea (aureo-tinctus)—Gil Blas
(stellatus)—Hogarth—John Bull (expan-sus)—Johnny Sands—Magog (grandi-florus)—I, F. Meston—J, T. D. Llewelyn
—King of the Netherlands—Longshauks
—Mrs. Meston—Nabob—Queen Sophia
—Queen Mab (marginatus minor)—Sir
Christopher Wren,

albidus—
Aunie Badeu—Adonis—Albert Victor—
Bianca (expansus)—Bride—Cupid— (stel-latus) — Cynosure (albidus Leedsii) —
Fitzjames — Gog (grandiflorus)—Jaue Kolle—Lorenzo—Vesta. pallidus-

Princess Mary of Cambridge—Prince Teck—semipartitus,

Teck—semipartitus.
albus—
Consul Crawford — Charles Hooper —
Claribel—Dove—Dr. Gorman—Duke of
Buccleuch — Fair Helen (elongaus)—
formosus—G. F. Wilson—Harpur-Crewe
—H. C. Smith—James Batenan—Marmion functions, G. F. Wilson—Poiteau
Consultations, G. F. Wilson—Poiteau
Consultations of the Consultation of

giganteus-James Dickson (Sir Watkin).

Campanelli— trilobus — interjectus — rugulcosus—minor (pseudo-juncifolius) — heminalis. 8. Jonquilla-

major (large Jonquil)—medius (lesser Jonquil)
—minor (least Jonquil).

9. Tazette.

White with yellow cup: Bazelman major—
Florence Nightingale—General Wyndham—
gloriosus—Graud Monarque—Grand Primo
Citroonier—Grootworst—Her Majesty—
orientalis—Queen of the Netherlands—Sir
Walter Sout—Staten General.

Yellow with yellow cup: Apollo Bathurst—
Jaune Suprème—Lord Canning—Sir Isaac
Newton—Soleil d'Or—Sulphurine.

White with white or whitish cup: lacticolor—
Louis le Grand—Luna—Faper White—
praceox.

12. poeticu

March or April flowering varieties— ornatus—poetarum—radiflorus (angusti-folius)—ripodalis. [It is no unusual thing for these to throw two or some-times three flowers on a scape, but this peculiarity is not permanent.—P.B.] April or May flowering varieties— poeticus verus—recurvus—patellaris.

GARDEN VARIETIES OF HYBRIDS (SERIES II.).

GARDEN VARIETIES OF HYERIDS (SERIES II.).

I. Humei—nodding flowers with straight cup, nearly as long as the dog-cared "hoppy" perianth, tube to dog-cared "hoppy" perianth, tube common perianth, tube to dog-cared "hoppy" perianth, tube common perianth, tube to dog common perianth, and the concolor—Hume's Giant.

2. Backhousti—bold habit; flowers horizontal, with dissounce tassal tube, and long cup uenty counceting link with Ajax.

Cupid—Daisy—H. J. Elwes.

3. Macleai—sturdy habit, 1—2-flowered; flowers small, horizontal, with short tube, spreading perianth, and cylindrical cup.

major (sabini)—Parkinsoni.

34. Nelsoni—1-flowered; flowers horizontal, with short tube below the broad spreading perianth, the cup cylindrical, trarely expanded at aurantius — expansus — Margaret Jones—major—minor—pulchellus.

36. tridymus—near Nelsoni, but with somewhat more obconical tube, r—3, usually 2-flowered; flowers swring much in size from that of Macleai upwards.

A. Rawson—Duke of Albany—Duchess of Albany—Grand Duke of Hesse—Innocence—Princess Alice—S. A. de Graaf,

4. Leedsi-flowers borizontal or drooping with a long sender tube, spreading or dog-cared pallid perianth, and pale yellow cup varying from canary-yellow to whitsis generally dying off white; differing from incomparabilis in the paler hue of

generally dying off white; dittering from incomparabilis in the paler hue of its cup.

amabilis — Acis — Aglaia — Alexis — Albion—
Ariadine—Arsinōje (gloriosus minor)—Beatrice
—Ceres—Circe (gloriosus)—Cybele—Duches
of Westminster — elegans — Fanny Mason
(Vincenti gloriosus) — Favourite — Fides —
Flora Macdonald'—Flora—Gem—grandis—
Grand Duchess—Grand Duke—Hon, Mrs.
Barton—Horner—Ianthe—Io (stellatus)—Juno
(galanthiflorus major) — Katherine Spurrell—
Leda — Madge Matthew—Mrs, Langtry—
Mignonne—Mande—Minnie Hinme—Maria M.
de Graaf—Mrs, Barday — Madame Patti—
Oddity—Purity—Princess of Wales—Palmerston—Queen of England — superbus—Venus
(galanthiflorus minor),
5. Barrii—usually dwarf and slender in habit; flowers
horizontal, with long slender neck or tube,
and spreading segments twice or more
the length of the short expanded cup,
(See Burbidge's Narcissi, t. 22, as illustrating the main features of the group.)
Bullion—conspicuus—conspicuus minor—
Lass o' Gowrie—Golden Mary—major
—Model
sulbhureug.—

Lass o' — Model

Sulphureus—
Amy—Herbert von Bismarck—Milton—
Prince Bismarck.

Prince Essuardo albidus—
Ada — Beatrice Murray — Cinderella—
Eclipse — elegans — Gazelle — General Murray — Jewell — John Stevenson — Lucy — Mrs. Darwin — Mrs. Murray — Maurice Vilmorin — Miriam Barton — Piccio—Romeo—Sylvia—Vivian.

albus—

Eetsy—Climax—Diana—Dirk de Graat
—Exquisite—Golden Star—Heroine—
Jewess—Lilliput—Lady Gray—Sensation—Silver Star—William Ingram.
6. poculiformis—1—2-6 howered; flowers nodding, white,
with a long slender cylindrical tube, and
a straight-sided cup, about half as long
as the spreading, twisted, somewhat
"floppy" perianth.
7. gracilis—Rush-leaved, 1—3-flowered; flowers yellow,
horizontal, with long slender tubes,
spreading perianth, and shallow cup;
late flowering.

spreading perianth, and shailow cup; late flowering.

8. Burbidget—habit of poeticus; flowers horizontal, mostly white, with long slender tube, and usually with a shallow spreading cup, which is frequently stained on the rim more or less distinctly with orangered.

Arabella—Ariel (albidus)—Alice Barr—Agnes Heath —Beatrice Heseldine—Boz (Inteus)—Blanche—Conspicuus—Cowlip—Crown Princes—Crown Princess—Dandy (stellatus)—Edith Bell—Ellen Barr—Empress Eugeine—elegans—Ethel—Golden Gem—gracilis—Guinevere—Johanna—John Bam (grandiflorus)—I. Golden Read—Jenny Deans—Joe—Little Dirk—Lottle Simmons—Little John—Mary (expansus)—May — Marvel—Model—Ossian—Pearl—Primrose Star—Princess Louise—Robin Hood—Suphur Star—Thomas Moore Absolon (grandiflorus expansus)—Vanessa. Arabella—Ariel (albidus) —Alice Barr—Agnes

MONSTROSITIES.

2. Pseudo-Narcissus—
plenus—Telamonius plenus—lobularis plenus
—lobularis grandiplenus—nanus plenus [said
by Dr. Brown, of Hull, to have been raised
by him to the Conference; one bulb only, and sen
by him to the Conference; one bulb also
received amongs to huls of nanus front Lincoln
shire, by Mr. T. S. Ware; supposed to be the
only double Narcissus raised since the time of
Parkinson.—P. B.]—cernus plenus—cernus
bicinctus—capax plenus (eystetness), Queen
Ann's Double Sulphur Daffodil) [no person
has yet satisfactorily determined which is the
single form of this plant.—P. B.]

5. incomparabiliti—
urantius plenus (Butter—and Eurob—all)

arabilis—
aurantius plenus (Butter and Eggs)—albus
plenus aurantius (Eggs and Bacon, Orange
Phœnix)—albus plenus suphureus (Codlings
and Cream, Sulphur Phœnix) (the supposed
single form of this is semipartitus,—P. B.]

minor plenus (Queen Ann's Double Jonquil).

9. Tazetta— longuil).

romanus (double Roman)—nobilissimus.

12. poeticus plenus (Gardenia flowered).

It should perhaps be explained, in justice to the real workers in this field, that of the foregoing hybrids, No. 1, Hume's hybrid; No. 5, Barr's hybrid; and No. 8, Burbidge's hybrid, bear names which are merely complimentary, the individuals thus complimented having had nothing whatever to do with the raising of the plants. The merit which attaches to the several productions belongs almost wholly to the late Mr. Leeds, of Manchester, and the late Mr. Backhouse, of Weardale, and it is to the efforts of these gentlemen that we are indebted for so large and valuable an acces-sion to the forms of these beautiful flowers which are now available for the decoration of our spring gardens. The exceptions are very few indeed, consisting mainly of the varieties named Gertrude Jekyll and Dr. Masters, which were raised by the late Rev. J. G. Nelson, and some three or four forms due to the labours of M. Max Leichtlin, of whom we may probably yet hear more in this connection, as we believe that gentleman is still earnestly occupied in the good work, T. M.; P. B.

OAK BARK.

STRIPPING AND HARVESTING, - In the whole routine of forest work perhaps there is no other undertaking of more importance, or one that requires a greater amount of forethought and attention than the stripping and saving of bark; and as the season for such work is now rapidly approaching, a few remarks thereon may not be out of place. The advantages of early stripping are now so well known that any comment on this subject is unnecessary; suffice it to say that immediately the bark commences to "run" freely no time should be lost in making a start, and the work should be prosecuted with vigour and dispatch until completed.

The proper time to commence barking cannot,

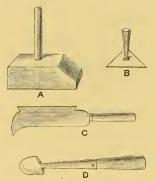


FIG. 117. -OAK-BARKING TOOLS

however, be fixed with any amount of certainty, much depending on the season, whether early or late, as well as district of the country in which the operation is to be performed. During ordinary seasons, and in most parts of England, bark stripping commences during the third week in April, and continues for about a month, or until such time as the trees are in full leafage, whereas in some parts of Scotland, especially the North, the operation is frequently nearly a month later.

No mistake can, however, arise as to the right time to start barking in any locality, as in all cases the period when the bud is just bursting into leaf will be found the proper time for falling to insure easy stripping and the best quality of bark. As the season of bark stripping is, therefore, of short duration, every preparation should be made beforehand-trees marked and numbered, tools in readiness, and, where necessary, extra hands engaged-so that an early start may be made, as by deferring the work beyond the time stated above there is not only a perceptible loss in weight but a considerable deterioration in the quality of the bark as well. Elaborate directions as to the arrangement of squads and tools to be used are unnecessary, as every district has its own peculiarities in this respect. The tools generally in use are heavy axes for felling, hand-bills and saws for pruning (c), peeling-irons or chisels (D) for removing the scrapers for removing moss (B), and light wooden mallets (A) for beating refractory bark, or such as cannot be removed by the peeling-irons alone. The above woodcut (fig. 117) gives illustrations of the tools used in barking. The above being a brief description of the preparatory arrangements for barking, with notes thereon, we will now proceed with the more practical portion of the work, viz., removing, stacking, and harvesting the bark.

Previous to felling the trees, a man or stout lad is sent before, who removes the bark from the root upwards for a distance of 2 or 3 feet, which not only prevents its being injured, but is a convenience for after-stripping as well. Where the stools are intended for reproduction, great care is necessary to avoid tearing or loosening the bark from the root.

After being thus prepared, the trees are felled in the usual manner, those under 6 inches diameter being cut with the axe; above that size it is found economy of both time and timber to fell with the cross-cnt saw. Following in the rear of the cutters should be a squad of men to clear the trunk and larger limbs of all branches down to an inch in diameter, leaving the limbs to be peeled as part of the tree.

Heavy timber and large branches are usually peeled where they fall, but it will be found convenient to have the smaller trees and branches carried out to some clear space adjoining the stacking-ground, and peeled while one end is supported by means of two forked sticks against each other. When the bark of small branches cannot readily be removed by the peeling-iron, a smooth, flat stone is brought into use, beside which the peeler sits, and with one hand holds the branch on the stone, moving it along from one end to the other, at the same time applying the mal-let with the other hand until the bark becomes loosened from the wood. Here it may be well to caution against a too frequent use of the mallet, which should never be brought into use when the bark can be otherwise removed from the wood, as all hammering or beating not only diminishes the quantity of tannin, but has a tendency to blacken the fleshy part of the bark, and cause rapid decay in a bad season. The body or trunk bark is removed in lengths of from 30 to 36 inches, and in pieces as large

nearly part of the bark, and cause raph decay in tabad season. The body or trunk bark is removed in lengths of from 30 to 36 inches, and in pieces as large as possible.

A dry, open and airy situation convenient to the work should be selected on which to harvest the bark, and rather than do so in a sheltered humid spot it should be carted to some distance off. The drying rack or ranges may be about 2 feet in height, drooping somewhat to one side, and formed of forked sticks driven firmly into the ground, while stout rods are placed transversely upon these. It should also hearranged not only to throw the rain off, but so that the ends of the bark may be facing the prevailing wind, thereby insuring a current of air through and beneath the mass. After being carried or carted to the drying ground, the small bark is spread out loosely on the stage to a depth of about 6 inches, and hatched or covered over with the larger pieces as a means of protection against rain. Each day's bark should be cleared up and put on the range the same evening, and oftener if found necessary during damp, showery weather, keeping the white or fleshy side downwards, and using the larger pieces for covers to ruo off the rain. During favourable weather the hark will be ready for stacking in a fortnight from the time it was placed on the stage, but should close, damp weather intervene, it may be found necessary to turn the bark occasionally, thus adding to the length of time required in harvesting. It should, however, be remembered that the less turning the bark receives after being placed on the stage the better will the quality be. Well seasoned bark has he feethy side of a creamy colour, whereas such as has been exposed to sun or rain is of a dull brown, wanting in tannin matter, and consequently deficient wanting in tannin matter, and consequently deficient in value.

wanting in tannin matter, and consequently dencemt in value.

As soon as the bark is thoroughly dry and ready for stacking, which may readily be told by its breaking freely across rather than bending or yielding to pressure, it should be secured in a shed, ricked, or delivered to the tanner. In stacking bark the ricks should not be made too broad—from 7 to 9 feet—but well hearted, so that the side pieces may have a good fall or declivity outwards to throw off the rain.

They may be made of any length, according to the quantity of bark on hand, and of a height proportionate to the width. The largest pieces of bark should be reserved for thatching the rick or stack, and afterwards covered over with a tarpaulin or waterproof-cloth of some kind. In some cases the bark is chipped previous to being sold, but as this necessitates having a large shed at command for storage, the system is not generally adopted. There are, however, several advantages accruing from this method, not the least of which is, that the bark may be chopped up as it is removed from the drying stands, thus saving the expense of stacking.

pense of stacking.

The average price of Oak bark in this district has been for some years from £4 to £4 tos. per ton of 20 cwt., delivered at the nearest railway station or port. A. D. Webster, Penrhyn Castle, North Wales.

Orchid Potes and Pleanings.

VANDA TERES IN EXCELSIS .- The sight of the grand lot of this plant which Mr. Hill, gardener to Sir Nathaniel de Rothschild, Bart., M.P., has at Tring Park, causes one to wonder how it is that so many fail to flower it; indeed, so long have some old specimens been located in gardens without ever putting forth a bloom, that those about them entertain with respect to them something like the popular belief about the American Agave, that they only bloom once in a hundred years, and patiently await the completion of the allotted time. In a sunny, warm, threequarter span, unshaded house at Tring Park, there are upwards of 200 plants each about 2 feet 6 inches in height, and each furnished with one or two very strong flower-spikes. The plants are grown on a novel plan; they are planted out along the front of the house over a hot-water tank, which, however, is very slightly heated. A good layer of charcoal is placed, and the plants planted in living sphagnum moss at about 4 inches from each other on the slab. That nothing could be more suitable for them the regular heavy crop of blooms they supply gives the best of evidence. They are kept moist all the year round. A quantity of plants of Vanda Hookeri, fastened to teak, and plunged in pots, are here growing, and sending out their flower-spikes equally well. Every year after flowering these are cut down, and lowered on the teak blocks, so as to keep them from running into ungainly growth. A good specimen of the terete-leaved Aerides vandarum, with its large snow-white flowers, is also in bloom in this house.

CATTLEYA REINECKIANA SUPERBISSIMA. Plants when well bloomed are so lovely that whenever a very rare and beautiful specimen is produced it is apt to be prououuced the most lovely thing ever seen. If such a sweeping assertion were ever admissible every excuse might be offered for making it when referring to the magnificent white form of C. Mossize section under the above name, which is now in flower in Sir Nathaniel de Rothschild's Orchid collection at Tring Park. It has thirteen lovely pure white flowers without a tinge of colour on them except on the labellum, and naturally arranged as they are without stick or tie the plant presents a most striking picture, and one which the beholder would not easily forget be he Orchid grower or not. The labellum, which is white and beautifully fringed, is marked high up in the tube with violet lines, and in the middle portion with orange, from which towards the edge run a few violet lines and dots. The charm of the whole flower is greatly enhanced by the distinct manner in which the different bright colours are placed on the labellum, they not running into each other as in the other forms of this plant which have flowered in this country; indeed, it seems more like a C. Wagueri with some of the C. Reineckiana marking, and may be regarded as between those The plant is of the stamp that every two varieties. Orchid collector strives for-a compact piece with almost as many leads as old bulbs-and thus it is enabled to give such a grand head of bloom, although growing in a 6-inch teak basket. It must be a great pleasure to Mr. Hill that he has been able to bring this rare and valuable plant up to the standard of perfection of the rest of his Cattleyas, for sometimes these wonderful white forms refuse to be comforted when taken from their native homes. The plant was one of an importation (necessarily small on account of their variety) of white Cattleya Mossiæs got over last summer by Messrs. F. Sander & Co. It is delightfully fragrant.

CALANTHE VERATRIFOLIA. — In the garden at Ardgowan, Inverkip, under the practical care of Mr. Lunt, are some extraordinary fine examples of this good old Orchid—the finest, indeed, I have ever seen. The plants have from twelve to fifteen spikes, each with upwards of eighty flowers. The foliage also, as is not always the case, is in perfect condition. Plants like these are invaluable at this season for cutting from. Alfred Outram.

ODONTOGLOSSUM CRISFUM VAR. ROTHSCHILD-IANUM,—Mr. Bradshaw, Baron F, de Rothschild's gardener at Waddesdon Manor, Aylesbury, has favoured us with a portion of a spike, only 6 inches

long, yet bearing eight of the most beautiful blossoms fancy can conceive.

The flowers are large, the margins of the sepals and petals undulated, the petals white tinted with violet, and unspotted; the sepals more heavily shaded with violet, with one large round or club-shaped blotch of purple-brown on each. The lip is also spotted, and the yellow blotch very pure in tone. It is one of Mr. Sacder's introductions, and certainly one of his most beautiful.

ONCIDIUM LANCEANUM.-Brought from Guiana in 1834 by John Henry Lance, Esq., and since that time frequently imported in quantity, it is a wonder that this, one of the most beautiful and fragrant of Oncidia, should not be more frequently seen in collections; but the fact is, that few Orchids have suffered so much from mismanagement as this has, and hence it is still an uncommon plant. The continued vigour, however, of plants in the hands of those who manage it well, proves that it is amenable to treatment, and the beauty of its large, branched spikes of flowers should ensure its careful consideration from all Orchid growers. O. Lanceanum succeeds best on a block or in a basket, with but little stuff about its roots, and suspended in a moist and shady, but yet light, part of an intermediate-house; indeed, during its growing season, it will do with the Phalænopsis or in the East India-house, but in any case it is necessary when the plant is in bloom, and for a month or so



FIG. 118.-ONCIDIUM LANCEANUM.

afterwards in the summer, to place it in a cool, shady house, so that its large, fleshy, entire leaves may harden and prepare the plant for the next growing season. While growing O. Lanceanum requires abundance of water, and at no period does it like to have water withheld long enough to allow it to shrivel. Its fragrant flowers, often produced two dozen on a spike, have the sepals and petals yellow freckled with reddistb-brown, and the lip in different plants varies from nearly white to dark rose.

DENDROBIUM CHRYSOTONUM.—I enclose you two spikes of flowers of this Orchid, cut from a plant in a 7-inch basket, which is bearing fourteen spikes. The cultivation of this Orchid is of the simplest character. Hang it up in a warm vinery to make its growth, and in the autumn expose it to full sunlight to ripen the same, and it will flower most freely. 7. R. M.

CATTLEYA MENDELII.—The bloom sent herewith is, I think, very distinct. It has what I should call a mauve lip, but the colour has become a little lighter, having been in bloom a fortnight. George Hardy, Pickering Lodge, Timperley. [A very fine variety, but whether sufficiently distinct to be worth a varietal name we should not like to say. Eb.]

Aërides Veitchii with ten branches, the largest spike I ever heard of; of course it has lost a little colour, having been in some time. The plant has one other spike with three branches; it is about 18 inches high,

with thirty-four leaves, and a small growth with ten leaves. The plant came to me amongst a lot of imported Aërides Fieldingii, and has leaves right down to the pot. George Hardy, Pickering Lodge, Timperley, [A very strong spike of a very good Orchid, ED.]

AUSTRALIAN ORCHIDS .- The first part of the second volume of Mr. Fitzgerald's Australian Orchids has reached us, comprising folio coloured plates with copious analyses of the following species :- Caladenia lobata, C. plicata, C. paniculata, C. macrostylis; Sarcochilus rubricentrum, Drakea elastica, D. glyptodon; Dendrobium superbiens, Prasophyllum australe brevilabre, P. alpinum; Bolboelatum, P. phyllum Elisæ, Microtis porrifolia, M. parviflora, Thelymitra rubra, T. luteo-cilium. Many of these were originally described in the Gardeners' Chronicle by Mr. Fitzgerald. The Caladenias are remarkable for their extraordinary flowers, rivalling in oddity of shape some of the Masdevallias, "The contrast between the delicate green and maroon of the flowers is not its only attraction, the curiously fringed purple labellum, constantly vibrating, catches the eye, when the beauty of the flower might otherwise be un-Although the flowers are so bizarre, the vegetative structure is of the simplest, consisting of a single tuber giving off at the summit a solitary leaf at the side, and a terminal flower-stalk with one, or a raceme of flowers. At the base of the new leaf a new tuber is formed apparently each year. and in one of Mr. Fitzgerald's drawings four such are seen in succession, strung on a thread-like rhizome, and each apparently representing the growth of one No root fibres are shown. The Sarcochilus vear. has more the general aspect of a Crucifer than of an Orchid. Drakæas have a vegetative structure, nearly as simple as that of the Caladenias; but, in addition to the tuber, there are some root fibres. The flowers are equally remarkable. The most showy of the series here figured is the Queensland Dendrobium superbiens, with its long overhanging, slender, manyflowered raceme of rosy-lilac flowers. Of this we are told that a plant in the possession of Captain Broomfield continued in flower for thirteen months, producing at least twelve spikes at a time, the individual flowers lasting three months. The Thelymitras are remarkable for their regular star-like flowers, the lip being in no wise different from the other petals in

Notes from Downside, Leatherhead .--Flowering plants in Mr. Lee's collection are particularly abundant now in such genera as Cattleya, Dendrobium, Masdevallia, Cypripedium, &c. In the two houses devoted to Masdevallias there were noted recently, either in bloom or showing a great many forward spikes, M. insignis, Backhouse's variety, a very brilliant and distinct form; M. Roezlii, Benedicti, M. grandiflora Veitchiana, and M. xanthoides, the Wagnerii of some. The very pretty Zygopetalum Sedeni was still in bloom; the predominating bright blue of the lip of this plant is very attractive, and is suggestive of Z. Mackayi. Another interesting and beautiful plant is found in Colax rufinus, a red lipped variety of C. jugosus, which is of a creamy-white; the plant bore three flowers on each scape. Amongst the large collection of Cypripediums we noticed the pretty white bybrid form of the New Grenadan species, C. Schlimii alba, so rarely met with; it was an especially elegant and pleasing plant, with delicately poised blooms on slender stalks, and foliage slightly drooping and dark green in colour; some of the other Cypripediums, carrying a few choice blooms, were C. roseum and C. niveum. The Odontoglossums were represented by O. cirrosum, several specimens of which were carrying its almost erect sprays of beautifully spotted blooms; O. Alexandræ, in variously marked forms; O. mulus, a somewhat rare variety; and O. fulvescens. A beautiful Epidendrum Pseudepidendrum, Marriott's variety, having bright flowers of a scarlet colour, was also a noticeable plant.

SIR TREVOR LAWRENCE'S ORCHIDS, BURFORD LODGE.—Some fine Dendrobiums are now to be seen in bloom here, notably such species as D. Brymerianum, bearing a few spikes on a specimen suspended in a basket close to the roof; the more rarely seen D. sulcatum; also D. thyrsiflorum Walkerianum, which was grand with ten spikes of its golden and white blossoms; D. devonianum, literally a mass of pink and purple flowers, springing from a great number of the nodes. The yellow and white D. cariniferum also makes a fine display; and on a D. Jamesianum

more than sixty blooms of the purest white and gold were expanded. The Masdevallia-house is a beautiful sight, with many varieties of M. Harryana and M. Veitchii now in flower, and giving promise of still great numbers on plants yet to open, and quite bristling with spikes of bloom, remarkably fine being several potsful of M. Chelsoni rosea. Of the Cattleya section we noticed C. purpurata, a grand plant, bearing seven enormous blooms; C. amethystina, C. Skinneri alba, this last having recently been in full bloom, but now past its best, its flowers, of the purest white, having been produced abundantly. The many varieties of Cattleya Mendelii found here, consisting as they do of some of the handsomest obtainable, are classed simply as C. Mendelii, so that the appalling polysyllabic descriptive names usually appended to them are not used by Mr. Baxter. Cattleya Mossiæ several beautifully marked kinds were in flower, and were conspicuous, amongst other points, for their unusually large size. A plant of C. Acklandii, which grows on a raft, and is undivided, just as it was received on being imported, was showing several of its charming, richly coloured blooms, as was also C. nobilior. The finest Aërides Schræderi was also C. nobilior. The finest Aërides Schræderi that probably exists in cultivation is just now pushing up its bloom spikes, and on A. Lobbii nine bunches of its deep rosy flowers have become visible, as were those of A. Veitchii, although not yet open. Aërides Larpentæ, the buff form, and the lovely A. virens, the rich combination of whose colour makes it such an attraction, were also in bloom. This latter species is one of the earliest flowering of all the Aerides. On A. crassifolium twenty-six blooms were about to

Bulbophyllum Deerii, with a beautiful yellow, s'ightly spotted labellum, that is so tremulous when stirred, had a few of its most singular blooms open on a small specimen banging up near the light; these were the first blooms borne by this plant. A striking group of Odontoglossum Roezlii had many of its strikingly attractive blossoms expanded, as had also the rare Schomburgia tibicinis, that is here flowering in its third season. Amongst the Odontoglossums in flower there were numbers of O. crispum, one having a distinct yellow lip; O. Coradinei, a variety of O. triumphans, that was spotted as usual, but in which the brown blotch was absent; O. Rossii majus, and O. coronarium. A variety of O. vexillarium was noticed, whose colour was as deep as that of the plant shown on the 22d ult, at South Keasington.

Several floriferous plants of Utricularia Endresi were flowering abundantly under Odontoglossum treatment, growing in baskets suspended near the roof. The Lycastes were represented by L. Lawrenciana, with the deep rosy throat, and L. lanipes, the greenish-white flower. On a plant of Cypripedium Stonei platytenium were to be seen the rare number of four of its strikingly marked and formed blooms, fully open; C. cordatum was carrying many flowers, and was a very large specimen. Several other varieties and species of Cypripediums were in bloom, amongst them being the handsome C. Swanianum, C. grande, a long-tailed, singular looking, branching habited species; and C. hirsutissimum. Of Lælias there were in bloom L. elegans, with eight blooms, and several of L. anceps, and some large plants of L. Barkeri.

The rare Ceelogyne ochracea, purple and white, was observed in bloom; also Oncidium nigratum, a green-ground flower, having a sprinkling of black spots. The Vandas form an important section of the flowering spring Orchids, and a considerable quantity of them were observed in various stages of flowering. V. Thompsoni had a wonderful quantity of strong bloom clusters, as had many others. The late spring flowering variety of Angraccum sequipedale carried five of its pure white starry blooms, and finely bloomed were Oncidium ampliatum, Phalenopsis Lowiana, and the rosypurple Saccolabium ampliaceum.

Mr. Baxter pointed out many other of his treasures, but the waning light forbade a longer stay, and the exigencies of "space" debar us from making use of our copious notes to a greater extent. M.

THE ORCHID MARKET.—At Stevens' Rooms, on Thursday, there was a brilliant display of Orchids in flower. The room was filled with the choicest of species and varieties, especially of Odontoglossum, Cattleya, and Masdevallia,

Çhe Kosery.

WHITE ROSES.—I was asked the other day by a lady in my neighbourhood to give her the names of some good white Roses, and it was not until I came to think over it that I found how very limited a class it is. I know, of course, that what she wanted were not summer Roses, but when one came to note the hybrid perpetuals and other continuous blooming Roses they were, indeed, rarve aves; and then the fact became patent to one's mind that we have not a really thoroughly good hybrid perpetual white Rose, and it is mainly of these I have now to give a few notes. We have not so pure a white amongst them all as Madame Plantier, hybrid China Bourbon, and a pure white II.P., of good size and form, would be indeed a "black swan," and withal a nugget, to any one who would be fortunate enough to obtaio it.

There is a class of white Roses amongst the hybrid perpetuals which are very floriferous, but which from their small size do not come within the category of exhibition Roses, but which are very serviceable as decorative Roses for the garden; they comprise subvarieties, as Virginale, Boule de Neige, Baronne de Maynard Mrs. Bellenden Ker, and Mademoiselle Baumann. Of these perhaps Mrs. B. Ker is the best, although Baronne de Maynard is the most free. Virginale is almost gone out of cultivation, as it was a poor grower; and Mademoiselle Baumann has that pink flush in it which most so-called white Roses bave, We must look for white Roses rather in the Baroness Rothschild race than in any other, in fact the two whitest hybrid perpetuals we have are to be found there, I mean White Baroness and Mabel Morrison whiter than Madlle. de Lyon, at least, so as I have seen it. A word or two about these three rival claimants may not be out of place, especially as I have before stated (on the authority of French growers) that it was a sport, not a seedling. I had the other day a good opportunity of comparing it and White Baroness (which is confessedly a sport) together in a visit I paid to Messrs. Paul & Son's nurseries at Cheshunt, Cheshunt, and am led to alter my opinion, for the flower is unquestionably of a different build to that of Baroness Rothschild; there are quite twice the number of petals, which are more folded together, somewhat in the way of Madame Vidot: this alone would be, I think, sufficient to constitute it a seedling and not a sport—for my experienc of sports is, that they never become more double than the normal flower. Then, although the wood has some resemblance to that of the Baroness, it is not nearly so thorny, while the foliage itself is distinct in the shape of the leaves-in the one case angular, and in the other pointed; it is also different in colour. I think, therefore, that unless evidence can be given to the contrary, that it must be considered, pace the authorities to whom I have alluded, to be a distinct variety; it is not, however, a pure white-there is a dash of flesh colour in it even when grown in pots, and I imagine it will be more evident out-of-doors. Mabel Morrison is white, but it is too thin a flower. White Baroness is the whitest of the three, and more full than Mabel Morrison, but not so full as Merveille de Lyon.

Madame Lacharme is another very excellent white Rose, very full and very free lowering. It is, like all light Roses, a fine-weather Rose, and hence some who have seen it in bad seasons concluded that it was of no use. It requires somewhat special treatment; the wood has to be thinned out, and air freely allowed; it will then, if the season be good, well reward any care bestowed upon it: it has also at times a flush of rose colour in it, but when pure it is a most lovely flower.

One cannot omit amongst white Roses the lovely Tea Niphetos, which figures in so many a bridal bouquet, and which, with the exception of Maréchal Niel, is oftener to be seen at Covent Garden than any Rose. It is, however, not a good grower, and will never make a decorative flower, being in fact more suited for the house than the open; its large and solid petals, occasionally somewhat sprawly, and its purity of colour, at times with a faint tinge of green in it, make it a very taking flower. And who would like to omit that exquisite gem, the white Moss, White Bath, lovely in the bud, but then hardly to be surpassed by anything for delicate beauty; as a full-blown Rose it is of no use. The newer variety, Blanche Moreau, is very pretty,

and a more vigorous grower. Then there is that charming little Paquerette, or Daisy Rose, and its sister, Aona Maria de Montrayel.

Amongst the Noisettes there are a few climbing Roses of great beauty, and which, when a wall can be given to them, are worthy a place in any garden, such as Aimée Vibert, its more rampant variety Lamarque, which requires a south wall; it has occasionally a yellowish tinge in the centre—at other times it is a pure white. Then Jeanne d'Arc is another pure white, blooming in clusters, but these are not everybody's Roses, and require warmth and shelter: what is wanted is a good stout and free-blooming perpetual.

I think this pretty well exhausts the white Roses There are some flowers which occcasionally approach very near to white, but are of a light flesh colour, such as Madame Hippolyte Jamain, Monsieur Noman, and Queen Victoria; but they cannot be truly considered to be white flowers, and it will be seen that it is a very limited list compared with that of the reds, common pinks, and yellows. Having mentioned the latter, I may mention that on my visit to Cheshunt I saw the veteran Maréchal Niel which has supplied so many fine baskets of bloom to the various shows, and a veteran surely he is, who has received more scars than ever did the soldier from whom he was named; but those which were inflicted for the sake of preserving him have proved ineffectual, and it is now doomed, the greater portion of it being cut away, and only one branch left, to see whether it would still continue to flower; but evidently its days are over. I mentioned that in a neighbouring parish there were some plants of these on a wall of a cottage. I passed by them to-day (May 3), and they were in full bloom, and many blooms had been already gathered from them, and, no doubt, unusually early, but then the season has altogether been an early one, As I have said, these trees must be nearly as old as those at Cheshunt, and yet it seems to be flourishing while Mr. Paul's is perishing, showing what a capricious Rose it is. But beauties are allowed to be capricious; and is he not a beauty when caught in his prime? One regrets that the Rose did not bear some bright maiden's name instead of that of a doughty warrior. Wild Rose.

Notices of Books.

Bromeliads. — The second part of Herr Antoine's noble publication, Phylo iconegraphie der Bromeliaceen, is before us, containing lithographie illustrations, partially coloured, and on elephant folio paper, of various Bromeliaceee. The species figured are Vriesia psittacina (t. 6), V. carinata, the V. brachystachys of the Botanical Magazine, t. 6014 (t. 7); V. heliconioides, exhibited as V. bellula (t. 8); V. regina, also called V. Glaziouana and V. gigantea (t. 9—10). The plants are shown of life-size, the analyses much enlarged. A full descriptive text in German, with synonyms, accompanies the plates. Mr. Antoine would add to the obligations under which he has put gardeners and botanists if he would, wherever possible, add figures of the seed and mode of germination. The countless thrusands of seedlings of these plants in the propagating houses of the Compagnic Continentale at Ghent could doubtless be drawn upon for this purpose.

— Contributions to Phenological Research.

—A German brechure, entitled Beiträge zur Phinologie, edited by Drs. Egon Ihne and Hermann Hofimann, has recently been published. It contains a brief history of phenology, or the study of the chronology or periodic phenomena of plants, as carried out in every country in Europe, and is divided into two sections. In the first are enumerated the different publications that treat of this subject, the place of publication, and the name of the publisher, &c. The different localities from which the observations relating to phenology have been collected are no fewer than 1926 in number, and are situated in every country in Europe, from the most out-of-the-way districts in Eussia to the North of Scotland and the West of Ireland. The second part treats of the researches conducted by Dr. Hermann Hoffmann binnelf during the years 1879—82. Dr. Hoffmann is anxions to receive further trustworthy notes and observations on the times of vernation, flowering, ripening of the fruits, and of the first signs of autumnal change, and gives full directions as to how these observations may best be carried out, and requests that they may be forwarded to Dr. Ihne at Giefsen.

FRUITS UNDER GLASS.

VINES .- Now that the subjects in every department are in a state of activity, there is a constant demand for tepid water, a bountiful supply of which is very essential, and which is obtainable at a small cost. The cheapest mode of warming water is to have a tank large enough to meet the demand, so situated that a coil of hot-water pipes can be placed in it. From thence it should be distributed through pipes, which should traverse the ranges of glasshouses, and be fitted with taps and hose. Such is the arrangement we have here, and which has proved to be a profitable investment. Young Vines recently planted hould have their leading shoots neatly trained and stopped when they reach about 4 feet up the trellis; the laterals should be stopped at the first joint—this will give strength to the best placed buds; the secondary growths should be allowed to ramble over the trellis to encourage root-action. Houses in which the fruit is ripe should be kept cool, with just enough fire heat to slightly warm the air as it circulates through the houses; this will both prevent the Grapes from injury by damp, and will also help to mature the wood. Any laterals should be rubbed out as they appear, and sufficient atmospheric moisture employed to keep the foliage healthy, so that the buds which are to produce the next crop may be fully matured. The borders must still be supplied with enough tepid water to sustain the activity of the roots, and if they can be covered with spent Mushroom dung, or some other similar material that will abate evaporation, the necessity of frequent waterings will be considerably lessened. Vines upon which the fruits are stoniog should not be hastened excessively, as during the course of this process their strength is severely strained, and should, therefore, be supported by frequent waterings with liquid-manure, and by a genial atmosphere charged with ammonia to invigorate the foliage. This can be generated by saturating the manure mulchings at closing time with guano-water; this will in another way be beneficial, being distasteful to noxious insects.

STRAWBERRIES .- To keep up a continual supply of these from pot plants until outdoor fruits are ready tor use is far from being the easiest of cultural At and after the present lime the achievements. keeping of the plants sufficiently supplied with water is in itself no easy task, and if this part of their culture is at all neglected they are almost sure to fall a prey to red-spider, which so impairs their strength that a satisfactory crop becomes an impossibility; and where they are grown conjointly with Vines and Peaches the mischiel extends to these likewise. Nutritious supplies in the form of guano water or other suitable agents are especially essential now, when very frequent waterings become necessary, and all runners should be removed as soon as they start, so that no impoverishment of the plant takes place. If it should be desirable to retard any of the crops the plants may be moved from warm quarters to a cooler house or pit, and if this is inconvenient, slight shading should be used. Care must be taken that the latest varieties which are at present in their winter quarters are not neglected or allowed to become drawn through standing too closely together, or dry at the roots. In order to prolong the supply the last batch might be suitably ripened in unheated pits, providing the weather is favourable, and they would be greatly benefited by being plunged near to the glass in coal ashes or cocoa-fibre refuse. The system of providing Strawberries for the dessert during the autumn has now become almost universally adopted, and the sort Vicomtesse Héricart de Thury is the one usually grown, being the most easily managed, as well as the most productive kind for this purpose. preparing the plants, those that have been forced in moderately small sized pots should be selected, and placed in a cool pit to rest and harden, when they should be shifted into pots a size larger than those they are in, and be gradually inured to the weather. The best situation for them during the summer is upon a hard bed of ashes, open to the sun, where they should be properly supplied with diluted liquid manure, and be daily well syringed overhead.

PINES .- In order to produce fruits of the best quality, unremitting attention must be paid to all points in their culture, as a check from any cause whatever would be prejudicial to them. Where the

bed is over pipes or water tanks, it is liable to much fluctuation in heat, through the hastening or slackeniog of the fires, which is a matter that cannot be avoided when the weather is changeable, therefore the beds should be frequently tested with a plungiog thermometer, and the supply of heat be regulated according to requirements. The plunging material should likewise be examined occasionally, and be well moistened through with tepid water if found to be dry. In watering the plants (I refer to potted ones, and not to those planted out) they should be treated individually and not collectively, as is too frequently the case, for, owing to various causes, position for instance, some dry much more readily than do others, while some varieties are grosser feeders than others. The Cayenne, for example, from this cause, requires more water than the Queen. It sometimes happens that the surface of the soil remains wet, from the constant damping between the plants, while the low portion of the balls get dry, and it is an easy matter for the unobservant attendant to overlook plants that are suffering owing to this. A continuance of the treatment recommended at p. 482 will still be suitable to the plants in the early house until their fruits begin to change colour, when air should be admitted more liberally and less moisture be given both in the atmosphere and at the roots-indeed, little if any will be requisite for the latter after this stage is reached. Proper attention having been bestowed upon the young plants which were shifted into their fruiting in February, they will now be making rapid progress, water may therefore be more freely supplied, but must not be overdone on any account, and a little guano might now be profitably added to the water. The night temperature should be raised to 70°, or it may advantageously be a few degrees higher when the houses have been closed with a high temperature from sun-heat. On clear days the airing should be attended to early, and be gradually increased so that there is a genial circulation (not to the extent of draught) through the houses; at mid-day it should be reduced, and finally be taken off early in the afternoon, so that a temperature of about 90° is preserved, when the plants should be gently dewed over. The air in the houses and pits should be kept in a moist condition so as to assist the production of well developed Ioliage. J. Coomber, Hendre Gardens, Monmouth.

Plants and thein Cultune.

GREENHOUSE FLOWERING PLANTS,-The occupants of this glass department of our houses will now, and for the next few weeks, be giving us the greatest amount of floral display of any one part of the entire season. Unfortunately for us in particular, we have to grow our plants in fruit-houses; this brings many of them unduly forward. The temperature suited to Vines does not tend to a prolonged season of bloom, though earlier in the spring we are are glad to avail ourselves of the congenial atmosphere of a vicery that is advancing in its earlier stages. The want of a good greenhouse or two is more felt at this season of the year, we think, than at any other period. It necessitates a considerable amount of scheming, now all our houses are closed, to keep our greenhouse plants in the condition we should like to see them. We find it by far the better plan to make a prominent feature of such genera as will best adapt themselves to the exigencies of the case. It is useless to endeavour to grow some plants of the greenhouse section, however much we admire their beauty and utility, when the conditions of culture are so prejudical to their well-being. It plants cannot grown in a fairly successul manner, their culture had better not be attempted at all. Out of the immense collection of plants now obtainable, some at least may be found that will give an average amount of satisfaction; such should, when experience has proved their suitability, be the ones to receive the greatest amount of attention. This method of procedure will be sure to give to all concerned the greatest pleasure and satisfaction in the long run. Our Azaleas are all now past their best, and fast making their growths; when these are completed we shall turn them outside, gradually exposing them to the full sunshine. The Epacris and soft-wooded Ericas are likewise making their growths; in a few weeks, however, we shall have to be watchful of these

to prevent their young shoots becoming too much drawn by the shade imparted from the Vines that are last developing their foliage. The Deutzias have made a good growth, and will soon be fit for removal to a sheltered gook outside. The sooner we can ease our houses of some at least of the hardier plants the better we shall like it; we do not, however, believe io unduly exposing plants or giving them sudden changes, even if a little more labour is given to attain the desired ends.

With a well ventilated greenhouse the majority of the Cape and New Holland plants will now be making a good show; many of them will keep this house gay till the end of June, and even later in several instances. It will greatly tend to the prolongation of the blooming period if a thin blind is used over a part of the house, at least where those plants that are in full bloom may receive a partial shade during bright sunshine. Brittain's netting is an ample shade for any greenhouse plants; do not by any means resort to the whitewashing or whitening process for a means of roof shading; better use none at all than have such as cannot be removed in dull cloudless weather. All greenhouse hard-wooded plants should be allowed to develope their flowers in all the light possible; especially is this to be observed in the case of Cape Heaths, Aphelexis, Darwinias (Hedaromas), Boronias, and Statices. Then whilst at their best the shading recommended should be used to preserve their beauty. deem it advisable to recommend the use of such plants as these in the average run of conservatories, which at the best even are not adapted for the well being of this class. There are many other plants that can be used with impunity; on such more reliance should be placed for conservatory decoration. Chief among these for the next few weeks are the Chorozemas, the Eriostemons, the Imantophyllums, and the Trachelospermums (Rhyncospermums), with the later Azaleas; whilst of soft-wooded plants there is an abundant choice in the herbaceous Calceolarias, the Pelargoniums (both show and fancy kinds), and other miscellaneous plants, as annuals, &c., which when out of flower are either pruned back or consigned to the rubbish-heap.

The earlier flowering greenhouse plants that are now past their best should have attention given them for pruning, potting, and cleaning, as may be necessary. The Acacias will bear the knife pretty freely, sary. The Acacias will bear the knile pretty freely, so also will the Coronillas, the Cytisus, Actus gracillimum, Boronia megastigma, and the Chorozemas if getting too large for the requirements. We advise, however, that the latter genus be planted out when of large size. When the plants that have been pruned are again in active growth, any potting that may be required can be advantageously performed, giving to the Coronillas and Cytisus a preponderance of good turfy loam, but in the case of the others the major portion of the soil should consist of peat and sand, with a little loam only. Camellias, too, will now be in active growth; give every encouragement to the development of the same by syringing the plants, and, if possible, keeping them in a somewhat close bouse till the leaves are fully grown, then they can be gradually hardened off to free ventilation again or full exposure in the open air. It will not be advisable, however, to let them then even receive the full amount of sunshine during the heat of the day. Keep watchful eye against any slight attacks of aphis on tender foliage, in fact care in every way is requisite for a few weeks not to injure the young leaves. Do not attempt any potting at present, but leave this operation till later in the season.

Herbaceous Calceolarias will need close attention now; do not let them suffer for want of water nor be now; do not let them stitler for white of whater not be fully exposed to the sun's rays as they advance into flower. An occasional dose of liquid manure in weak solution will help them. For the Pelargoniums the same stimulant may be used but more frequently. In the case of both, one or two fumigations will be the case of both, one or two fumigations will be advisable before many flowers are expanded in order to keep in check any aphis that may be hanging about them. Pot up a sufficient, number of Petunias, Stocks (Ten-week), Musks, Heliotropes either Irom the fragrance they emit or for their floral beauty. Another sowing of Rhodamhes will he found very useful, so also will the same of the Celosias, Browallias, and Globe Amaranths (Gomphrena purpurea). By the time these are of any size, there will be a fair prospect of more room as the bedding plants are cleared out. Another sowing of Primula sinensis should be made to succeed those that are now fit for potting off into thumbs. A pinch of Frimula sinensis should be made to succeed those that are now fit for potting off into thumbs. A pinch of Cineraria seed might be sown, but there has not been any time lost in this case as yet. Yamer Hudson, The Gardons, Gunnersbury House, W.

APPOINTMENTS FOR THE ENSUING WEEK.

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MONDAY, May 12 Size of Natural History Specimens, at Stevens' Known.

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THE appointment of Dr. GILBERT to the Sibthorpian Professorship of RURAL ECONOMY in the University of Oxford is an event fraught with good augury for the prospects of scientific agriculture, horticulture, and forestry. It may be known to some of our readers that up till recently the Sibthorpian Professorship of Rural Economy was held conjointly with that of Botany by one and the same person; indeed, the greater portion of the emoluments of the offices was derived from the Sibthorpian endowment.

The contributions to agricultural science of the late Dr. DAUBENY, the first occupant of the combined Chairs, are well known, and were appropriately alluded to by Dr. GILBERT in his inaugural lecture on the 6th inst. After the resignation of Professor LAWSON some muchneeded changes were made under the authority of the Court of Chancery, in consequence of which the duties of the two Chairs were separated, a more adequate salary attached to each, and a new start made by the appointment of Dr. GILBERT to the Chair of Rural Economy, and of Dr. BAYLEY BALFOUR to that of Botany. Both these appointments are excellent, and full of promise for the future. The enactment relating to rural economy is wide enough to cover not only the scientific principles of agriculture proper, but forestry and scientific horticulture; and we may express a hope that the latter department may, at some future time, receive the recognition at the hands of the University that its importance demands. Be this as it may, we congratulate the University on having secured for their first Professor, under the new regulations, a man of such vast experience and insight as the worldknown collaborator of Sir JOHN LAWES. No more suitable appointment could have been made. It is one that does honour to the University, and we cannot doubt that the benefit to the landed interest will be commensurate alike with the dignity of the University and the reputation of the new Professor.

In his introductory lecture, delivered in the chemical lecture-room of the new Museum, on the 6th inst., Dr. GILBERT commenced by giving a brief history of the foundation of the Chair and of the work done by its former occupant. From this he passed to the consideration of the nature and source of plant food, discarding the somewhat inappropriate terms "organic" and "inorganic" as applied to the constituents of plants and animals, and replacing them by the terms "incombustible" and "fixed," and "combustible" or "volatile" respectively. The Professor showed how the analysis of the growing plant varied according to the stage of growth and the part analysed, and contrasted this variableness with the relative constancy of composition of the evenly matured seed, even when grown under different conditions. This circumstance led up to a general review of the work done in the investigation of the chemical history of plants, the lecturer tracing the work of SAUSSURE, BLACK, PRIESTLEV, SENNEBIER, DAVY, and other pioneers, to the time of BOUSSINGAULT, LIEBIG, and DAUBENV. This historical sketch, though brief, brought out the salient facts in a manner that will be very acceptable to those

who have little leisure or opportunity for making the requisite research for themselves, and will, it is to be hoped, be published, with the rest of the lecture, in a separate form. Dr. GILBERT then passed on to notice the establishment of agricultural stations for research, and to a limited extent for experimental culture, in Germany in 1851, and in other European countries subsequently. The total number of which now exceeds 120-a fact which is in painful contrast to our own work in this line, with the one brilliant exception at Rothamsted, and the few others we yet possess. This naturally led up to a notice of the experimental field cultures associated with laboratory work, commenced so long ago as 1834 by Sir JOHN LAWES, and which, ever increasing, have now assumed such truly colossal proportions at Rothamsted. Dr. GILBERT was naturally modest as to his own share in the work which commenced in 1843, though he sketched in outline the nature of the work continuously carried on for more than forty years in that unique establishment. Its extent may be gleaned from the following tabular statement :-

ROTHAMSTED FIELD EXPERIMENTS. Hield Experiments have been conducted for the periods, and over the areas, indicated in the following Table.

Crops.		Dura- tion.	Area,	Plots.
			Acres.	
Wheat (various manures)	• •	 41	13	37
Wheat, alternated with fallow	••	 33,	1,	. 2
Wheat (varieties)		 15	4-8	About
Barley (various manures)		 33	41/2	23
Oats (various manures)		 10*	3/4	6
Beans (various manures)		 32†	11/4	10
Beaus (various manures)		 27\$	I	5
Beans, alternated with Wheat		 28§	I	10
Clover (various manures)		 26	3	18
Various Leguminous plants		 7	3	17
Turnips (various manures)		 28¶	8	40
Sugar Beet (various manures)		 5	8	41
Mangel Wurzel (various manure	s)	 9	8	41
Total root crops	••	 42		
Potatos (various manures)		 9	2	10
Rotation (various manures)		 37	21/2	12
Permanent grass (various manur	es)	 29	7	22

Samples of all the experimental crops are brought to the laboratory. Weighed portions of each are partially dried and preserved for future reference or analysis. Duplicate weighed portions of each are dried at 100° C., the dry matter determined, and then burnt to ash. The quantities of ash are determined and recorded, the ashes themselves being preserved for reference or analysis.

In a large proportion of the samples the total nitrogen is determined, and in some the amount existing as albuminoids, amides, and

In selected cases, illustrating the influence of season, manures, exhaustion, &c., complete ash-analyses have been made, numbering in all more than 700.

Also in selected cases illustrating the influence of season and manuring quantities of the experimentally grown Wheat grain have been sent to the mill, and the proportion and composition of the different mill products have been determined.

In the Sugar Beet, Mangel Wurzel, and Potatos the sugar in the juice has in many cases been determined by polariscope, and frequently by the copper test also.

In the case of the experiments on the mixed herbage of permanent grass land, besides the samples taken for the determination of the chemical composition (dry matter, ash, nitro-

gen, woody fibre, fatty matter, and composition of ash), carefully averaged samples have frequently been taken for the determination of the botanical composition. In this way, on four occasions, at intervals of five years on lour occasions, at intervals of the years

-viz., in 1862, 1867, 1872, and 1877—

a sample of the produce of each plot was
taken, and submitted to careful botanical analysis, and the percentage, by weight, of each species in the mixed herbage determined. Partial separations, in the case of samples from selected plots (frequently of both first and second crops), have also been made in other

Samples of the soils of most of the experimental plots have been taken from time to time, generally to the depth of 9, 18, and 27 inches, sometimes to twice, and sometimes even to four times this depth. In this way more than 1000 samples have been taken, submitted to partial mechanical separation, and portions of the fine soil (that is, excluding stones) have been carefully prepared and preserved for analysis. In a large proportion of the samples the loss on drying at different temperatures and at ignition has been determined; in most the nitrogen determinable by burning with soda-lime has been estimated. In many the carbon, and in some the nitrogen as nitric acid and the chlorine, have been determined. Some experiments have also been made on the comparative absorptive capacity (for water and ammonia) of different soils and subsoils. The systematic investigation of the amount and condition of the nitrogen, and of some of the more important mineral constituents, of the soils of the different plots, and from different depths, is now in progress or contemplated.

Almost from the commencement of the experiments, the rainfall has been measured, for more than thirty years in a gauge of onethousandth of an acre area, as well as in an ordinary small funnel-gauge of 5 inches diameter. An 8-inch "Board of Trade" copper gauge has also been in use, from January 1, 1881. From time to time the nitrogen as ammonia and as nitric acid has been determined in the rain-waters. The chlorine has also in some cases been determined.

Three "drain gauges," also of one-thousandth of an acre each, for the determination of the quantity and composition of the water percolating respectively through 20 inches, 40 inches, and 60 inches depth of soil (with its subsoil in natural state of consolidation), have also been constructed. Each of the differently manured plots of the permanent experimental Wheat field having a separate pipe drain, the drainage waters have been and are frequently collected and analysed.

The nitrogen existing as nitric acid, sometimes that in other forms, and also some other constituents, are, and for some time past have been, determined periodically, in both the rain and the various drainage waters.

For several years in succession experiments were made to determine the amount of water given off by plants during their growth. In this way various plants, including representatives of the gramineous, the leguminous, and other families, have been experimented upon; similar experiments have also been made with various evergreen and deciduous trees.

Having regard to the difference in the character and amount of the constituents assimilated by plants of different botanical relationships, under like external conditions, or by the same description of plants, under varying conditions, observations have been made on the character and range of the roots of different plants, and on their relative development of stem, leaf, &c. In the case of various crops, but more especially with Wheat and Beans, samples have been taken at different stages of growth, and the composition determined in more or less detail, sometimes of the entire

^{*} Including one year fallow.

† Including one year Wheat, and five years fallow.

† Including four years fallow.

§ Including two years fallow.

| Six years Clover, one year Wheat, three years Barley, twelve years fallow.

* Including three years Barley.

plant, and sometimes of the separated parts. In a few cases the amounts of dry matter, ash, nitrogen, &c., in the above-ground growth of a given area, at different stages of development, have been determined. The amounts of stubble of different crops have also occasionally been estimated.

Experiments were made for several years in succession to determine whether plants assimilate free or uncombined nitrogen, and also various collateral points. Plants of the gramineous, the leguminous, and of other families were thus operated upon. The late Dr. Pughtook a prominent part in this inquiry.

and of rotation of crops, the feeding of animals for the production of milk, meat, or the exercise of force—the conditions, in fact, by which their labour can most profitably be exercised; the sewage question, and various matters connected with taxation and compensation for unexhausted improvements. It will be thus seen that the Professor has traced a programme which, carried out as we have reason to expect it will be, will doubtless result in placing before the world the most compact, yet full statement, of the present condition of scientific principles applicable to the cultivation of plants and the nurture of animals for practical purposes that has yet been made, and the value

Saturdays in May, June, and July, at 3 P.M. Tickets may be had from the Curator of the garden.

— CAMBRIDGE,—The General Board of Studies are about to appoint a "reader in Botany," and a University lecturer in Botany.

— "THE DICTIONARY OF GARDENING,"—
The publisher of the Dictionary of Gardening, noticed in our last number—Mr. L. UPCOTT GILL, 170, Strand—has arranged to issue the parts fortnightly instead of monthly, as originally announced.

POISONING BY YEW LEAVES, — Medical journals narrate a case of fatal poisoning of a servant girl by Yew leaves. The symptoms were those of

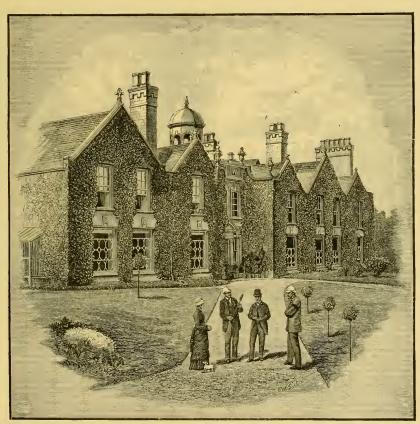


Fig. 119 -EDGE HALL, MALPAS, THE RESIDENCE OF THE REV. C. WOLLEY DOD. (SEE P. 606.)

Considerations of space forbid us from doing more than mention the corresponding series of experiments, elaborated with equal care, on the feeding of animals, the application of sewage, the chemistry of malting, the determination of the amount of rainfall, the nature and quantities of drainage-water according to varied conditions of manuring, and numerous minor but collateral subjects.

In future lectures, to be given at the Botanic Garden, Dr. GILDERT, taking the Rothamsted experiments as a basis, proposes to discuss the sources of the food of plants and animals, the chemistry of the soil and of the atmosphere, the effects of manures, the exhaustion of soils, the effects of fallow of which will be, we may safely venture to say, beyond all precedent.

— Dr. S. SCHWENDENER, Professor of Botady at the University of Berlin, and whose researches in cryptogamic botany, more especially among the Lichens and Algre, are duly appreciated by workers in this country, was at the last meeting of the Linnean Society (May 1) elected a Foreign Member thereof, in the room of the late lamented Dr. G. ENGELMANN, of St. Louis, Missouri.

THE SOCIETY OF APOTHECARIES,—A course of twelve lectures on Botany will be delivered by J. G. Baker, Esq., F.R.S., at the garden of the Society of Apothecaries, Chelsea, on successive

acrid-narcotic poisoning. The report (British Medical Fournal, April 29) from which we cite gives very slight evidence that the "four or five pieces of green leaf" found in the stomach were really those of Yew. They might have been those of Savine. The medical evidence in these cases is usually very defective from a botanical point of view.

—A NEW VINE DISEASE IN SOUTH AFRICA.

—A new and formidable Vine-plague is reported from the Cape. A correspondent, writing from Robertson to the Cape Times, says (according to the Colonies and India), "On a farm recently visited by him two hard-working young fellows had planted last year a piece of new vineyard with some 20,000 Vinestocks. The ground being well trenched, and the soil rich, the result of their labour proved most satis-

factory until very recently, when a strange beetle made its appearance in the vineyard. The insect attacked the Vines first below the soil, biting off the bark all round the Vine-stick, thus stopping the sap from rising upwards, and thereby destroying the Vine. In less than a week more than half the Vines died from the attacks of this pest. Dr. HAHN was immediately communicated with, and went at once to inspect the Vines. He declared the beetle to be an insect known in Italy, where it frequently attacks and destroys vineyards, as the Vine-leaf Eeetle."

--- HORTICULTURAL SOCIETIES, -- Before us there lies the programme of the proceedings of a certain important horticultural society in the South of England, the pretensions of which to occupy a high position in the midst of the many similar bodies so happily abundant in our land, is accentuated by its adding to its name the prefix of Royal. in its locality this body has, through the instrumentality of large and usually well-conducted shows done much to promote a taste for horticulture in its district there can be no doubt. 'Tis true that, owing to the usual practice of keeping the summer show in existence over Tuesday, that the last day (Bank Holiday) might be utilised as a great holiday fête, the society has perhaps from the first assumed a somewhat unprofessional character, and in that respect has had to compromise with many of its sturdiest bond fide horticultural patrons, who felt that pure horticultural work and holiday files scarcely assimilated. Now the society has taken a higher flight. It has at considerable cost secured a valuable piece of land as a habitation, not, alas ! as a horticultural garden, but as a fête ground, devoted not to the culture of plants and to the promotion of horticultural lastes, but rather to the pursuit of sports-lawn-tennis, bicycling, athletics, promenade concerts; in fact, out of a season's programme of some dozen or so of engagements, this Royal Horticultural Society devotes two only to horticultural work, and all the rest to mere entertainment. Perhaps under the new condition of things the designation "horticultural" may well be put aside, and replaced by "recreation and entertainalthough Royal patronage may well wince at the association. Horticulture is a noble and elevating pursuit, and it is difficult to associate it with such matters, innocent enough in themselves, without some lowering of tone. Happily in most cases, indeed in the great majority, horticultural societies are what they profess to be and not something else.

- FLORA OF THE PHILIPPINES AND ITS PROBABLE DERIVATION. - Under this title a communication was laid before the Linnean Society (May 1) by Mr. R. A. ROLFE, of Kew. As recently computed, the whole phænogamic vegetation consists of 3564 species, belonging to 1002 genera. Of 165 Dicotyledonous orders 119 are represented, and of Monocotyledons 25 out of 35; the Gymnosper-meæ are poor in numbers. The preportion of vascular Cryptogams to Fhenogams is nearly oneeighth, chiefly Ferns. Fifty-two species of Ferns are not known elsewhere-a significant fact. The endemic phænogamic plants consist of 917 species, or a proportion of over one quarter endemic; the Dicotyledons showing over one-third to be endemic, and the Monocotyledons a little over onetenth, chiefly Orchids. A striking feature is the large number of endemic species, and the relatively few endemic genera. The flora, in some respects, may be said to have a Malayan aspect, but is wanting in many typical genera, even such as flourish profusely in the neighbouring island of Borneo. There is an appreciable Austra-lian element mingled with the above; yet, taking all data into consideration, Mr. ROLFE arrives at the conclusion that the Philippines are truly insular in the essentials of their natural bistory - this not so much through there being an early separation of the Asiatic continent, which had a dip under the sea (submergence alone causing extinction of genera as Mr. A. WALLACE has inferred), but from their being largely volcanic and geologically speaking of recent origin-presumably what is believed to have been the case in certain other oceanic islands-the vegetation therefore modifying itself accordingly.

THE NATIONAL CHRYSANTHEMUM SO-CIETY.—The annual exhibition of this Society will take place at the Royal Aquarium, on Wednesday and Thursday, November 12 and 13 next, and the schedule of prizes which has just been issued shows that there has been a considerable augmentation of the prizes in many of the leading classes. the class for forty-eight varieties of cut blooms of Chrysanthemums, twenty-four to be incurved and twentyfour Japanese, and the stand to consist of not less than thirty-six varieties, the prizes are now £15, £7, and £4. It could be wished there was not such a very wide difference in the amounts of the 1st and 2d prizes, especially as during the past two or three years the two best competing stands in this class have come very near to each other. The suggestion thrown out last year, that a committee should be appointed to adjudicate on the merits of new Chrysanthemums at such seasons when they cannot be submitted to the Floral Committee of the Royal Horticultural Society, has been acted upon. It is also intended to issue an official catalogue of Chrysanthemums, after the fashion of the Catologue of the National Rose Society; and it is intended that this shall become a reliable guide for Chrysanthemum societies, exhibitors, and judges.

— PINUS COULTERI.—In a specimen of this tree at Kew the lower branches are unusually long and lithe, trailing and interlacing on the ground so as to resemble a number of snakes. In some cases the smaller branches are abruptly bent back towards the trunk, curving again towards the free end, somewhat like the letter S placed sideways.

POLLINATION OF EUCALYPTS .- On this interesting subject, which was discussed in these columns some time sinee, Baron VON MUELLER writes:—
"The pollen is sbed on the stigmas of Eucalypts before the operculum drops; but of course honeyseeking insects may occasionally carry additional pollen from other flowers and even other species, the fruit being polyspermous. Natural hybrids among Eucalypts are probably rare—at least I do not find transitory forms among the several gregarious species of any one locality, but artificial impregnation would not be difficult. Crossing of the large-flowered species, particularly those having red and yellow filaments, with each other, would doubtless produce new horticultural forms, some likely to surpass in beauty the natural ones."

- THEOPHRASTA JUSSLEI. - The flowers of this singular and unique plant are unfortunately, on account of their position, almost concealed from Unlike the allied Clavijas, which flower along the naked stems as well as amongst the leaves, the large deeply bell-shaped dusky white flowers are produced in dense racemes between two closely packed tiers of the upper leaves. From a horticultural point of view the plant is chiefly valuable as a stove evergreen, the large spiny serrate rigid leaves of which are persistent for several years. A large flowering specimen in the Palm-house at Kew is an object of great interest, seeing that it is the only species, and the authorities deserve a word of thanks for the means they have adopted of enabling the visitor to see the flowers which under ordinary circumstances he could not do. It is figured in the Botanical Magazine, t. 4239. The fine-leaved plant familiar to gardeners as Theophrasta imperialis is a species of Chrysophyllum; and other plants labelled Theophrasta in gardens are referable lo Clavija.

- ALPINJA NUTANS .- So highly modified are the flowers of the varied and usually showy order to which this plant belongs, and so developed by insect agency that many of the older botanists experienced no little difficulty in describing what the authorities of to-day recognise as staminodes or barren petaloid stamens, In this instance one is so modified as to form no mean imitation of the labellum of an Orchid. It is large and yellow, distantly flaked with scarlet on the upper half, while the lower is closely streaked or suffused with the same colour. The comparatively small pinkish petals are quite eclipsed by this labellum; but all these, together with the bracts subtending the inflorescence. constitute a suitable and highly ornamental plant for a large house, as the Palm-house at Kew, where it is now flowering.

— FERRARIA UNDULATA. — Amongst the numerous and beautiful representatives of the Iris family from South Alrica, now flowering in the Capehouse at Kew, the subject of this note possesses more than ordinary interest, from the distinct and unusual appearance both of the leaves and flowers. The former are arranged in two ranks and overlap each

other more or less by their inflated sheath-like lower half. The flowers resemble in form those of a Moræa—the lower part of the perianth forming a campanulate cup, while the upper balf is spread out horizontally, and of a purplish-brown colour with waxy, much crisped and green margins. It was originally introduced more than a century ago, and figured in the Estantical Magazine, t. 144; but like many other Cape bulbs, beautiful or interesting, it is apt to get neglected and lost.

YELLOWS .- Looking across a broad belt of deep rich yellow Wallflowers, there is seen beyond big mass of Alyssum saxatile compactum in full bloom; and, curiously enough, we see in these two undoubtedly yellow-flowered plants a contrast of a most striking yet pleasing kind. Somehow, in massing or mixing colours, we, to create strong contrasts, associate yellow with some other very distinctive hue, and vice versa, thus creating combinations that are seldom artistic and too often odious. But if we were to keep our masses of mixed plants to particular hues of colour, what charming combinations might be obtained, as seen in this present instance, where the truly lovely pale soft delicate yellow of the Alyssum seems to find a bold and effective contrast in the deep orange-yellow of the Wallflower. It would not be difficult to mix with these some three or four other distinctive intermediate yellow shades, these skilfully arranged would give a beautiful effect. Pity 'tis the Alyssum is such a common plant, for were it not it would be much more highly prized, and yet in the production during the month of May of a perfect mass of exquisitely beautiful yellow it is unrivalled. It is a curious fact that in the autumn we get our most striking contrasts in yellows in one annual plant, the African Marigold. With this the orange is of the deepest, and the sulphur or lemon hue of the palest, whilst in some good strains several other intermediate hues of yellow and golden are found. Grand, indeed, are the effects obtained from large clumps of these Marigolds in the autumn when planted amidst evergreens, or where they may be seen at remote distances. Pansies, again, give a great variety in yellows, making splendid spring and summer masses. As a rule, however, yellows show best in spring and in the duller months of autumu.

— PHOTOGRAPHS OF FLOWERS,—We are glad to learn that Mr. STEVENS' photographs of flowers, to which we have often had occasion to refer, have met with special recognition on the part of the Association Belge de Photographie.

- THE SCARLET MENICAN THISTLE. - It would be difficult to name, for cool conservatory decoration, a more striking, and at the same time a more uncommon looking and beautiful plant than the subject of this note. Introduced to British gardens about 1829, and at one time pretty largely grown, it had almost, until very recently, disappeared from cultivation. Perhaps this is owing to the fact, that it is not safe to trust the species to the not very tender mercies of an Eoglish winter in the open border, except during exceptional seasons, and under very favourable conditions. Grown in pots or small tubs, however, in a cool house, where it is safe both against severe frosts and excessive damp, few more splendid effects are attainable than those afforded by a few well grown specimens of this Thistle. The large radical leaves are not unlike those of some of our own hedgebank Thistles on a large scale, and the large flowerbeads, about 3 inches long, clustered at the extremity of somewhat slender purplish coloured branches, are especially conspicuous by reason of the bright scarlet involucral scales. In the cool compartment of the new range at Kew there are some nicely grown plants, now in flower. The name formerly applied to the scarlet Mexican Thistle was Erythrolaena conspicua, the name adopted in SWEET's Flower Garden and in the Botanical Magazine, t. 2909, in both of which works the plant is figured, but in neither is anything like justice done to its beauty. Mr. HEMSLEY, having had to study the species and its allies, has recently referred E. conspicua to the genus Cnicus. Cnicus conspicuus is therefore the proper name at present.

—— LILIES OF THE VALLEY, — Messrs, HAW-KINS & BENNETT, of Twickenbam, bave favoured us with a sample of their present season's growth of Lily of the Valley, accompanied by a bunch of flowers gathered from plants allowed to take care of themselves, and a more striking illustration of the advantages of good cultivation could not be obtained. The flowers and foliage are truly magnificent, and great quantities of the same quality are now being marketed at remunerative prices,

- THE HEALTH EXHIBITION .- "I wish you well" is the consummation of good wishes. It is one which the most selfish can reciprocate, and hence every one is bound to wish every success to the Exhibition opened on Thursday last by the Duke of CAMBRIDGE, acting on behalf of the Prince of WALES. Gardening and the provision of ample space for fresh air, are objects so intrinsically in unison with the objects this journal has from the first consistently advocated, that it will be our duty, from time to time, to call attention to those features of the Exhibition which come within our scope. Thanks to Messrs. PAUL & Son, of Cheshunt; Voung, of Milford; CARTER and SUTTONS, and others whom we shall have to mention later on, the importance of horticulture for purposes of food-supply and ornamentation is duly upheld. Messrs. Carter and Messrs. SUTTON show elaborate collections illustrative of the food products of the world. Messrs. SUTTON also show specimens of Ensilage from Lord WALSINGHAM'S farm.

MR. BULL'S ORCHID EXHIBITION opens on Tuesday next, and will be on view to visitors every Tuesday, Thursday, and Saturday during May, June, and July.

- LEIOPHYLLUM BUXIFOLIUM .- A very old favourite, sometimes called a Ledum. It is a dwarf shrub, with small ovate evergreen leaves and terminal clusters of small pink flowers. It is common in the sandy Pine barrens of New Jersey and the mountain tops of Virginia, and found in no intermediate

- THE ROSARIUM, ASHDOURNE.-The business carried on at this nursery during the last two years under the name of A. Godwin & Sons has passed into the hands of Mr. A. W. Godwin, who will trade as "GODWIN & SON."

THE WEATHER. -- General remarks on the temperature, rainfall, and duration of bright sunshine, agricultural and sanitary purposes, during the week ending May 5, 1884, issued by the Meteorological Office, 116, Victoria Street, London, S.W.: logical Office, 116, Victoria Street, London, S.W.:
-The weather has been in a very unsettled, changeable condition generally, brief intervals of clear sky alternating with heavy showers of rain or hail. In many parts of England and Ireland thunderstorms have been experienced, that prevailing in the metropolis on Monday afternoon being of unusual severity. Temperature, although higher than of late, has again been below the mean, the deficit varying from 2° in the "Channel Islands" to 3° or 4° in most other districts, and to 5° in "Ireland, N." The maxima, which were recorded on different dates in various which were recorded on different dates in various parts of the kingdom, ranged from \$1° in "Scotland, N." to \$6° in "England, E.," "England, S.," and "England, N.W.," and to \$6° in "Ireland, S.," The minima, which were also registered on irregular dates were as low as 30° in "Scotland, N.E.," "Scotland, E.," and "Ireland, N.," 31° in "England, E.," "England, S.," and threshold of the state of "Ireland, S.," and the "Channel Islands," but nore elsewhere, the excess in "Scotland, N.," and "Ireland, N.," being rather large. Bright sunshine has been rather less prevalent than during last week, the percentages of possible duration varying from the percentages of possible duration varying from about 27 or 30 in most parts of the country to 30 in "Scotland, N.," and 45 in the "Chaonel Islands." observed.—During the whole of this period the barometer has been comparatively high and steady over France, while some large depressions to the steady over reasce, while some large depressions to the westward of Scotland—generally travelling eastwards or north-eastwards—and small subsidiary disturbances further southward, have caused the barometer over our islands and Scandinavia to oscillate considerably. Moderate to fresh winds between S. and W. or N.W. have been experienced generally, but on some parts of our western and northern coasts they have occasionally risen to the force of a gale.

GARDENING APPOINTMENTS. -LIAM GILLES, son of the late Mr. GILLES, Gardener at Northwood Park, Middlesex, has succeeded Mr. SHARPE as Gardener to the Hon. MARK ROLLE, Stevenstone, Torrington, Devonshire,

HONESTY.

In walking through an old - fashioned and long-established Kentish farm-house flower garden I lately saw clumps of Crowa Imperials, Hepaticas, Tulips, double Primroses, Omphalodes verna, Dielytra spectabilis, Lilium candidum, Saxifraga ligulata, and other subjects of such enormous size that they must have been there for years, and happily left undisturbed. But amidst them all the Honestys shone out in real vernal beauty. were to be seen three distinct types-the early flowering, deep crimson-purple, with its dark foliage, dwarfer growth, and bold heads of flower—a variety that is, perhaps, best known as the New Early Crimson; the ordinary pale lilac-purple, of taller growth and later in blooming; and the white. The former is unquestionably the best type for spring gardening, and in this particular garden it seeds itself, and the seedlings come up by the hundred in spring, forming huge patches where there is space for the plants to grow. The soil is a deep and slightly sandy moist loam of good depth, and in this the Honesty send down its fleshy root, getting a good grip of it, forming dense vigorous bushes, producing it spring flower heads of dense size. How is it that these most valuable spring plants are so seldom seen in gardens? Probably many plants are lost by transplanting them to the open ground from the seed-bed. It is a plant that will not bear transplanting well. When the seedlings reach a fair size, they form huge fleshy roots that reach down deeply, and these plants do not trans-plant well. If transplanting must be done, it should be before the roots are formed, and then the plants have a better chance of succeeding. Persons fond of these vernal Honestys should grow a few plants in a well-prepared bed, sowing the seeds thinly, and not think of disturbing the plants, but leave them to flower where they are sown; and it does not matter how hard the soil may become about the plants so long as it is deep and moist, and the roots can gain a good hold of it. The seed should be sown in spring, so as to give the plants a good start, and they will grow into large size by the following autumn, and flower grandly in the spring following. If seed be not sown until July and August no flowers can be expected till the following year, as the plants will not grow into sufficient size to do this; hence the advantage of early sowing. But if transplanting must be done let it be as early as possible, when the plants are small, but sufficiently rooted to lay hold quickly on the new soil.

ON THE SPREADING OF THE POTATO DISEASE.

(Co..cluded from p 589)

In every case where the disease shows itself late in the season there are comparatively few fields originally diseased, and as a rule the disease in them will commence from but very few starting points. It might, therefore, be expected that originally diseased fields in late years will not be so severely attacked at the end of July, as the same class of fields in early years, though the disease in both cases really starts at the same time, namely, as soon as the Potatos have appeared above-ground. Let us now see what the table in the Gardeners' Chronicle of March 1 tells us on this point. 1881 and 1883 were very late disease years. Forty-four reports announce disease as present, but not one of these belongs to the class "severely attacked;" yet it cannot be reasonably doubted that some few of these fields were "originally diseased" in the early years; on the other hand it will be seen that many of the fields were "severely attacked" at the end of July. If, bowever, I had given a report to the Gardeners' Chronicle on the disease in my experimental plot in the late disease year 1883, I should have reported diseased at the end of July, and even in the middle of July I should have said "severely attacked." This was because by planting diseased Potatos I had about 200 distinct starting points per acre. As to the influence upon the produce of the crop in this artificially early and severe attack, it may be stated that I only had a little more than I ton per acre. Had my plot been originally disease-free, there is not the least doubt that I should have grown 8 to 10 tons, or even more, per acre. It might further be added that in the row next to the starting points the produce was only a little more than half a ton, i.e., one fourth less than the seed used; in the rows furthest from these points the

produce was about 2 tons per acre. Of course the Potatos were small, watery, and of very little value.

Concerning the rapid march of the disease through-

out a greater part of Europe in the year 1845 : this was more apparent than real, for the disease was present in many parts of Europe long before 1845. Danish journals began by reporting its presence universally in Holland; then they said it was in Northern Germany, then in Holstein, and lastly in Denmark. The Gardeners' Chronicle followed the disease from the southern districts of England to the northernmost counties of Scotland. But this does not convey the idea of a genuine march of the disease from place to place, but really of a march from south to north, just such a march as annually takes place. Mr. Plowright's tables show that the disease commences its appearance in the south of Great Britain, a little later is visible in the midland counties, then in the northern counties, and then in Scotland. But this is no real march, it is only a formation from the south to the north of the hostile army starting from its winter quarters, the seed Potatos. What about England? I have not had the opportunity of studying the progress of the disease in that country before 1845. can cite one author having written on the subject. In a treatise entitled The Potato in Jersey, the author, C. P. Le Cornu, says :- "Although prevailing throughout England in the season of 1844, the disease was not observed in this country till the latter end of June in the following year."" Another evidence is to be found in Knight's Penny Magazine, Part II., 1846. In an article in this periodical the author (according to a Danish journal) says that he has evidence enough to convince himself that the Potato disease was present in England in the year

In Norway the disease was known at least as far back as 1841. The director of an Agricultural School, Mr. Westrem, says : - "The first time I heard of the Potato disease was in 1841, when it began its ravages in the parish of Vik." And again:—"In the year 1842 the disease appeared in Sogndal (where the author lived), and spread widely." There is not the least reason to doubt that what the author saw and described was the common epidemical Potato

In Denmark it was present at least as early as the ear 1842. In an article written in March, 1844, § Mr. Fjeldstrup, a very able and conscientious agricultural writer, gives more instances in more parts of Denmark. Amongst others, he publishes a letter from one of his friends, a farmer near Sveahorg, who writes :- " For about forty years I have grown Potatos in the field, but never until two years ago (i e., 1841 or 1842) have I noticed the disease described. In the first year he did not see the disease except in one variety of his Potatos. In 1843 it was found, in all kinds cultivated by him. Mr. Fjeldstrup said he knew the Potato disease from his own personal experience from 1842 and 1843. In 1843 the disease must have been pretty general in a part of Western Jutland, for M. Fjeldstrup relates that a local agricultural society held a meeting in Ilolstebro on February 6, 1844, to discuss the calamity."

In Germany the disease was very widely spread in 1840, though not present everywhere, and it had been noticed a few years before that time. Among the many German books and articles written upon the Potato disease before \$845, I only call attention to the treatise entitled Die Kartoffel Epidemie der Jetzten Jahren, von Dr. V. Martius: München, 1842. This treatise is of a classical interest in the history of the spread of the Potato disease. Dr. Martius here describes the Potato fungus, which he had studied

Yournal of the Royal Agricultural Society of England,

^{*} Fournal of the Royal Agricultural Society of England,
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13 a 15%,
14 a Cooke's Ruit, Suud, Mideeu, and Mould, ad elistion, p. 145, the auther says :-" It is also exceedingly probable that, in a mider form, the murraio was present a year or two before it broke out to such an abstraing action. A correspondent in the Gardenoche testifies to its occurrence in districts in Item Gardenoche testifies to its occurrence in districts in Item Gardenoche testifies to its occurrence in districts in Item Gardenoche testifies to its occurrence in districts in Item Gardenoche testifies to its occurrence in districts in Item Gardenoche testifies to its occurrence in districts in Item Gardenoche Gardeno

microscopically, and gives a representation of it. The figures (t. iii., figs. 26 and 32), it is true, are not good, yet as to their identity with the true Peronospora infestans there can be no doubt. Whether Dr. Martius was indeed the first scientist who has given a description of the Potato fungus I cannot say, but I may add that Professor De Bary does not seem to have known Dr. Martius' book, when, in 1861, he wrote his treatise, Die gegenwärtig herschende Kartoffelkrankheit, for here De Bary says (p. 7) that the Potato fungus was described for the first time by Madame Libert in a periodical called Organe des Flandres. It is, however, certain that Dr. Martius had described this fungus three years previously, and this is conclusive proof that the Potato disease of our day was spread throughout many parts of Germany as ar back as 1841. Dr. Martius thought it could be traced back as far as 1830; whether he be correct or not in this supposition I have not had the opportunity of critically examining, but it cannot be reasonably doubted that it was present in many parts of Germany in the latter half of the thirties. In his own country - Bavaria-it had not, to the best of his knowledge, appeared east of the Rhine at the time (1842) he wrote his treatise on the Potato disease. It is very remarkable to see how well Dr. Martius at this early period had studied the disease. He concluded - I, that the fungus was the true cause, not the consequence of the disease; 2, that the disease was not likely to disappear again; 3, that when fresh Potato slices are infected with the fungus they become diseased; 4, that when whole Potatos are infected with the fungus they also often become diseased, but that it is a necessary condition that the Potatos should be wet. So long has this important fact been known, and yet it has been recently contested! In France, according to Dr. Martius, the disease was present in different parts as early as 1840; as a proof he cites the Echo du Monde Savant, 1840, No. 563, p. 474.

Alter having convinced myself of the comparative tardiness with which the disease spreads, I of course have taken a very different view of the value to be attached to the means of completely disinfecting the seed-tuhers which I have devised. I hope that one day legislation will make this simple and inexpensive disinfecting process obligatory; for if proper measures be taken to ensure an effective execution of the law there is every possibility that the disease may be stamped out altogether. I am quite sure that, at any rate, it can be reduced to a phenomenon of a sporadic character, to be found only here and there, now in one, now in another part of the country, as it was in England and in Denmark prior to 1845. Under such circumstances the disease will only become developed late in the year, and consequently it will cause but little injury to the crop; and further, the tubers can always he completely preserved from disease by high-moulding. The greatest obstacle to a complete stamping out of the disease is to be found in the fields which have grown Potatos in the preceding year. Some diseased Potatos may remain there, from which the disease may take its start. Yet with proper precautions this danger might be done away with, and from year to year this danger would decrease. In the northern and more eastern countries. like Denmark, Norway, and Sweden, the winter is mostly so severe that all Potatos left in the ground will be destroyed by the frost, and even in England I think this will be the case in most years. Then again it may be thought that the disease would introduce itself in the course of the summer from a neighbouring country. Certainly this cannot be denied, but in the first place the history of the disease plainly shows that it takes more than one year for it to spread in any country, and in Great Britain, by its insular situation, the "silver streak," will afford a most powerful protection against this eventuality.

Even if the disease could only be rendered sporadic by the means of compulsory disinfection of the seed Potatos one thing at least cannot, I think, be reasonably decied, viz., that the very last effect of disinfection would be to make the disease always very last this is, however, just before the general outbreak took place, and this is synonymous with a greatly augmented crop. I think that the assurance of such an economical result cannot be considered an unworthy object for legislation.

Nothing is more calculated to prove the effect of a general disinfection of the seed tubers than the fact that a very early general outbreak of the disease in one year is always followed by a late general attack

in the succeeding year. This late attack, accompanied by a large crop, is the consequence of the natural disinfection of the tubers in the preceding year; and thus it may be said that Nature herself has many times made the experiment on a large scale, and has proved the exceedingly great value of disinfection. The last time this great natural experlment was made throughout the whole of Northern and Western Europe was in the years 1852 and 1883. The natural disinfection, however, is of a more or less incomplete character, whereas the artificial disinfection can be made complete. Hence the effect of compulsory artificial disinfection will be many times greater than that of natural disinfection were iff or the reasons already indicated it prove insufficient absolutely to stamp out the disease.

Even without the assistance of legislation I am sure that great benefit may be derived from the disinfection of the seed tubers. A field planted with disinfected Potatos will not be originally diseased. In Ecgland it will not, therefore, generally speaking, be found in Mr. Plowright's Class III., "severely attacked "at the end of July; but at that period it will generally belong to the classes not attacked or only slightly attacked. In Scotland it will, generally speaking, keep this position for about a fortioiph longer than in Eugland. If, then, the disinfected seed tubers have been properly sprouted beforehand, and if they have been early planted, they will be from ten to fourteen days further advanced in their growth than they would otherwise have been; and this has just the same effect as if they had not been attacked by the disease till so many days later. I therefore think that by the means of disinfecting and sprouting the seed Potatos the farmer may always ensure himself a good crop, even in very early disease years. In such years it is not unusual for the tubers to cease to grow when they have only attained the weight of 2 or 3 tons per acte; if the seed Potatos had been disinfected and sprouted, the same field, I think, might have yielded perhaps Io to Iz tons or more to the acre, and the quality, of course, would be much better, because the tubers are considerably more mature.

tubers are considerably more mature.

In conclusion, I beg to remark that to kill the mycelium the tubers themselves must have acquired and maintained the temperature of at least 40° C. (104° F.) during four hours. The heating process takes seven or eight hours or more according to circumstances, 7. L. Yensen, 141, Rue Perronet, Mentilly-sur-Scine.

THE PROPAGATOR.

WHERE foliage plants are used for indoor decoration a great many of them get shabby while doing duty, and are not of much value again unless for the purpose of giving the means of raising young stock. The worst of it is that the cuttings taken from these unsightly plants which have been used indoors are very stubborn and not easily struck. The reason of this is that the performance of the functions of the plants has been interfered with by the unhealthy atmosphere in which they have been kept, and the first step should be to get them back into the regular course before the cuttings are taken. This is best accomplished by placing them (Dracænas, Crotons, Rhopalas, Grevilleas, Dieffenbachias, &c.), close together where they will not be too prominent in a warm moist house, there to remain for a fortnight or three weeks, at the end of which time the tops will be ready for the cutting-case, and in due time will furnish handsome young plants for next season. The old plants should be allowed to remain in the warm-house until they have furnished as many cuttings as are wanted, and then they should be thrown away at With new plants received it should always he the rule to look out for a cutting or two, to make sure of the stock, as soon as possible after receiving them. The young home-made plant will often beat its parent in a few months, and is always more safe than that which has been treated elsewhere. It is a popular error that nurserymen do not like gardeners to be very clever at raising young stock; nothing could be more fallacious than such a notion. On the contrary the nurserymen know that none are better buyers or give higher prices for plants than those who grow them well and get pleasure out of them, and that the owners of garden establishments where plants of the same species have to be bought in year after year, soon lose all interest in their gardens. So interested indeed are they in the success of the plants they sell, that our leading nurserymen are always ready to send their best men to advise where their client's plants are not doing satisfactorily. T. O.

The Henbageous Bonden.

DAFFODIL NOTES: DOUBLING,—One of the most interesting exhibits at the great Daffodil show (April 1) was that by Mr. Elwes of the double form of 1 N. moschatus, and which he considered to be wild. It had the exact form of moschatus, and was exceedingly pretty, of an even greenish-white. Mr. Elwes told me, as a singular fact, that it only came thus double when grown on very poor soil, amongst the roots of some old Laurels,

Mr. Dilwyon Lewellyn sent me from his grounds at Penllergare this week a similar flower, which he also believes to be wild. He writes, "I have plenty of the single form in the gardeo, and this double is in a poor spot outside, apparently rejected, and growing at the foot of an old Rhododendron. I have no other double moschatus anywhere in the garden, but of course this is no proof whatever that the plant was not already a double, or even that it may not have been planted there purposely many years ago, where it now grows," Mr. Lewellyn had previously sent me word that there were but three bulbs of it, and that it had not been noticed by him before its present occurrence.

The possession of this interesting flower has enabled me to examine it carefully. It is a true moschatus, but the filling up of the tube has shortened it a little, so that the perianth is about a quarter inch longer than the tube. It is an exact double, and no more; the six duplicates of the perianth segments which occur within the tube each project a quarter inch, exactly as in the outside corolla. The doubling of the inner tube is split up, and slightly convolute; the pistil and stamens are present, and the ovary is active.

Here, then, we have a most perfect example of doubling, with direct evidence of the presence of the wild form of single and double in close proximity. Our friend, Mr. Wolley Dod, has told us that most chatus is only an albino form of our native Pseudo-Narcissus, and that he has traced the connection of the two forms in the same meadow, which is prohable enough. He is further a believer in the doubling of the Daffodils by culture. Here, then, I submit are two examples which do not bear out his theory, but rather the reverse. I think these instances rather go to prove that the pollen from the cultivated garden form of moschatus had been carried to the wild original stock, and by the cross-seeding the plant has become a double.

I cannot see how it is likely that a bulb can be made to produce double flowers by culture. A bulb is a bud-it matures and produches a flower; it seeds, and its life is completed thereby. It splits up, and its bulblets in time become bulbs-but these will be like their parent bulb, and no otherwise. If it developes into a higher stage it will he by its seeds, and the progression will be thus: -1, Seed; 2, bulb; 3, flower from single to double. It would be difficult to believe, as in these two cases, that single forms of moschatus planted thus in poor soil amongst the roots of old Laurels in one case, and outside a garden amongst Rhododendron roots in the other, would progress from single to double by root growth only. I sent a copy of the Gardeners' Chronicle of April 5 to my correspondent in Wales, from whom I had obtained the interesting series of the single and double Lent Lilies which formed the subject of my essay in your columns, and of my remarks at the Linnean Society. He wrote me in reply, referring to Mr. Wolley Dod's note which appeared at the same time, as follows:—"I see a chapter by Mr. Wolley Dod about the single Daffies becoming double. They must have been starved in poor soil before planted there, and were gone single through poverty, and when in fresh soil went to their original. Seedlings may come double, and the parent plant remain the same, I say." I think my Welshman is right, and there is a most interesting subject in this quotation from his racy letter. It is certainly the case that doubles do go back to singles, and why may not such a single again become a double, as formerly? I have observed that the double forms of N. incomparabilis, which are so largely imported as fine large ripe bulbs from Holland, and which produce the very full doubles known as Butter and Eggs, Codlins and Cream, and Eggs and Bacon, grow less and less double year by year in my garden.

This was shown in a most remarkable way at the Daffodil Show, where Mr. Walker and Mr. Ware each exhibited as a great novelty, and with the astounding title of N. incomparabilis albus rubro aurantiacus, what was neither more nor less than an old friend—Eggs and Bacon—turned single. It was a lovely form of the Peerless Daffodil, having a crown of a richer orange and scarlet than any Mr. Leeds ever succeeded in raising, and which had evidently been produced by the old Dutchmen of a forgotten generation when singles were at a discount, and the original form of which had been forgotten, whilst the saleable doubles from off it had been propagated by millions. Very likely Mr. Walker had forced the bulbs for Covent Garden market until they had been impoverished, and when planted out in the reserved garden produced only singles. Here then will be an opportuoity of testing the point, whether they still retain in the bulbs the ability to grow doubles after a rest of proper cultivation.

Another interesting point raised at the Daffodil Conference, was the true form of N. Telamonius—the parent of our common double garden Daffodil.

Mr. Llewellyn exhibited a large group of wild Daffodils from his estate at Penllergare, near Swansea, and here were found the types which were accepted by Mr. Baker and the Daffodil naming committee, as the single and double forms of N. Tellamonius.

The next question was the true form of N. princeps, and when these two are placed side by side it is at once evident that they are brothers, the only difference heing the longer tube, and larger size of princeps. I believe the latter is the Irish form of N. Telamonius, the kinder climate and more favourable conditions, continued over a long period, having produced the larger plant. Last week were sent to me a bunch of wild Daffodils from the coast of Cumberland, and from this favourable climate there were both the single Telamonius and princeps from the same locality. The double Daffodil, which occurs wild in some parts of Ireland, is the double princeps, but there is also a good deal of the double Telamonius—probably imported from Holland for gardens. The double form of N. naous also occurs, and was sent to me last week from Cork. It has little value beyond being an interesting variety. The double Jonquils which abound in Ireland in many varieties are exceedingly pretty, and should be sought after. For bouquet purposes their lovely small flowers are most useful. Wm. Brockburst, Dickburst, Dickburst, Dickburst, Dickburst, Dickburst.

PYRENEAN DAFFODILS .- The Pyrenees in spring offer fine hunting grounds to those interested in the natural history of the varieties of N. Pseudo-Narcissus. I lately complained that modern writers seem to have followed Parkinson in referring all Daffodils of which the bistory is obscure to Spaio, and that I had in vain looked for original authority as to their habitat. It is consoling, however, to think that Mr. George Maw is now searching the Pyrenees, and we hope to learn much about Pyrenean Daffodils when he returns. Through the kindness of friends who have visited the Pyrenees, I have this spring received some interesting Daffodil flowers, and gleaned some information about them. With regard to the N. Pseudo-Narcissus pallidus præcox, as Mr. Barr has named it, after Parkinson, I have already said that it abounds in several parts of the Department of the Basses Pyrenees in many shades of colour and different forms of flower, and as several of us have secured a large number of bulbs we shall be able to submit these forms to some future Daffodil Conference.

As we get higher above the sea level, the prevailing Trumpet Daffodil is one named by French botaoists N. muticus, but generally known in England as N. abscissus, being identified with Farkinson's "Daffodil with the clipt truck." The aebompanying woodcut (fig. 120) gives its shape, the dimensions of all the parts being exact to Nature. The crown is yellow, and the perianth pale straw colour. It is one of the latest of the Daffodils, as bulbs from the Pyrences are only now opening their flowers in my garden at Edge. The leaves are broad and thick, as in the bicolor section, to which it belongs. The segments of the perianth are not imbricated, the distinction between interior and exterior segments being hardly perceptible; the tube is longer than in most of the bicolors, and the pedicel

About a week ago I received through the kindness of a gentleman in Norfolk three Daffodil flowers from bulbs growing in his garden, which were collected by him last year in the Pyrenees, whilst flowering in the month of May. The first is abscissus, already described, and is the specimen from which the accompanying figure is taken. Of this he says, "N. abscissus grows everywhere, covering the ground, and quite colouring the mountain pastures in the neighbourhood of Gavarnie." The second flower I have called "bioloto," believing it to answer in all important particulars to the bicolor of gardens, except in size, which may probably be increased by cultivation, and the colour of the perianth, which is the same as in



FIG. 120,-NARCISSUS ABSCISSUS.

abscissus; but the wild bicolor, as represented in Curtis's Bot. Mag, has not a white perianth. The tube of this flower, which is here figured (fig. 121), is remarkably short, and the perianth segments very broad, and so much imbricated that by closing them down to the crown the base of the interior segments is almost hidden. My informant is not sure in what spot this flower was found, as he did not distinguish it from abscissus, but he says, "I suppose growing with abscissus. When I saw a plant which seemed to differ at all from others I generally dug it up." The third and most interesting of the three flowers is that



FIG. 121.- NARCISSUS BICOLOR (WILD).

of the genuine wild N. cernuus—these, white in colour, having rather narrow incurved perianth segments about three-fourths as long as the nodding crown; the flower came too much withered to sketch. The letter says, "The cernuus was found by my brother-io-law while chamois hunting on the Spanish side of the Pyrenees, bigh up on a mountain ledge; there was a considerable quantity of it just at the one spot." All these, as I said, were in flower in May. A very interesting Pyrenean Daffoldil has been sent to me with the bulb and leaves, but the flower nearly withered, by Mr. Frederick Townsend. In colour, shape, and size of flower, and in the massive breadth of the blunt leaves, it comes

nearest to the "lorifolius" of gardens, but the size may have increased in cultivation. Mr. Townsend says, "I gathered it from the top of a high mountain in the neighbourhood of Eagnères de Bigorre, Pyrenees. I believe it has been named N. muticus on French authority." (It is very distinct from the muticus of which I have spoken as synonymous with abscissus.) Mr. Townsend also sends "N. minor, from bushy ground on the hills above Grasse, Alpes martimes."

The flowers of this are past; it might from its leaves and general appearance be the N. nanus of gardens, but to know this I must wait till next spring. C. Wolley Dod, Llandudno.

Home Correspondence.

The South Kensington Shows. —As these Fruit and Vegetable Exhibitions will soon begin, and most probably will attract a large number of gardeners and others from various parts of the kingdom, I would like to suggest that the Council of the Royal Horticultural Society should not only make such arrangements with the Council of the National Health Exhibition as shall ensure that the Royal Horticultural Society exhibitors should get free access to the place of the show without suspicion or hindrance, but also that the former Council should freely advertise the particular place of access to their exhibitions, and the most convenient way to reach such access per rail or otherwise. If one special place of access for exhibitors not used by the National Health people could be had, it would be a great convenience. Last year, for instance, it was not unfrequently the case that exhibitors had to run the ganutlet of two or three Argus-eyed door-keepers and policemen, who seemed to regard us as undoubtedly suspicious characters, whilst if any one wished to remove or take out with him any box, basket, or other package, after he had staged his exhibits, the greatest difficulties were placed in his way, indeed the freedom ordinarily enjoyed in these matters was entirely wanting. If a place of access on show days, or indeed on all meeting days during the period of the National Health Exhibition, were placed in the charge of the employés of the Royal Horticultural Society, great convenience might result. Under any circumstances the more equitable and convenient these arrangements can be made, and the more widely published, the better will it be for exhibitors. An Old One.

Cottagers' Shows.—Allow me to express my great satisfaction with the remarks at p. 518 in your issue for April 19, on cottagers' shows, and the unsidom of some of the regulations attending them. The subject is pregnant of results. Many years ago, when I was first charged with the management of a horticultural society. I gave time and study to a careful investigation of the regulations for the organisation and direction of such bodies, and the exhibitions they were desired to promote; and I soon had reason to know that the harmony of the members and the successful development of competitive effort was in an inverse ratio to the character and extent of repressive and distrustful regulations. I came upon societies with regulations which, with their visiting committees, their formal declarations, and their many and minute restrictions, plainly declared their purpose to regard every man as a rogue, unless he could demonstrate his innocence; and what was the result? I found such societies given over to cabals, coteries, and cliques; united only in their purpose to evade regulations they instinctively felt to be degrading and unjust, though they might not be openly defied—but that achieved all unity ended. The leaven of distrust effectually leavened the mass, and every man sought the personal advantage which distrust of his neighbour and a sense of his neighbour's distrust inevitably sets up. Actions perfectly innocent viewed through such a distorting medium became ominous indeed of aspect, and as one passed from A. to B., C. to D., and so oo, innuendoes, suggestive questions, and more suggestive gestures, came thick as leaves in Vallombrosa. And what else could be looked for? Men subjected to arbitrary and unjust restriction seek naturally the defence of slaves. They lie to your face and plot to your deriment behind your back. At that time I was young in the management of an extensive mercantile and manufacturing house of business, with a large number of "hands" daily under my notice. Many of these were as fond of th

benevolent, but who fail to recognise the inevitable evils begotten of distrust. Such gentlemen would regard as an inexpiable injury any question of their own honour, but they seem to have no perception that that which is the most binding obligation upon them—an appeal to their honour—might be found of equal avail amongst those socially of a lower status. Then, from the point of utility, such regulations have always failed, and always will. They affect a supervision which is not, and cannot, be made effective; and thus, as you well say, they "lead to the very evil it is desired to keep in check." Regulations founded in distrust promote no honour; and I believe where such regulations prevail societies and their shows are a bane, not a blessing, to a community. We cannot gather Grapes from Thorns or Figs from Thistles. E. S. Dedwell, Oxford.

Trug Baskets.—I was glad to see attention called to these most useful implements, which really ought to be in every garden, as they are suitable for so many purposes, such as for carrying away from quarters to the barrows any weeds, stones, rakings, or other gatherings to be wheeled to the rubbish beap, or for disposal clsewhere. They are eminently fitted for this work, as they are not only strong and exceedingly durable, but their shape renders them well adapted for the purpose, as by giving the —caded trug a tip the contents slip out easily, and are at once discharged into any other receptacle. For planting Fotatos, Broccoli, Cabbage, &c., or rather carrying them for that end, and collecting dirty vegetables, such as Tunips, or other roots, nothing can be better; and as they may be had in all sizes no one need be without a trug that will suit them. Some places, however, they are difficult to get, and it would be well if all nurserymen and ironmongers kept them, as then gardens could be supplied without owners or those in charge being put to much trouble. 7, S.

Narcissus biflorus with More than Two Flowers, "Referring to the communications in the Gardeners' Chronicle of May 3 last, (p. \$8a). I beg to observe that irregularities in the number of flowers of the two-flowered Narcissus seem to occur very frequently. Among the various lots of this plant grown in my nursery there is one especially vigorous, in which this season were found perhaps a dozen or more plants with more than two flowers; some of them had as many as six and eight flowers, for the greater part placed individually on a broad flat stem, in some instances a couple of them with a syncarpons ovary. They look like a Narcissus Tazetta, with very large flowers, and seem to be a proof of the alleged origin of the hybrid. The greater part of the individual flowers is regular, but some flowers have a tendency to become double, viz., with eight or nine perianth divisions. They will do then, J. H. Krelage, Haartem, May 3.

A Remarkable Monstrous Fuchsia Blossom was sent to me a few days since by my friend, Mr. II. Bewley, which I enclose for your inspection. At first sight it appears as though the sepals had become partially leafy. The fact is that the corolla and calyx are normal or nearly so, but four bracts have been developed outside the calyx; the lower portion of each exactly simulates a sepal, while the upper extremity is green and leaflike, with well marked veins, and a serrate edge. Of the stamens four are perfect, two are slightly petaloid, many filaments only a staminode, and the eighth (without dissection), appears absent. There was only a single blossom; but if it could be perpetuated it would be a very pretty and striking variety. Greenvood Pim, M.A, F.L.S.

Peziza Disease of Potatos. — It may be of interest, as confirmatory of Mr. A. S. Wilson's observations, to note that the so-called Sclerotium varium, which last season was destructively abundant in Potato stacks, is now producing with me a complete fructification as Peziza postuma. The Sclerotia were placed in moist sphagnum in a warm house. The Peziza is more slender than that figured in the Gardiners' Chronicle for September 15, 183, but still thore can be but little doubt of their identity. P. selerotiorum (Sich.) I have not seen. Greenwood Pim, M.A., F.L.S.

Double Stocks. — In your issue of March 8 a writer on double Stocks describes the various ideas of amateurs as to the manner in which double Stock seed is obtained. Some eight years ago I received a mixed packet of seeds from Messrs. Henderson, St. John's Wood, and amongst the produce was a remarkably fine double white and some single whites of the same strain, which I wished to keep. I gave particular attention to some half-dozen plants of the single variety, keeping them well supplied with water, and encouraging luxuriant growth. As soon

as the flowers began to set I cut off all the sidebranches, leaving the centre spike only, and cut off a few inches of the top of this spike, leaving only ten or twelve seed-pods to ripen. This plan has always answered well, giving me about eighty or ninety per cent, of double flowers. Charles Ayres, Cape Town, South Africa.

Early-Flowering Shrubs .- The mildness of the Early-Flowering Shrubs,—The mildness of the season and the absence of cutting winds has been much in favour of early-flowering shrubs, which this season have been, and are many of them still, very heautiful, while others now opening promise to be equally good. Among the best, few, if any, surpass the different varieties of Ribes, the long, graceful racemes of which render them very striking objects in shrubbery borders or on lawns, where their exceedingly bright and showy colours make them look all aglow. Being so exceedingly bright and floriferous in either a lawc or small state, the wonder is that ingly bright and showy colours make them look all aglow. Being so exceedingly bright and floriferous in either a large or small state, the wonder is that they are not largely grown as pot plants and forwarded under glass, or allowed to come on naturally to supply the market for those who have to live in towns, as neat little specimens would form splendid window ornaments, that would quite brighten and light up a room. For greenhouse or conservatory decoration, too, nothing can be more acceptable, and the cootrast between such as R. sanguineum and Deutzia graculis would be both plessing and charming. Deutzia gracilis would be both pleasing and charming, as they associate well. Another fine plant for pot culture is Berberis Darwinii, and B. stenophyllavis also equally valuable. The richness and warmth of colour of the first-named is quite unique, and B. stenophyllavis manuranesed in the grosefulpers of its babit colour of the first-named is quite unique, and B. stenophylla is unsurpassed in the gracefuloess of its habit, as the shoots arch over and droop in the most easy manner possible. They are seen to the greatest advantage when the plants are growing on rockwork or high on a bank, where the masses of flower show off in a state of perfection. Many find great difficulty in transplanting these Berheris, but if moved just before growth commences, and the operation is conducted carefully, they may be litted with safety, but they should have a mulching, and be kept watered for a time after, till they get a fresh start. Cydonia japonica is also deserving the highest encomiums, as it is one of the earliest and most brilliant of shrubs, and if only tender would be considered quite choice in a stove, as no doubt would also the others mentioned above. The best situation for the Cydonia is against any light bricked house or wall, where, by having wires, it may be trained and supported and made to look well. Plants of it are likewise adapted for rockwork, where they make fine companions to the Bertell extended the safe of the late of look well. Plants of it are likewise adapted for rock-work, where they make fine companions to the Berberis stenophylla, and show off in bold contrast. Kerria japonica is rarely seen now, and yet it is one of the gayest of subjects, the long slender shoots being for a long time studded with bright golden blooms, which are perfectly double, and form quite large, loose-looking balls. The position where this Kerria does best is near or among other shruhs that are low-growing, as then it can get support for its weak stems and branches, and peep out from the tops. We have one growing in this way that has mixed itself up with a Rhododendron, and a remarkably fine looking object it makes. The Magthat has mixed itself up with a Khododendron, and a remarkably fine looking object it makes. The Magnolias again, such as conspicua and purpurea, should be in every garden, where if planted in warm sheltered spots they would be found specially valuable for cutting, especially the first-named, which is a beautiful pure white variety, having a most delicious perfume. M. purpurea is about the same size in its blosoms, which are not sweet scented, but stained on the outer part of the petals with a purplish hue. Planted on a south wall or other sunny situation, both kinds are in flower during March and April, and make a fine show. Weigelas amabilis and Van Houttei are charming shrubs, and both form splendid pot plants that show. Weigelas amabilis and Van Houttei are charming shrubs, and both form splendid pot plants that are of great value for forcing, as with very little heat they may be had in bloom during the early spriog mouths, when they make a magnificent show. For planting at the backs of flower boders in front of evergreen shrubs, there are few deciduous things equal to these Weigelas, which blossom so heavily as to quite weigh the shoots down. The double Gorse must not be forgotten, as no finer object can be seen than a bush of this now with the suo on it, which renders its blossoms clear, and makes the bright yellow look richer than ever. The way to get plants of this Whin is to buy them in pots, as it is next to impossible to transplant them without, the roots being of a long straggling nature devoid of all fibre, so that impossible to transplant them without, the roots being of a long straggling nature devoid of all fibre, so that when moved it is seldom they live. Pyrus malus floribunda will soon be in perfection, and a lovely object a standard or bush of it makes planted out on a lawn, where its drooping branches, laden, as they always are at this season, with their Cherry-like rose-tinted flowers, are sure to command admiration. J. S.

What is an Amateur?—In your last impression you refer to this vexed question, and while agreeing with your remarks on the subject, I was a little surprised that you did not refer to the verdict of the National Rose Society, which, to my humble judgment, effectually cut the Gordian knot, and laid to rest this disagreeable ghost.

The decision of the above-named society, as many of your readers will remember, was that any person who printed or published a list of plants and circulated such list, or advertised it in any way, with the view of disposing of such plants, was de facto a dealer or trader in them, and could not be regarded as an amateur. K.

Primula japonica.—I send you trusses of Primula japonica, in which you will see a very great difference, though the plants which produced them have been grown in pots under exactly the same conditions. Of about a score of plants I have only two that produce the finest flowers, all the others being much smaller and paler. There is not the least appreciable difference in the look of the plants. Would you kindly say which is the true form? [The large one. Ed.] I have a bed containing a large number of plants raised from seed last summer in the same batch as those which produced the blooms sent. These I shall watch with a great amount of interest, and I hope many of them will be of the finest form. John C. Tullack, Prileaux Place, Padstow, Cornwall, May 1.

Clianthus puniceus,—How seldom it is we now see this good old plant'; and yet it is, when well grown, one of the finest things it is possible to have for the pillar or rafter of any conservatory or greenhouse, as in either of those positions it may be trained or tied up loosely, and the lateral branches allowed to hang or droop down in their own natural way under the weight of their load. When thus viewed this Clianthus is a very striking object, as at almost every joint long racemes or clusters of its large a grand show. Cultivated in pots it is at best but a starveling, and is generally more or less affected with red-spider, to which it is very subject; but when planted out it seems to bid defiance to this pernicious insect, and bears handsome foliage, free from the rust so common when the above-mentioned parasite is on it. The soil Clianthus puniceus does best in is a good fresh fibry loam, which, for making the border, should be chopped up somewhat rough, and made tolerably firm over free drainage, when the plant may be turned out, and have its main roots liberated and laid in carefully, after which they should be covered and the soil watered to settle it properly and give the plant a fair start. By planting out at once a whole season's growth may be obtained, and after the flowering that is the time to prune or thin out, as the shortened branches soon break again and make a great number of shoots, all of which will bloom the following year, if matured by proper exposure, 7.5.

Old Potatos Becoming Black, — At pp. 489 and 586 reference is made to Champion Potatos being black. "J. 11, B.," alleges as the cause that the Potatos have been bruised in some way. Certainly a bruise will cause a Potato to get discoloured, just as is the case with an Apple or Pear. But there is a more mysterious cause than this, which has never yet been explained. The soil has something to do with this. Victoria Potatos grown on light sandy soil, if kept on till late in spring, get black when boiled. The only theory I can advance is that there is either an excess or a deficiency in the soil of one or more of the chemical constituents required by the Potato, hence the tubers share the same fate; or, it may be, that when pitted in quantity and stored for a time, the heat generated alters some of the chemical ingredients, and when boiled the black colour is seen. Victorias grown on red clay soil are perfectly white when boiled. I have never heard of the Champions going black before; they are largely grown here (Aberdeenshire), and there has been no complaint of this as yet. Can any of your correspondents give the analysis of a good table Potato? What is the difference of the analysis of a Magnum Bonum and Champion? Would the analysis show the one to be waxy in texture, the other free and meal?? A.

Cutting Pots and Pans,—many iosses result from these not being properly prepared and filled with suitable materials, and although the temperature of the propagating pit or house, together with the proper amount of moisture in the air and in the medium surrounding the cutting has more influence on the well-being or otherwise of the cutting than the soil or sand, still, if the filling is not judiciously done, success is by no means assured. Freference should be given to pass of 7 inches in inner diameter, by 3 inches deep, these being better than pots, which are usually so deep for small things that a considerable portion of earth or other material of an absorbent nature must be added, to the great danger of the cuttings rotting from excess of moisture in close proximity. For cuttings of hand-wood plants, or for any that do not strike very quickly, instead of the usual layer of broken bricks or potsherds, it is found to be a good practice to place a small post over the hole at the bottom, inverted, and so large that its base may be on the level with the rim of the pan. By this means the

placed is more equalised, danger from decay is much reduced, and if the hole is left open in the little pot the heat of the planging bed is permitted to escape into the house, thus adding to its warmth. Some kinds of plants are hastened in the formation of roots if the pot, instead of being inverted in the cuttingpan, stands on its base with the hole stopped, and be kept filled with clean water. When this pot has been put into its place, some broken bricks or crocks in a clean condition should be placed around it to the depth of from 1½—2 inches, and a covering of fresh moss over that. The pan is now ready to receive the kind of soil that is suitable to the plant to be propagated. It will be found in general practice that peat purely or peat and loam in varying proportions, and sometimes pure sand, are the best to use. Care should always be taken to add a little sharp sand to the soil used, and to use no manures, unless in the case of gross feeding plants, that may be required to stay in the cutting pans for some months, and even then such manure is better placed at the top of the moss, and therefore as distant as practicable from the cuttings. In the case of Ericas, Azaleas, Kalmias, so-called American plants, the sidings of peat, of about the size of a Hazel-nut, are better filling materials than finer soil, as in the operation of dividing and potting off the cuttings it will be found that these, if rooted into the peat, have each got its own little ball of earth, preserving the very fragile, delucate roots from injury. When the operation of filling is done the pots must to water them heavily after insertion, by so doing causing the soil to press so tightly around the cutting that rooting is rather hindered than forwarded thereby. Cattings requiring bell-glasses should have these just large enough to cover them, as it is found in practice that the smaller the amount of space enclosed the quicker the cuttings form roots, and as a rule they root much better in company with others than alone. It may sometimes ha

Littering Down Strawberries.—In most cases this work is left till much too late in the season, as by deferring it, not only do weeds grow, but the soil becomes dry, thus preventing the formation of fresh surface roots, which all Strawberries make at this season when they are growing under favourable conditions, and these roots are of the greatest importance to the plants, as they assist very materially in sending up the flower-spikes, and carrying a fine crop of fruit. These are only a portion of the advantages of strawing down early, as by doing it now, while there is little foliage on the plants, the litter may easily and close around the crowns, whereas, when left later, there is always a risk of knocking the blossoms or fruit about, and the operation must of necessity be much longer in hand. The straw we use is what has done other service, such as covering up beds of Seakele for the purpose of blanching the heads, or has been employed in the ice house, or for protecting frames, as after it has been moved about for either of those purposes the weed seeds are shaken out, and it becomes short through the gradual breaking up, in which shape it is just the thing for laying amongst Strawberries. If I had not a supply of this to fall back on I should not hesitate to substitute long stable manure, as this put on now would be washed sweet and clean long before any fruit would be ripe, at which time there aced not be the slightest fear of a taint. Where slugs are troublesome, which they are in most places, there is nothing equal for littering down Strawberries to bracken, that is, after it has been in other use, and is short, as then the ends and all split parts are very pointed or sharp, and no slug can travel on such a bed without cutting its throat, or becoming disembowelled, besides which the Fern, being loose and hollow, dries quickly, and the fruit lying on it is not so subject to rot. The market growers round about here use tan, and on light lands it seems to answer the purpose well and forms a good mulching,

Propagating Euphorbias, Ficus, &c. — Apropos of the note at p. 518, I would like to add my experience, which differs somewhat from the mode of propagation there described, at least in regard to the Euphorbia. Probably no two genera among stove plants exhibit more quickly the suffering they are undergoing after being severed from the

parent plant than do Euphorbia and Poinsettia; and on this account I always prefer a dull, close day or the shade of the evening for taking the cuttings, prior to which everything should be in readiness for their reception, so as to get them into the cutting-box as quickly as possible. In the note to which I refer at p. 518 it is stated that "It has been found by long ctice that the rooting process takes effect sooner, and with better results, if the viscous juices are allowed to ooze out." Having seen so many shrivel and droop to such an extent as never to regain the perpendicular I had thought the reverse, and had perpendicular I had thought the reverse, and had endeavoured to invent means to prevent the almost incessant bleeding to which these plants are prone. Having during the past three months rooted upwards of 300 Euphorbia fulgens without the loss of a dozeo in the whole, I think it may fairly be stated as no ordinary occurrence, and certainly worth imitating. I prefer cuttings (good stout ones) from 2 to 3 inches long, and as substantial as possible, which I immediately dip into some day for silversand; this simple process, owing to the as possible, which I immediately dip into some dry fine silver-sand; this simple process, owing to the gummy nature of the juice oozing from the cutting, forms, so to speak, a momentary plug, which pre-sently falls off on the cuttings being handled again, bleeding rarely ensuing; the cuttings always remain plump, and root freely in from fourteen to twenty-one days; they are then potted and kept close for a few days. When they have attained a height of from ro to 12 ioches, and the lower part of the stem has to 12 inches, and the lower part of the stem has become somewhat firm, I head them back to within become somewhat firm, I head them back to within 3 inches of the pot top. My earliest batches of these thus treated are now pushing forth eight or ten breaks each. This plan of stopping is, of course, only necessary where a quantity of bloom is required, and where an extended raceme would be less valuable. While speaking of Euphorbias I may mention that the several hardy species are equally fastidious in the cutting state. Some ten or twelve years since I pat in a batch of E. myrsinites; these remained in the handlights or upwards of ten months, growing slowly, but without forming any root, and being somewhat disgusted with them I threw them away and inserted another batch, which rooted, and were potted off in three weeks or thereabouts; the first batch were out to a joint, the latter torn off with a heel, the knife never touching them, and io this latter way all the herbaceous and alpine species and varieties may be propagated, though, of course, the majority come freely enough from seed. E. amygdaloides, fol. var., however, must be propagated. amygdaloides, fol. var., however, must be propagated by cuttings. With regard to the Ficus, where they are rooted from eyes, I find the following method to answer well: the most important matter in connecanswer weil; the most important matter in connection with the rooting process, or rather the growing process, is to get good plump eyes, such as are ready to start before being removed from the stock plant, and to ensure these the top shoot should be removed at least fourteen days before the eyes; this will cause the letter to become removed. the latter to become prominent in the axils of the leaves, and as soon as rooted will start into active growth if placed in a brisk bottom-heat of from 75° to 85°. Unless this method be adopted it will be found that many of the batch will remain for weeks tound that many of the batch will remain for weeks and even months after the pots are filled with roots before showing any signs of growing; and, indeed, when this takes place the growth is invariably weak in consequence of the somewhat unnatural and compulsory means by which it has been brought about.

Bougainvilleas,—The writer of the note on these in last week's number has omitted to state which variety he is treating of, which, in the interest of amateurs or young gardeners, is to be regretted, as they might be misled, and made to think that the remarks referred to B. speciosa instead of B. glabra, as I should suppose, for if the first-named were managed in the way stated, there would most certainly be but few if any flowers, as the shoots that would have borne them would be cut away at the pruning. Not only is this so, but it is more than likely that the plants might be lost if subjected to a lower temperature than that of a stove, for though E. speciosa may, under skilful hands, be safely wintered in an intermediate house, it must be thoroughly at rest before being placed there, and after that kept quite dry at the roots. Where I have always seen this superb variety do best is in places where it can have great beat above and below, with plenty of sun and light to check over-redundancy of growth and to harden and mature the young wood. At Swincombe, where it first flowered and caused such a stir, the plant was growing under these conditions, and I sometimes see one at Orwell Park similarly situated, on which the inflorescence is something astonishing, as yearly every shoot is laden with the most lovely coloured bracts, and hardly a green leaf visible amongst them. To flower B. speciosa in the style mentioned, it must not only be favoured in the way referred to, but the pruning must be done early, that is, as soon as the bruning fade, in order that the fresh growth may have a long season to solidify, as it is on that the blossoms come. B, glabra requives different treatment altogether, and though enjoying

the temperature of a stove, it will do well in a much lower heat, and may even be wintered in a greenhouse or shed along with Fuchsias and other things of that class. Instead of flowering on the wood made during the previous year, B. glabra blooms on the young shoots as they form, and therefore the pruning, thinning out, and all that is necessary in that way should be done before the plants start, and any excessively strong growths that show pulled or cut away after. As to restriction, all depends on the space the plants have to cover, or the size they are required in pots, but neither kind needs a great amount of root-room; and B. speciosa cannot well be too much pinched, as the smaller the wood, as a rule, the more abundant the flower, and it is an easy matter to feed with liquid manure should the plants be in want of such help. 7. S.

∯loqists' ∯lowers.

THE NEW DAHLIAS OF 1883 .- The month of May is that in which Dablia orders are given and executed, and it is well to ask, "What of the new varieties distributed last year?" The season was generally so favourable, the plants made such a clean and healthy growth, and produced flowers generally so good in quality, that they were seen to the best advantage. They were not quite so numerous in point of number as is generally the case; but they were generally acquisitions. Those forming Turner's batch were Buttercup (Fellowes), a yellow self, sometimes slightly tinged with red on the edges, rather flat, but a good and useful show Dahlia, with a fine high centre, and a capital habit of growth; Bessie (Turner), a very fine lilac self, of full size, very constant, perfect high centre, the outline not quite complete enough to make the flower faultless; it wants the fine outline of Criterion, only that the latter is so difficult to get in the best form; Bessie is, however, a variety very easy to get. Cecilia (Fellowes), a bright yellow self, when shaded quite a pale yellow, good petal and outline—a useful show flower with a good habit of growth; Consul (Fellowes), a pale orange suffused with yellow-a variety that was not seen to the best advantage in 1883, probably in illustration of a fact well known to cultivators for exhibition purposes, that certain Dahlias have their scasons of perfect and of indifferent development. Consul is quite distinct in colour, but nearly every flower "confused," as the growers term it. Emperor (Fellowes) is a large and imposing crimsonmaroon self, fine in colour, the petals a little irregular, but can be had very good; it was very fine in 1882, but out of condition last year; good habit, and when well developed most useful for show purposes; Lillie Ward (Burbury), a pretty white flower with a tinge of rose near the centre, good outline, centre a little low, fine petal, constant; habit of growth a little straggling. Ronald (Fellowes), a pleasing flower of an orange-buff colour, thoroughly constant, a variety that can be had good without any trouble; bright and attractive in appearance, very free, dwarf growth, and good habit. Rosetta (Fellowes) was seen in excellent form at the exhibition of the National Dahlia Society in September last, bright crimson in colour shaded with purple, dwarf habit, very free and fully constant, and can be had at any time.

A similar number of new varieties were sent out by Messrs. Keynes & Co., of Salisbury, in May last year. They are all of excellent habit, dwarf, free, throwing their flowers well above the foliage. There is very little in these respects to find fault with in the varieties distributed by Mr. C. Turner, and it was noticeable in the case of all the new varieties that there has been a decided advance towards a better habit of growth in the plants. The Salisbury flowers are as follows :- Condor, buff shaded with orange-a flower that was very promising in 1882, which fell off in the centre last year, and has therefore proved wanting in constancy: should it fail as a show variety it will always be very effective as a garden flower-it is very pleasing, and of a good habit of growth; Hope is a very pretty rosy-lilac self, large in size, fine petal, ontline, and substance, high centre, constant and reliable—likely to make a first-rate show flower; Imperial, deep purple with a brighter shade, is a large back-row flower, good petal and outline-perfect in the centre, but with a somewhat loose habit of growth; Mrs. John Laing is a charming French white flower, but when unshaded is heavily tinted with lilac-small petal, good outline

and centre, and very pretty; Seraph is a variety of very dwarf growth, but evidently late, blush in colour -a flower highly thought of by Mr. John Wyatt, and one that earlier in the season came very fine indeed; and Sir Garnet Wolseley, reddish-chocolate in colour -a well formed, large, and useful flower, that will prove quite constant.

Mr. C. Turner did not send out a single new lancy Dahlia in 1883, but Messrs. Keynes & Co. distributed the following: - Madame Souberye, rosy-lilac, of a very pleasing shade, striped with carmine, fine form, and a good exhibition variety; Mandarin, yellow, striped and mottled with purplish-crimson, a good constant flower; Miss Annie Malsome, yellow, with white tip, thoroughly constant, very free, of excel-lent dwarf babit; and Rebecca, lilac, striped with crimson, an extra fine variety, fine petal and outline, and very constant.

The new flowers of 1883 will be found generally worthy the reputations of their raisers. At this period of time, when the Dahlia as a show flower seems to be as nearly perfect as it is possible to get it, the advance is necessarily very slow. But there is an advance, and there is a large demand for plants. New varieties may not realise the high prices they did a few years ago, but exhibition flowers are still sought after and grown by many cultivators up and down the country. R. D.

Obituary.

WE greatly regret to hear of the death, on the 3d inst., at Segrez, of M. ALPHONSE LAVALLEE, the President of the National Horticultural Society of France. In this country M. Lavallée was best known by his very valuable publications on ornamental trees. His Arhoretum Segrezianum is the best and most carefully elaborated recent catalogue of trees and shrubs cultivated with so much care at Segrez, and the accompanying Icones, of which several parts are published, are likewise of the highest value. In his park at Segrez M. Lavallée had got together a collection which for extent and careful nomenclature was without a rival. The planting was begun in 1857, but it was three years later before any scientific classification was attempted, when the trees and shrubs were systematically arranged in lines, avenues, and groups, so placed as to be most in conformity with the natural requirements of the several trees. Each species is carefully named and represented generally by numerous specimens. The shrubs are arranged in squares and borders, the total number of species being estimated at over 4000, without taking note of the numerous garden varieties. Herbaria, catalogues and plans were prepared to facilitate research and study, and in all these matters M. Lavallée had the assistance of the late Prolessor Decaisne and of M. Hérincq. In this manner the nomenclature and synonymy were carefully worked out, to the great advantage of science. The history of this unique establishment is given in the prelace to the Arboretum Segrezianum, from which we made extracts at the time of publication. M. Lavallée's latest publication consisted of a series of lithographic illustrations and descriptions of the large-flowered species of Clematis. M. Lavallée was a frequent correspondent, but was averse to publication, and in view of some remarks made upon the alleged shortview of some remarks made upon the alleged short-comings of nurserymen, and on some questions of nomenclature, it is to be regretted that he did not more frequently put himself into communi-cation with English students, and hence, per-chance, have avoided the publication of some opinions which we doubt not, from the conver-sations we were privileged to have with him on various creations, he would have been discorded to making occasions, he would have been disposed to modify. The latest illustration of this is his opinion as to the origin of Clematis Jackmanni, to which we called attention some time since. Be this as it may, horticultural science has lost by the death of M. Lavallée, one of its most enlightened and hardworking promoters. Our sympathy must needs be deepest his fellow countrymen and members of the horticultural and agricultural societies of France, but we can but feel that the wider world of horticulture and agriculture in general, has sustained a loss, the gravity of which it is not easy to estimate. His loss at this period is the more unfortunate, seeing that as President of the chief horticultural society of France he was eagerly exerting himself to promote the success of the forthcoming

International Exhibition in Paris, in May next. It is to be feared that the sudden death of the President will very seriously embarrass the work of those engaged in the elaboration of the details of this important scheme. M. Lavallée had for some time been in delicate health, and, as we learn, had passed the winter at Cannes, and the announcement of his return to Segrez reached us only a day or two before the note announcing his death. M. Lavallée was a man of enlightenment, an enthusiastic promoter ol horticulture and agriculture, an earnest student, and a courteous, well-bred gentleman. We can appreciate the gravity of his loss, and most unfeignedly tender our condolences to his fellow countrymen and

- The numerous readers who enjoyed Mr. H. A. BRIGHT's scholarly "Notes from a Lancashire Garden," published at intervals in our columns, will be grieved to learn that no more communications from his pen can be laid before them. Mr. Bright died at his residence, Ashfield, Knotty Ash, near Liverpool, on the 5th inst. After a distinguished career at Cambridge, where the removal of the disabilities which formerly prevented Nonconformists from graduating enabled him to take his degree, Mr. Bright became a partner in a well-known Liverpool firm of Australian merchants and ship-owners, of which his father had been the head. From a Liverpool paper we learn that the first impor-tation of Australian gold to this country was made through the medium of Mr. Bright's firm. But it is here rather with the cultivated man of taste and learning that we have to do. Mr. Bright was eminently a man of culture; he acquired and assimilated much of what was best in literature and art, and, as it were, radiated or diffused it abroad for the benefit of others. His "Notes on a Lancashire Garden," though of little importance from a technical point of view, were simply delightful. The reader felt himself strolling through a charming garden with a still more charming companion. With him the library consisted of no mere rows of dusty shelves of unread dulness, but, if we may so speak, it lived and sunned itself in the garden. The literature of horti-culture can, Indeed, ill afford the loss of such an

· Information has also reached us of the death on April 23, at Leeds Castle, Maidstone, of Mr. FREDERICK CORPOULD, aged fifty-two years. Mr. Corbould had previously been gardener at Tandridge Court, Godstone, and Crosswood Park, Aberystwith, and being of a kind and amiable disposition was much

— We are sorry to hear of the death, on Monday morning last, of SARA ANNETTE, wife of Mr. George PRINCE, of Oxford, aged fifty-three years.

The Meather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON, FOR THE WEEK ENDING WEDNESDAY, MAY 7, 1884.

DAY.	BARON	Т	EMPI TI	ERAT NE /	URE LIR,	OF	trica duc fr Glai Tab	rome- l De- tions om sher's les 6th ition.	Wind.	Ť.	
MONTH AND DAY.	Mean Reading Reduced to 32° Fahr.	Departure from Average of 18 years.	Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 50 years.	Dew Point.	Degree of Humidity. Sat. = 100.	Average Direction.	RAINFALL
May	In.	In.		۰			0				In.
1	29 63	-0.14	54.0	36.5	17 5	46.0	→ 3.8	41.3	85 {	S.W.; S.S.W.	0,0
2	29.52	- 0.2S	55.0	44-5	10.5	49-3	- o.8	44 1	83	S.S.W.	0.0
3	29,22	-0.55	58.0	43.5	14.5	49 2	- 13	42 2	77	S.W.	0.1
4	29.22	- o. 54	56 o	41.0	15.0	48.3	- 2.5	38.3	68 {	W: s.w.	0.0
5	29,38	- o.38	57.0	36.1	20.9	44-5	- 6.7	41.0	88 {	W.; N.W.	0.2
6	29 68	-0.07	57 · S	43.8	131.7	48.6	- 3.0	39.6	71	W.: WNW.	0.0
7	29 85	+011	55.0	37 S	17.5	47-3	- 4-4	41.0	79	W.s.W	0.0
Mean	29.50	-0 26	56. r	40.4	15.7	47.6	- 3.2	41 1	79 {	W. s W.	0 9

May 1 .- Fine bright morning, dull afternoon, occasional rain

at night.

2.—Dull day, slight shower at 2.30 r M. Frequent showers
during the evening.

3.—Rato nearly all day. Fine clear pight.

4.—Bright sunshine at times, occasional showers. Fioe

May 5.—Fine tright morning, severe thunderstorm, with hail and snow from a F.M. to 4 F.M. Rain during the eventual strings of the strings of

LONDON : Atmospheric Pressure .- During the week LONDON: Atmospheric Pressure.—During the week ending May 3, the reading of the barometer at the level of the sea decreased from 29,77 inches at the level of the sea decreased from 29,77 inches at the beginning of the week to 29,62 inches by 3 P.M. on the 29th, increased to 29,82 inches by midnight on the 28th, decreased to 29,73 inches by 3 P.M. on the 39th, increased to 29,75 inches by 3 P.M. on the 39th, increased to 29,70 inches by 9 P.M. on the 1st, decreased to 29,70 inches by Midnight on the same day, increased to 29,70 inches by midnight on the same day, increased to 29,70 inches by 9 A.M. on the 2d, and was 29,36 inches by the end of the week.

The mean reading of the barometer for the week at the level of the sea was 29.70 inches, being 0.21 inch lower than last week, and 0.25 inch lower than

inch lower than last week, and 0.25 inch lower than the average of the week.

Temperature. — The highest temperature in the shade in the week was 59', on April 30; the highest on the 28th was 50'.2. The mean of the seven high day temperatures was 55'.3.

The lowest temperature was 34'.5, on April 29; on May 2 the lowest temperature was 44'.5. The mean of the seven low night temperatures was 38'.9.

The greatest range of temperature was 24', on April 29; the smallest was 10'.5, on May 2. The mean of the seven low night temperatures was 38'.9.

The greatest range of temperature was 24', on April 29; the smallest was 10'.5, on May 2. The mean of the seven daily ranges was 16'.4.

The mean emperatures were — on April 27, 43'.2; on the 28th, 44'.1; on the 29th, 45'.7; on April 30, 48''.4; on May 1, 46''; on the 29th, 45''.7; and on May 3, 49''.2; and these were all below their averages by 5'.5, 4''.8, 3''.4, 1'', 3''.8, 0''.8, and 1''.2 respectively.

respectively.

The mean temperature was 46°.6, being 5°.6 higher than last week, and 2°.9 lower than the aver-

age of the week.

The highest reading of a thermometer with blackened bulb in vacuo placed in the full rays of the sun was 120°, on the 29th. The mean of the seven

sun was 120°, on the 2911. The mean of the seven readings was 94°.5.

The lowest reading of a thermometer with its bulb placed on grass was 26°, on April 29. The mean of the seven readings was 31°.3.

Rain.—Rain fell on five days to the amount of 0.39 inch, of which 0.19 inch fell on April 27.

ENGLAND: Temperature. - During the week ending ENGLAND: Temperature,—During the week ending May 3 the highest temperatures were 62° at Prestoo, 61° at Cambridge, 60°,6 at Nottingham; the highest at Bradford was 51°,6, at Botton 52°,8, and at Sheffield and Leeds 53°. The general mean was 56°,5. The local temperatures in the week were 31°,2 at Cambridge, 31°,3 at Nottingham, 31°,6 at Wolver-hampton; the lowest at Liverpool was 30°,4, at Leeds 37°, and at Preston 36°,5. The general mean was 34°,7.

was 34°.7.

was 34.7.

The greatest ranges were 29°.8 at Cambridge, 29°.3 at Nottingham, 25°.5 at Preston; the smallest ranges were 14.1 at Liverpool, 15°.6 at Bradford, and 16° at Leeds. The general mean was 21°.8.

The mean of the seven high day temperature Combinance of the control of

highest at Brighton, 57°.5, at Truro 57°.4, at Cambridge 56°.9; and lowest at Bradlord, 49°.6, and at Bolton and Sunderland 50°.2. The general mean was 53°.2.

was 53.22.

The mean of the seven low night temperatures was highest at Truro, 42°3, at Plymouth 41°.6, at Liverpool 41°.1; and was lowest at Hull, 37°1, at Cambridge 37°.3, and at Bolton 37°.5. The general

mean was 39°,5.

The mean daily range was greatest at Cambridge, 19°,6, at Brighton 17°,1, at Nottingham 16°,7; and was least at Bradford, 10°,1, and at Liverpool and

was least at Draidott, 167, and at Liverpool and Sunderland 10°,5. The general mean was 13°,7.

The nean temperature was highest at Truro, 48°,2, at Brighton 47°,4, at Blackheath 46°,6; and was lowest at Bolton, 42°,3, at Bradford 42°,9, and at Wolverhampton 43°,3. The general mean was 48° 8°

Rain .- The largest fall was 1.18 inch at Bolton, 1.05 inch at Sheffield, 0.98 inch at Nottingham; the smallest fall was 0.26 inch at Truro, 0.37 inch at Brighton, and 0.39 inch at Blackheath. The general mean fall was 0.72 inch.

SCOTLAND: Temperature,-During the week ending May 3, the highest temperature was 55°.9, at Aberdeen; at Edinburgh and Paisley the highest was 51°.3. The general mean was 52°.8.

The lowest temperature in the week was 29°, at Perth; at Paisley the lowest temperature was 36°.2.

Perth; at Passley the lowest temperature was 36°.2. The general mean was 32°.1.

The mean temperature was highest at Aberdeen and Greenock, 44°; and lowest at Perth, 42°.5. The general mean was 43°.3.

Kain. — The largest fall was 2.08 incbes, and the smallest fall was 0.21 inch at Aberdeen. The general mean fall was 0.79 inch.

JAMES GLAISHER, F.R.S.

Answers to Correspondents.

BOTTLE-BRUSH: G. Schaschke. Several New Holland plants are popularly called Bottle-brushes. The one you have is probably a Metrosideros. They all require temperate-house treatment.

CUCUMBERS: Amateur. In the absence of full par-ticulars (and you give us almost none), we cannot say with certainty what causes the peculiar spotted appear-ance of the leaves. Perhaps there was turpentine, or paraffin, in your lamp-black. — Tyro. Certainly the Cucumber disease, and in an aggravated form.

DENDROBIUM WARDIANUM: J. R. M. Many thanks, but unsuitable for illustration.

ERRATUM.—In the report upon the Auricula show, p. 588 of your last issue, the new seedling green-edged variety shown, through a clerical error, is credited to Wm. Brockback. Esq., whereas it was exhibited by Mr. R. Lord, of Todnorden.

IMANTOPHYLLUM: A. S. Imatophyllum is wrong, and Clivia is best of all.

INSECTS: C. E. F. A smashed fragment of an insect we cannot identify.—A Subscriber. The larvæ of the common Cranefly, or David Longleys (Tipula oler-acea). They feed on the surface of the soil, after dark, and should be hand-picked thes.

dark, and should be hard-picked thee.

NAMES OF PLANTS: W. Craik. 1, Ornithogalum pyrenaicum. Send the others when in flower.—Thos. Yours. Omithogalum pyrenaicum. Your other question next week.—Constitut Rander. In the absence of the constitut Rander. In the absence of the constitut Rander. In the absence of the constitut Rander. In the absence of the constitution
ODONTOGLOSSUM PESCATOREI: F. Mill. A very prettily spotted variety, that will no doubt improve as the plant becomes stronger.

PANSY: Revoland May. Your seedling Pansy has every-thing to recommend it for pot-culture. It is large in size, of good shape and substance, clear canary-yellow in colour, with maroon blotch. With such a habit and constitution as you describe it ought to be worth send-ing out. We think you would do well to put it before the Eleval Committy. the Floral Committee

ROSE MARÉCHAL NIEL: John C. Tallack. Your plant must be in robust health to produce so many flowers in pairs. As a rule they are only produced single.

CATALOGUES RECEIVED.

STEPHEN BROWN, Weston-super-Mare - Bedding Plants.

HEINRICH STRAUSS, Ehrenfeld, near Cologne—Orchids and Bromeliads,

Communications Received.—H. J. C.—T. A.W.—J. G. B.—
Amateur.—T. H. P. D.—S. C.—J. C. & Co.—S. & S.—D.
McD.—E. C. C. D.—H. E.—H. C.—E. V. B.—I. R. S. V.
—D. C. P.—J. Ralph.—E. W. G.—I., L.—J. H., B.—R. R.
W.—J. H., G.—J. R.—J. S.—W. G.—W.—Lucumbe Ricc.
& Co.—F. v. M.—F. C., I.—S. M.—J. T. B.—Dr. Ihne.—
C. G. A.—S. Low & Co.—M. F.—T. F.

Markets.

COVENT GARDEN, May 8.

VERY little alteration to quote, the market being still much depressed. James Webber, Wholesale Apple

Vegetables.—Aver.	AGE RETAIL PRICES,
s. d. s. d.	s. d. s. d.
Artichokes, Globe,	Herbs, per bunch o 2- o 4
per doz 30-50	Horse Radish, bund. 3 0- 4 0
- Jerusalem bush. 4 o	Lettuces, Cabbage,
Asparagus, English,	per dozea 1 6
per 100 80	- French Cos, each o 6
- Spanish, bundle 2 6	Mint, green, bunch o 6
- Toulouse, burd. 3 o	Mushrooms, p. baskt. 1 0- 2 0
Perpignon, bund. 1 o	Onions, per bushel 7 0
Beans, French, p. 100 1 6	- Spring, per bun, o 6
Beet, per doz r o	Parsley, per bunch o 4
Cabbages, per doz r o	Peas, per quart 3 6
Carrots, per bun 0 4- 0 6	Radishes, per doz 1 6
- New French, per	Rhubarb, per bund. 0 4- 0 6
bunch I 0	Salsafy, per bundle o 8
Cauliflowers, Eng-	Seakale, per punnet r 6
lish, dozen 2 0- 3 0	Small salading, pun, o 4
Celeriac, per root o 4- o 6	Spinach, per bushel 2 6 Sprue, French, bund. 1 6
Celery, per bundle z 6- z 6	
Cucumbers, each o 6- 1 o	Turnips, per bun 3 6
Endive, French, per dozen 2 0	- New 1 3
Carlie per lb 0 6	- 1

Potatos.—Kent Magnums, 80s. to 100s. per ton; do., Regents, 80s. to 100s.; Champions, 50s. to 65s.—New: Jersey,

FRUIT.-AVERAGE WHOLESALE PRICES.

Apples, 4:-sieve. 3. d. s.d. Pine-apples, Eng., b. 16-20 Cobs, per 100 b... 125 0-750 0 S-St. Michael's, each 20-8 0 S-monay, per case. 10 0-14 0 Peaches, per doc. ... 6-0-12 0

CUT FLOWERSAVERAGE	SE WHOLESALE PRICES.
s. d. s. d.	
Abutilon, 12 bunches 2 o- 4 o	Narcissus, 12 bun 2 o- 6 o
Anemones, 12 bun 2 0- 4 0	Nemophila, 12 bun. 1 6- 2 o
Arum Lilies, 12 blms. 3 o- 6 o	Pelargoniums, 12 spr. o 6- 1 o
Azalea, 12 sprays 0 6- 1 0	- 20nal, 12 sprays 0 6- 1 0
Bouvardias, per bug. 1 o- 1 6	Pæony, 12 blooms 1 o- 2 o
Calceolaria, 12 sprays 1 0- 1 6	Polyanthus, 12 bun, 2 0- 4 0
Camellias, per doz 2 o- 4 o	Primroses, 12 bun o 6- 1 o
Carnations, 12 blms, 1 o- 3 o	Primula, double, bun. 1 o- 1 6
Eucharis, per doz 4 o- 6 o	Rannocu'us, 12 bun. 3 o- 6 o
Forget me-not, 12	Rhodanthes, 12 bun. 6 0-12 0
bunches 2 0- 6 0	Roses (indoor), doz. 2 o- 6 o
Gardenias, 12 blms 1 o- 3 0	- coloured, doz 2 o- 6 o
Heliotropes, 12 sp o 6- 1 o	Stephanotis, 12 spr. 2 6- 4 o
Hyacinths (Roman),	Tropæolum, 12 bun, 1 6- 3 o
12 sprays o 6- 1 o	Tuberoses, per doz., 1 o- 1 6
Lapageria, white, 12	Tulips, 12 blooms 3 0- 9 0
blooms 3 0- 6 o	Violets, 12 bunches o 6- 1 o
- red, 12 blooms., 1 o- 3 o	- Parma, per bun. 5 o- 6 o
Lilac, white Fr., bun. 6 o- 8 o	Wallflower, 12 bun . , 2 0- 4 0
Lily-of-Valley,12 spr. 0 9- 1 6	White Jasmine, per
Margnerites, 12 bun. 3 0- 6 0	bunch o 6-10
Mignonette, 12 bun, 3 0- 0 0	

SEEDS.

SEEDS.

LONDON: May 7.—The seed market to-day was very thirdy attended, with scarcely any business doing, in first the season must now be considered as about over. Values all round show no material change. Spring Tares have become exceedingly scarce, no Konigsbergs are now obtainable, and only a few Brunswick Gores remain unsold. Canary and Hemp seed are both somewhat cheaper. For blue Peas there is an improved euquity. The trade for feeding Linseed continues very languid. John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.

CORN.

CORN.

At Mark Lane on Mooday the Wheat trade was weak, Saxonka, Australian, and some of the Indian Wheats were quite 6d, lower than on Monday sernight. Other descriptions of foreign were not quotably altered, and the limited sales of English Wheat were at about the rates of the previous Monday. No quotable change occurred in flour, which met an exceedingly slow demand. Parley of all kinds realised firm rates, and there was a fair demand. Beans and Peas were stardy in value. Maize remained the same as on Friday. Oats were held for steady value, but purchases were mona a there was a fair demand. Deaths and the same as on Friday. Oats were held for steady value, but purchases were upon a small scale.—On Wednesday transactions in Wheat and flour were weaker, although they were too restricted to test quotations. Barley was fairly firm. Beans and Peas showed steady value, and Maize was quiet.—Average prices of corn for the week ending May 3:—Wheat, 37t. 4d.; Barley, 30t. 6d.; Oats, 20t. 5d. For the corresponding period last year:—Wheat, 42t. 10d.; Barley, 2st. 4d.; Oats, 2st. 4d.; Barley, 3st. 4d.; Cats, 2st. 4d.; Cats, 2s Barley, 32s. 4d.; Oats, 23s. 2d.

CATTLE.

At Copenhagen Fields on Monday, with rather a smaller supply, the beast market was a little better than on the Monday previous that the beast market was a little better than on the Monday previous that the better than the beat supplies that the better prices in some instances. Calves brought about late values, and pigs were dull of sale. Quotations:—Beasts, 4t. to 5t. and 5t. 4d. to 5t. 8d.; calves, 4t. 8d. to 6t. 6d.; sheep. 4t. 8d. to 5t. and 5t. 4d. to 5t. and 5t. 4d. to 5t. and 5t. 4d. Thursday's trade was much about the same as Monday. Beasts and sheep sold quietly, at that day's prices. Lambs were steadier, and there was no change in calves or pies. or pigs.

POTATOS.

The following are the average prices at market:—
Magnum Bonums, 6os. to 90s. per ton; Champions, 40s.
to 6os.; Regents, 5os. to 6os.; Schoolmasters, 70s.;
Victorias, 70s.; Roses, 40s. to 50s.; Snowlakes, 40s.;
Flourball, 45s.; new Pottatos, 11s. per cwt. The
imports into London last week consisted of 84 baskets m St. Nazaire, and 5001 packages 61 boxes from

COALS.

The following are the prices current at market during the week:—East Wylam, 155; Walls End—Hetton 155. 6d.; Hettons Lyons, 145; Lambon, 155.; Wear, 145.; East Hartlepool, 145. 9d.; South Hartlepool, 155. 3d.; Tyne (unscreened), 111.; Tees, 155. 9d.

DANIELS BROS.'

FLOWER SEEDS

We can highly recommend the following Choice Flower Seeds as being really fine strains and well worthy of cultivation: Per packet s. d.

Auricula choicest Alnine Antirrhinum majus, splendid mixed Canterbury Bells, Dean's new bybrids

Canterbury Bells, double, roos, every fine ...

Carnation, splended double, from stage flavers, a
remarkably fine strain ... 22. 6d, and

Carnation, Perpetual or Tree ... 22. 6d, and

Carnation, broicest, yellow varieties

Calceolaria bybrida, splendid mixed 12 6d, and

Cineraria bybrida, splendid mixed 12 6d, and From Mr. H. Brown, Langford, July 2,..." The CALCEOLARIA and CINERARIA seed that you seat me last year turned out splendadily; the flowers were the admiration of all who saw them; many of the CALCEOLARIA blooms were quite 2½ inches across."

Gloxinia hybrida, Daniels' superb mixed tiully large-flowered varieties. . . 15. Hollyhoek, Chater's fine double Myosotis dissitifiora, the finest . . . Pansy, Daniels' Improved Striped, very fine

From Mr. A. J. BARNDON, Snedland, Rochester, April 6.—"The BLOTCHED PANSIES I had from you were splendid. I took First Prize at Malling Flower Show last year."

Primula, Chiswick Red, splendid
Primula, alba magnifica, very fine
Primula, Daniels' choicest mixed

N.B., April 5. "The two packets of PRIMULA Seed 1 got from you last year were the finest Jever grew; and I have now grown Primulas for sevenieen years."

ever ten pears."

Polyanthus, choicest mixed

Polyanthus, Mageata King, very brilliant. 1

Polyanthus, choicest Gold-laced 1s. 6d. and 2

Stock, Brompton giant scarlet. 1

6d. and 1 6d, and 1 Wallflower, single, blood-red Wallflower, single, Harbinger. . . .

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Collections of the following
an inspection:—
Chrysanthemums,
Phloxes,
Delphiniums,
Fuchsias,
Pansies,
Vuolac

Dahlias, Pentstemons, Coleuses. Coleuses, Pelargonium*, Mimuluses, Clematises, Carnations and Picotees.

Also a large assortment of all kinds of choice BEDDING PLANTS, which can be supplied at moderate prices.

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GALVANIZED POULTRY FENCES, Pea and Seed Guards, Pea Trellis, Wire Trellis for Training Plants, Wire Lattice for Windows, Skylights, &c.

GARDEN ROLLERS, Liquid Manure Pumps, Garden Engines, Swing Water Carriers, Galvanized Cisterns, &c.

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purchased seon tons of the very best quality, the Association is
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sample bags, at 6d, per bag, Very bast, selected for Orchid,
65 Fer bag; twenty factors, very bast, selected for Orchid,
65 Fer bag; twenty factors, very bast, selected for Orchid,
65 Fer bag; twenty factors, very bast, selected for Orchid,
65 Fer bag; twenty factors, very bast,
65 Fer bag; twenty factors, very bast,
65 Fer bag; twenty factors,
65 Fer bag; twenty factors,
65 Fer bast, very bast,
65 Fer bast, very bast,
65 Fer bast, very bast,
66 Fer bast, very bast,
67 Fer bast,
67 Fer bast, very bast,
67 Fer bast,
68 Fer bast,
6

DESCRIPTION OF SAN I, Inch. per insuler, 122, on, per 27 on, on per 27 on, on per 1852 YELLOW BETCHWORTH LOAM, 12, per bushel. LEAF MOULD, 12, for per bushel. PEAT MOULD, 13, per bush of Garden, 12, per bushel. COMPOST for Potting or for Garden, 12, per bushel. SPHAGNUM MOSS, 72, 65 per bag.
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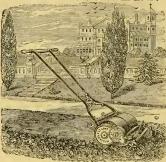
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PEAT, best Brown Fibrous, from 5s. per sack.
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SILVER SAND, Coarse, zs. 6d. per bushel.
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6 feet high, 3s. per yard run; 7 feet high, 3s. 6d. per yard run-



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Mesh		L	ight.		Med	liom,		St	rong.		Strong		
		5	. d.		s.	d.		s.	d		5.		
2 in		. 0	2		0	2		0	31		0	4	
15 in		. 0	2		0	3		0	31		0	4	
ı in		. 0	3		0	31		0	4 1/3		D	5	
I in		. 0	53		0	7		0	9		I	0	
🖁 in		. 0	73	٠.	0	9		0	101		-	-	
U	sual v	ridths	kept i	n Sto				, 30	, 36,	and a	8 io		
7-		4	C.		,	2.3	TOTAL STREET		**** 1		- 1 -		

in, mesh kept in Stock, 72 in. wide. This will be found very convenient for erecting Poultry Yards.

All Widths charged at Proportionate Prices.

SOFT GALVANISED TYING WIRE, 6d. per pound.
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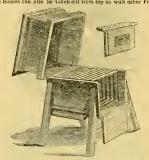
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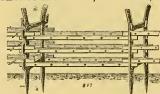
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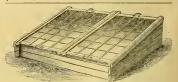
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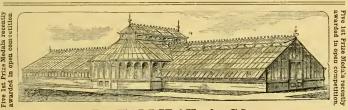
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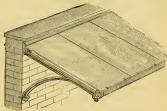
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McRobie, Head Gardener, Bromesberrow Piace,
Ledbury, can with confidence recommend his late Foreman,
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—A., 3, Canterbury Terrace, Canterbury Road, Catford, Loodon.

GARDENER (HEAD WORKING), where when another is kept : London objected to.—Age 30, married when several control of the control

ARDENER (HEAD WORKING).—Middleaged, married, with small family; thoroughly experienced in all brauches of the profession; six and a half years in last situation, four and seven years in previous situations. Can have excellent recommendations.—T. G., Ivery & Sons, West Street,

GARDENER (HEAD WORKING); age 26, Viscount Midleton, recommends his Foreman, C. Cuttis, to any Gentleman requiring a good practical Gardener. Nearly four years in present situation. Kederence permitted to Viscount Gardener of the Comment of the Co

(TARDENER (HEAD WORKING), where TARDENER (TEAD WORKING), whether more are kept. Age 27, arrived, two fullers ithoroughly memory and the company of the company

GARDENER (HEAD, or SINGLE-HANDED).
—Age 24, married, one child; understands the treatment of Vioreines, Stove and Greenhouse Plants, and Flants
and Kitchen Gardeung. Highest references given. State
wages, &c.—W. G., Post-office, Ayr, Scotland, N.B.

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GARDENER, or GARDENER and (youngest ro); has good practical experience in Gardeniog, also knowledge of Timber and Underwood Plantations, with Estate Repairs. Five and s half years with present employer, and twelve with previous temployer.—F. C. BAILEY, South Lodge, Cokethorpe Fair, Witney.

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—Age 21: can be highly recommended.—W. E., The
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They instantly relieve and rapidly cure Asthma, Coatumption, Bronchius, Coughs, Colds. Shortness of Breathma, Charles, Philegm, Pains in the Chess, Rheumatism—and taste pleasantly, Sold at zs. 1,947, and as z, 97, ber box.

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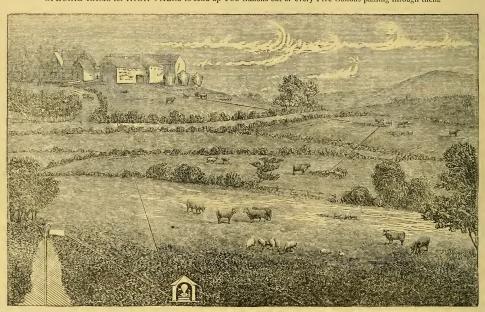
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Made in Sizes to Raise from 300 to 500,000 Gallons per day. Will Force to a Height of 1500 feet. SPECIAL RAMS for HIGH FALLS to send up Two Gallons out of every Five Gallons passing through them.



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RECENT AND OTHER TESTIMONIALS.

RECENT AND OTH

From Mr. A. J. RUTHERFORD, Agent to C. F. H. Bolckow, Ssq., Estate Office, Ma. ten
Hall, Middlesboreugh, September 26, 188,—"Dear Sir,—I am glad to say that the Rams you
put down on the Hambledon Estate, for Mr. C. F. H. Bolckow, are working very well. You
undertook, with 6 gallons per mionet, to send up 1500 gallons aday, and with enough water to
work the Rams at full power, 200 gallons ad day. With a supply of 11½ gallons per minute they
entility ago 200 gallons, and whoe working full power 1000 gallons per day are sent up to a height
of nearly 400 feet.

From Mr. HENRY ROBINSON, Esquiere to the Stockport District Waterworks Co.,
September 8, 1883.—"Dear Sir,—I can now report well of the two Hydraulic Rams we have
fixed to your instructions for the supply of Disely Village, 4,000 gallons per day as when you
have some since the fine the supply of Disely Village, 4,000 gallons per day was the quantity
you promised they would force to a height of 68 feet, but on testing them I am convinced that
to the belief that a more sample and efficient pump cannot be found."

From Captain TOWNSHEND, Wincham, February 10, 1877.—"In answer to your inquiry
am glad to say the Hydraulic Ram you sent me in November, 1875, is working exceedingly
well, and gives no trouble. It will work when quite immersed, as it has been several times
to say the Hydraulic Ram you sent me in November, 1875, is working exceedingly
well, and gives no trouble. It will work when quite immersed, as it has been several times
From I. SPENDER CLAAL Sea, Ford Manor, Lingfield, Surrey, Angent 9, 180.—" In

gations per day, actiough you only promised solicon.

From J. SPENDER CLAY, Esq., Ford Manor, Lingfield, Surrey, August 9, 1880.—"In reply to your letter of inquiry I am glad to be able to say that the two Hydranile Rams which you fixed here are working, satisfactorily, and that cut of 13 gallons 3 quaria per minute, the maximum yield of the spring, they deliver to the top of my house, outstant a full mile from the spring, 4 gals. 13. For minute, or 3 roy galions per 2 shous, being 1 so gallons above the quantity you guaranteely.

From Mr. JOHN ARCHBOLD, Engineer to Messys, Barber, Walker & Co., Eartwood, Notts, October 21, 1889.—"I am glad to inform you that the Hydraulic Ram you fixed for Thomas Barber, Eaq, whilst working with a fall of 30 feet, and forcing to a height of 90 feet, through 200 yards of delivery pipe, is working exceedingly well, throwing up 9 pms out or every 35 pints passing through it, thus giving 77 per cent. of useful effect."

passing inrough it, inus giving 77 per cent. of useful ellect.

From Mr. T. BARHAM FOSTER, C.E., 23, John Dallon Street, Manchester, October 12, 1833.— Dear Sir, -1 have tessed the Ram you contracted to fix on the Husts Estate, Stafford-shire, for James Chadwick, Esq., to force 1,000 og allons per day of spring water through 800 yards of delivery pipe, to an elevation of sol feet, whist worked by liver water falling 5 feet 9 inches, and am pleased to hind that when at full power the Ram sends up 13,000 gallons per day to the height and distance named, and though the Ram is now adjusted to work at only three-fourths its power, the work done represents over 57 per cent, of useful effect.

From HORATIO R. B. PELLE, E.g., Commissioner to Sir Michael Shaw Stewart, Bart.,

Montain Manufacture, A. Agusti 13, 1852.— I am glad to say the Ram you fixed at Castle
Farrish Control of the Control o

proportion to an elevation of 75 feet.

From FRED. J. TURNER, Esq., Agent to His Grace the Duke of Portland, Mansfield Woodhouse, Agent 50, 1883.—"Dear Sir,—I have much pleasure in stating that the Hydraulic Rams which you erected has year for His Grace the Duke of Portland, a Lyadhurst, near Mansfield, and at Stedburs, Ayribate, are wooding ery well, and they are most satisfactory in every way. and at Stedburs, Ayribate, are wooding they well, and they are most satisfactory in every way. Carbotic Park, Sisser, October 1, 1883.—"Dear Sir,—When you surveyed the site at Sackville Park, Sisser, October 1, 1883.—"Dear Sir,—When you surveyed the site at Sackville Park, Sisser, October 1, 1883.—"Dear Sir,—In resources available. My bailify repeared the ground to your instructions, and in twelve days from the arrival of your men, the Ram was in operation, sending up so per cent. more water than you promised to a height of 101 feet, and distributing a supply to a farm and several cottage on the way. I have pleasure in recording my entire approval of the work."

From Sir A. WOODIWISS, The Pastures Derby, January 15, 1883.—"Dear Sir,—In reply to your enquiry, I have much pleasure in informing you that the Hydraulic Ram you supplied and fixed for me in July last is working as satisfactorily as could be wished, and has fully realised my expectations, and I have no hesiation in saying it is a decided success."

From Sir ROBERT MRNZIES, Batt, of Meniese, Rannech Lodee, Rannech, August

realised my expectations, and I have no hesiation in saying it is a decided success."

From Sir ROBERT INFX/IES, Bart, of Menizer, Rennach Lodge, Rennach, August
20, 1850.—"The Hydraulic Ram which you haed to me to supply water to Ranaoch Lodge
and Camesurich, two houses thee-quarres of a mile apart, is a complete success. The
elevation of the two houses are different there is a regular supply of 7

elevation of the two houses are different there is a regular supply of 7

Rem took the place of one previously tried on the same spot, and which did not succeed, and was
in fact a complete failure."

to fact a complete failure.

From Mr. WILLIAM LAIT, Architect and County Surveyor, Compton Venney, Warwick,
January 16, 1882.—"I have much pleasure in stating that the Fatent Hydraulic Rain I had from
you for the Rev. J. Cardwell Gardener, of the Vicarage, Bullers Marstan, and which you fixed
there, is, I consider, remarkably successful, as indicated below:—4120 gallons of water per day
are passing through the Rain with a descent of 13 feet 8 inches. Out of this small quantity
robo gallons are sent up to a height of 41 feet, showing 79 per cent. of useful effect, and the mase
of its working is so slight as to be almost insudible."

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Editorial Communications should be addressed to "The Editor;" Advertisements and Business Letters to "The Publisher," at the Office, 41, Wellington Street, Covent Garden, London, W.C. Printed by WILLIAM RICHARDS, at the Office, 61, Wellington Street, Parish of St. Paul's, Covent Garden, in the said Guotty.—SATURDAY, May 10, 1884, Agent for Manchester—John Herwood.

Agents for Scotland—Messrs. J. Menuris & Co., Edinburgh and Glasgow.

CHRONICLE. GARDENERS'

Established 1841.

No. 542.—Vol. XXI. SERIES.

SATURDAY, MAY 17, 1884.

Registered at the General Price 5d. Post-office as a Newspaper. Post-FREE, $5\frac{1}{2}d$.

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Crioum zeylanicum
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Odontoglossum Wilckeanum
Pæonies, single flowered
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WEDDESDAY, May 21. Cates open a to 7 o'Clork
Tickets to be obtained at the Gardens, or by Post, price 5z.
each, or on the day of the Exhibition, 7z. 6d. each. Tirkets are
issued only to Fellows of the Society or their Vouchers.

GREAT FLOWER SHOW of the SEASON, at crystal Palace, S.E., FRIDAY, May 23, and SATURDAY, May 24, Admission to Palace on Friday, May 25, 75, Cd., or by Ticket purchased before that day, 55, to assurday, May 24, 42, 64, or by Season Ticket on either day.

THE GRAND INTERNATIONAL Palace, Sydenham, S.E., on WEDNESDAY, THURSDAY, and FRIDAY, October 8, 9, and 1c, 1884. For Schedules, apply (ecclosing stamp) to P. McKINLAY, Esd. Headley Lodge, Croydon Road, Auerley, S.E.

TINNEAN SOCIETY,
Burlington House, Piccadilly, W.
The ANNIVERSARY MEETING of the Society will be held at the Society's Apartments on SATURDAY, May 24, at 3 o'Clock percisely, for the Election of a Council and Officers for the ensuing year, and other Business.

B. DAYDON JACKSON, Secretary.

POYAL BOTANICAL and HORTICUL-TURAL SOCIETY of MANCHESTER and the NORTHERN COUNTIES. The GRAND NATIONAL HORTICULTURAL EXHI-BITION of 1834 will open at the Gardens, Old Traiford, on MAY 30, NEXT. at 21M. ORE THOUSAND FOUNDS IN PRIZES. For Schedules apply to the uodersigned.

BRUCE FINDLAY,
Royal Botanic Gardens, Manchester.
N.B.—Entries close May 23.

N.E.—Entries close May 23.

GRAND EXHIBITION of HARDY PLANTS, commenting on FRIDAY, May 30, and following days.

FECTIVE HARDY PLANTS for above, part money given upon agreement, remainder upon delivery, every subject to be exhibited in the name of those who supply them.

Every convenience will be given to persons who wish not to sell, but exhibit.

J. F. JOHNSON, Secretary.

HULL BOTANIC GARDENS,
HORTICULTURAL EXHIBITION,
JULY 2, 3, and 4. Schedules and particulars of

PHILIP MAC MAHON, Curator and Secretary.
Botanic Gardens, Huil.

HORTICULTURAL EXHIBITION, to be held at the BOTANICAL GARDENS, SHEF-FIELD, JULY 21 and 25. Prize Schedules may now be obtained on application to Mr. I. EWING, Curator. Mr. J. EWING, Curator.

BIRMINGHAM CHRYSANTHEMUM SOCIETY.

SPECIAL NOTICE of ADDITIONAL PRIZES for CUT BLOOMS of CHRYSANTHEMUMS, to be given at the Show to be held to the Town Hall, Birmingham, on WEDNESDAY and THURSDAY, November 19 and 20:—43 ELOOMS, 22 incurved and 14 Japanese, £10, £7, £4, £2. 22 ELOOMS, 12 incurved and 12 Japanese, £10, £7, £4, £6. 21 ELOOMS, incurved, £5, £6, £6. 22 ELOOMS, neurone, tool less than 6 varieties, £1, 151, 105, 122 ELOOMS, reflexed, distinct varieties, £1, 152, 105. 12 ELOOMS, reflexed, distinct varieties, £1, 156, 105. Schedules may be obtained on application to

Sherborne Road, Birmingham, J. MORLEY, Secretary,

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New Hilbstrated PLANT CATALOGUE for 1884 is
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Establishment for New and Rare Plants, 536, King's Road, Chelsea, London, S.W.

PELARGONIUMS, in 40-pots, showing bloom, best Show and Decorative varieties, 95. per dozen, 655 per 100. dozen, 658, per 100. GARAWAV AND CO., Durdham Down, Clifton, Bristol.

Two Acres of Daffodils.

BARR AND SON'S Grounds, Lower Tooting;
TURSDAYS, THURSDAYS and SATURDAYS.

ROSES in Pots.—All the best New (1884) and These world-famed Roses cannot fail to give the greatest satisfaction. Descriptive LISTS on application.

RICHARD SMITH AND CO., Worcester.

Centaurea candidissima.

B. MAY offers a very fine stock, in large
60's, at 20s. per 10c. Cash with order.
Dyson's Lace Nursery, Edmonton.

PECIAL OFFER of ORCHIDS, WN. GORDON, New Plant and Bulb Importer, Nurseries, Amyand Fark Road, Twickenham, Middlesex. City Office: 10, Unlum Street, London, E.C. See Advertisements in Gazetterer Cohomicke of Marcha, April 5, 12, 2 and 19.

S Q U E L C H AND BARNHAM, Long Market, Covent Garden, London, W.C., are open to receive emisignments of GRAPES, TOMATOS, CU-CUMBERS, STRAWBERRIES, and CHOICE FLOWERS.

SQUELCH AND BARNHAM, giving personal attention to all consignments, they are thus enabled to obtain the HIGHEST MARKET PRICE.

S Q U E L C H AND B A R N H A M. ACCOUNT SALES sent daily, and CHEQUES forwarded weekly.

BANKERS and TRADE REFERENCES.
BASKETS and LABELS supplied.

WISE AND RIDES, FRUIT and FLOWER SALESMEN, COVERT GARDER, W.C., have special facilities this season for the SALE of MARKET PRODUCE of the best quality.

BASKETS, BOXES, LABELS, and Directions for Packing

WANTED, MARECHAL NIEL and NIFHETON ROSE GRAFTS. Quote price and

MPHETOS ROSE GRAFTS. Quote price and The LIVERPOOL HORTICULTURAL CO. (JOHN COWAN), Limited, Vineyard and Nurseries, Garston, near Liverpool.

WANTED, Caladiums.
PRINCESS of WALES,
PRINCESS TECK, and GOLDEN QUEEN.
State size of Eulys, and price each or per dozen to

Goes plumosus.

WANTED, tall plants, 8 to 10 feet high.
ROBERT GREEN, Floral Establishment, Crawford Street,
Bryanstone Square, W.

Bryanstone square, w. ANTED, Large PALMS and Large Pots of FLOWERING and FOLIAGE PLANTS, such as EUCHARIS, PANCRATUM, IMANTOPHYLLUX ASPIDISTRA VARIEGATA, &c, or cash or in EXCHANGE, Description and Frice to J. POUNCE, Pounce's Nursery, Hendon, near London.

WANTED, Large PALMS and DRA-CÆNAS, suitable for Furnishing, purposes; Marichal Niel ROSE BLOOMS, BUCHARIS, Crimson CLOVE, and other Chnice CARNATIONS. Gardet, W.C.

SUTTON'S PRIZE GRASS SEEDS.

SUTTON'S GRASS SEEDS for Lawns, &c.

SUTTON'S GRASS SEEDS for Pastures. CUTTON'S CATALOGUE, Post-free.

S U T T O N A N D THE QUEEN'S SEEDSMEN. READING, BERKS.

TIGHTY THOUSAND CLEMATIS in pots, of all the finest Double and Single varieties (some of the flowers of which become to inches across, and are of every shade, from pure white to the darkest purple) for Climbing and Bedding, from 12st to 42s, per dozen, strong plants. Descriptive

LIST on application.

RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

Japanese Maples, Orchids, &c.

UR JAPANESE MAPLES

orc now no full brauty. Our Vexillarium house has
choice and beautiful arctites. A visit to impect these is
respectfully solicited.

NEW PLANT and BULB COMPANY, Lion Walk, Colchester.

HERBACEOUS and ALPINE PLANTS.— Now is the season to plant and insure success. Write for R, H VERTEGANS' Pocket CATALOGUE, and make your choice from his unrivalled Collection. Chad Valley Nurseries, Edgbaston, Birmingham.

Forest and Ornamental Trees and Shrubs. THE LAWSON SEED AND NURSERY COMPANY (Limited), Edinburgh, have an immense stock of the leading kinds of Seedling and Trausplanted FOREST TREES and SHRUES, &c.—all in healthy condition and prices moderate. Special offers on application.

National Dablia Show, 1883.

PAWLINGS BROS, beg to state that out of Twenty Prizes given to Amateurs Thirteen were taken by Customers of theirs. They can supply the finest 12 DAHLIAS in colitivation, free by Parcels Post, on recept of Pot-tofice Order for 3r. CATALOGUES free. Paragon, White Queer, Constance, Glare of the Garden, Juaren, to the Trade at kw prices.

HIVE THOUSAND PELARGONIUMS to offer: in Bloom, rost, per roo; in Full Bud, 8.12, per roo; later, pos. and gos, per roo Really fines stuff, all in plots. Cash or references from unknown correspondents. TURNER BROS., Nurserymen and Florats, Green Hill Nursery, Allerton, Liverpool.

CHARLES TURNER recommends the present as the best time for Purchaing the above. Strong Plants of Show, Fancy, Bouquet, Single and Bedding Varieties, now ready. CATALOGUES on application. The Royal Nurseries, Slough.

Established nearly a Century.

A M U E L S O L O M O N AND C O.,
Accrinomers and Commission Statesmen, The Pineapple, Central Avenue, and Long Market, Covent Garden
Market, WC., beg to inform their Senders and the Public in
general that liesy not have the state of the state o

GERANIUMS — GERANIUMS for Bedding.—Good Plants to name, various colouis, 2s. per dozen, 1ss. per 100, in pots or our, as preferred.

LOBELIAS, and AGERATUMS, in pots, 1s. 6st. per dozen,

105 per 100; from stores, as per 100.

CALCEOLARIAS, Vellow, in pots, 2s. per dozen, 156; per 100; eut of pots, 1s. 6d, per dozen, 105 per 100.

WM. CLIBRAN ANO SON, Oldfield Nursery, Altrincham.

GRAPE VINES.—A fine stock in leading varieties, Planting and Fruiting Canes. Apply to FRANCIS R. KINGHORN, Nurservman, Richmond

To the Trade, A SPARAGUS, Giant, 2 and 3-yr. For price apply to JAMES BIRD, Nurseries, Downham.

A SPARAGUS. — This delicious vegetable does not require half the expense often incurred. For directions see Illustrated Seed List, free. Strong roots, 2st. 6sd. per 100; extra strong, ditto, 2-yr. old, 3s. 6sd. per 100.

C A B B A G E P L A N T S.

Strong autumn sown.

ROBINSON'S CHAMFION DRUMHEAD CABBAGE PLANTS, *s. 64 per 1000.

JOHN PERKINS AND SON, *s., Market Square, Northampton,

SALES BY AUCTION.

Priday Next—New Class Erections.

By order of Mr. C. Causley, who is reliaquishing this part of MESSRS. PROTHEROE AND MORRIS

Will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E. C., on FRIDAY, May 23, two newly exceted (Span Rool and Leant-of CREENHOUSES, several BOMES, 1998).

BOMES - Whole glazed on Causley's patent system with 27002, glass.

21-0z. glass.

May now be viewed at Mr. Causley's Works, No. 1½,
Downs Park Road, Shacklewell, five minutes walk from Dalston
Junction and Hackney Downs Stations. Catalogues may be
had of the Auctioneers. 67 and 68, Cheapside, E.C.

Priday Next.-Mexican Orchids.

MESSRS. PROTHEROE AND MORRIS

And large Buyers.

MESSRS. PROTHEROE AND MORRIS

Co. to SELL by AUCHION, at their Central Sale Rooms, 67

and 68, Cheapaide, E.C., on FRILAY NEXT, May 23, at 67

of grand masses of CATTLEYA CITRINA, LÆLLA AUTUMNALIS, LANCES, LALBIDA, ODONTO-GLOSSUM NEBULOSUM, O. CORDATUM, O. DOMININUM, O. ROSSI MAJUS, O. CREVANTESI, EPIBERO, THE THE CONTROL OF THE C

Friday Next.

Priday Next.

By order of Messrs. Shuttleworth, Carder & Co., 191, Park Road. Clapham, S.W.

MESSRS. PROTHEROE AND MORRIS Will Sell by AUCTION, at their Central Sale Rooms, on the Sell by AUCTION, at their Central Sale Rooms, Cartiley A TRIAN & (thegue varieties), ODUNTOLIOS-SUM CRISPUM (Alexander), and HOULETIA species—SUM CRISPUM (Alexander), and HOULETIA species—

all in the best condition.

On view morning of Sale, and Catalogues had.

Leytonstone, E.
IMPORTANT UNRESERVED SALE of BEDDING and GREENHOUSE PLANTS.

MESSRS. PROTHEROE AND MORRIS
will SELL by AUCTION, out he Pemises, American
Nursery, Leytonstone, E., on SATURDAY, May 2e, at 2 o'Clock precisely, about 15,000 BEDDING and GREEN-HOUSE PLANTS, remarkably healthy and well-growe. Full particulars in Catalogues, which may be had at the Nursery and of the Auctioneers, 67 and 68, Cheapside, E.C.

Flowering Orchids.

MESSRS PROTHEROE AND MORRIS
beg to announce that their next SALE of ORCHIDS
in Flower will take place on TUESDAY. May 27, entries for
which should be made not later than MONDAY, May 19.
67 and 68, Cheapside, E.C.

The Royal Exotic Nursery, Onslow Crescent, South KENSINGTON, S.W.
By order of the Mortgages—Important to Decorative Florists and Others.—Occupying an unrvalled position in the heart of a neighbourhood which of recent years has rapidly become the favourite residential district at the West-Eod of Loadon.

become the Luvurite residential district at the West-Load of Landon.

MEDSRS. PROTHEROE AND MORRIS

Lare favoured with instructions to SELL by AUCHION, on the Premises, on WEDNESDAY. May 28, at re a Clack the Control of the Control

Onslow Crescent, South Kensington, S.W.

Onslow Crescent, South Kensington, S.W.

In the High Court of Justice, Chancery Division.—In re The General Horticultural Company (John Wills, Limited.)

MESSRS. PROTHEROE AND MORRIS

will SELL by AUCTION, on the Premises, the Royal Exotic Nursery, Onslow Crescent, S.W., a minute's walk from the South Kensington Railway Station, on WEDNESDAY day, without reserve, pursuant to an order of the Hon. Mr. Justice Chity, the Judge to whose Court the cause is attached, the whole of the STOVE and GREENHOUSE PLANTS. Comprising magnificent examples of Kentia Balmoreana, Seaforthas, Latanias, Dicksonia antarctica and cthers, for exhibition and fursishing; Langaperia alba, thousands of smaller tion and fursishing; Langaperia alba, thousands of the Auctionees and Valuers, or and of the Auctioneers and Valuers, or and of the Auctionee

Richmond, S.W.

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M. ESSRS, PROTHEROE AND MORRIS

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Thursday Next.—(Sale No. 6662.)

Thursday Next.—(Sale No. 6662.)

DENDROBIUM BRYMERIANUM.

M.R. J. C. STEVENS will include in his SALE by ACCTION at his Great Rooms, 38. King Nay 22, ten fine masses of DENDROBIUM BRYMERIANUM, all in perfect bealth.

On view moraing of Sale, and Catalogues had.

The Down House Collection of Orchids.

M.R. J. C. STEVENS has been favoured with instructions from Sir William Marriott to SELL by AUCHTON, at his Great Rooms, 38, King Street, Covent Garden, W.C., and TUESDAY, 39, Did Street, Carlon of ORCHIDS. The plants have been selected with the greatest care for a period of fifteen years, during which time the inferior varieties have been severe times which time the inferior varieties have been severe times which time the inferior varieties have been severe times which time the inferior varieties and they are in grand health. The whole Collection will be sold without the slightest reserve, and nothing disposed of prior to Sale. Amongst other face the strength of t

, Skinneri, fine plaut , superba spleudens, fine , gigas, fine var. Cymbidium eburoeum

Cypripedium Maulei
, Stonei
Dendrobium Lowii
, nobile giganteum
, Wardi, old var.

in flava
in purpurata
superbiens
Odoatoglossum Coradinei
crispum gutatum
crispum gutatum
polyanathumssum
Ruckerianum
Orcidium maeraahum, fine
plant and var.
Vanda cortiles in quantity
trees aurea, rate
tium, fine var, rate

Odontoglossum vexillarium, fine var., &c.
Ou view mornings of Sale, and Catalogues had.

Thursday Next.—(Sale No. 666s.)

MOST VALUABLE IMPORTATIONS.

M.R. J. C. STEVENS will SELL by
Garden, W.C., by arder of Mr. f. Sander, an EH; Sare,
Garden, W.C., by arder of Mr. f. Sander, an EH; Sare,
Garden, W.C., by arder of Mr. f. Sander, an EH; Sare,
Graden, W.C., by arder of Mr. f. Sander, an EH; Sare,
Graden, W.C., by arder of Mr. f. Sander, an EH; Sare,
Graden, W.C., by arder of Mr. f. Sander, an EH; Sare,
Graden, W.C., by arder of the Mr. f. Sander,
Graden, W.C., by are depended in portation of CATTLEYA DOWLANA, in superb masses,
with fine eyes and healthy leaves; a grand to CC. SKINNER,
including many magnificent masses, one of them being the
finest in existence; this specimen is in particularly grand condition. A splendid and, we believe, quite new type of C.
MOSSI, F., two plants of C. SRIV, W. GODITOGLOSSUM
CRISTEDII, VANDA INSIGNIS, the true species; the
very rare V. LIMPATA, and AERIDES HUTTOM. As
a fine lot of FLOWERING and other ORCHIDS; among the
latter the grandest importation ever offered of the rare DENDROBIUM LEUCOLOPHOTUM, one of the very finest of
the whole genus, origina of Sale, and Cristones hed-Thursday Next .- (Sale No. 6662.)

the whole genus, On view morning of Sale, and Catalogues had.

On view morning of Sale, and Catalogues had.

Important Sale of Established Orchids,
on account of Expiry of Lease.

M.R. J. C. STEVENS will SELL by AUCGarden, W.C., on WEDNESDAY and THURSDAY, June 18
and 19, at half past 12 of Code precisely end of the Many of the Ma

flora
,, Harryana lutea
,, atrosangumea
,, Bull's-blood
,, rosea
Odontoglossum Andersonia-

"Bluntii Cattleya Morganæ

Cattleya exoniculus , Trianæ alba Lælia Williamsii , elegans , anceps Dawsoni , grandiflora Vanda Lowii Deodrobium Griffithiauum , Schroderi , Walkeriauum

On view mornings of Sale, and Catalogues had.

Hammersmith.

Hammersmith.

IMPORTANT ANNUAL SALE of well-grown BEDDING and GREENHOUSE PLANTS, &c.

TO OWNESS Of ORNABERTAL GROUNDS, GENTLEMEN, FLORISTS, NURSERVINEN, and OTHERS.

M. F. J. A. SMITTH Has received instructions from Mr. F. Herridge to SELL by AUCTION, on the Premises, "The Nursery," 47, Fulham Palace Road, Hammersmith, W. (wear the Broadway, and within three minutes' walk of three Railway Stations), on TUESDAY ANTO 100 of the Company Stations, on Stations of the Company Stations of TUESDAY ANTO 100 of the Company Stations, on TUESDAY ANTO 100 of the Company Stations of the Company Statio

Orandous, Display.

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Catalogues may be had on the Premises; and at Mr. J. A. SMITH'S Acution, Land and Estate Offices, 58, King Street East, east of the Broadway, Hammersmith, W.

Acacia, Apperley Bridge, near Leeds, Yorkshire;
Ten minutes' walk from the Appetley Bridge Station on the
SALE of PLANTS, by Order of the Trustees of the Will of
Sir Heary William Rupley, Bart., deceased.
MESSRS. T. S. BEST AND HARRIS give
deas attached to the residence, "Acacia," on WEDNESDAY
May 95, at 11 O'Clock, the collection of the Web Nessbay
May 96, at 12 O'Clock, the collection of the Web Nessbay
May 10 of the Web Nessbay
May 11 of the Web Nessbay
May 11 of the Web Nessbay
May 12 of the Web Nessbay

condition.

The Side (price 2d tadogues will be ready one week previous to the Side (price 2d each, without which oo one will be admitted to the gardees, the amount to be returned to purchasers), and price of the amount to be returned to purchasers). Bridge Street, Bradford; also by post on written application. The Flauts may be viewed on the morning of Sale, and previously by an order to be obtained from the Auctioneers.

Woolston, near Southampton. IMPORTANT UNRESERVED SALE .- 5000 BEDDING PLANTS.

MR. F. W. ABRAHAM will SELL by AUC-M. K. F. W. ABRAHAM will SELL by AUC-TION, on WEDNESDAY, May 21, at haft-past 3 o'Clock prampt, at the Woolston Hotel Pleasure Grounds fremoved for convenience of Sale), a splendid assortment of BEDDING PLANTS, in face variety. Catalogues at the Hotel, and free of the Auctioneer and Valuer, 17, Tanfield Road, South Groydon, and Goldworth, Woking, Survey.

Church Road, Kingston, Portsmouth.

GREAT UNRESERVED SALE.—6000 BEDDING
PLANTS, Geraniums (named), Heliotropes, Lobelias,
Ageratums, Iresines, Dahlias (Single and Double). Coleus,
Calcolarias, Verbeans, 'Petunias, Mesembyanthemums,
Alternautheras, &c., all in the best condition for immediate
plauting.

MR. F. W. ABRAHAM, HORTICULTURAL Archivers and Values, 27, Tanfield Road, South Crydon, and Goldwarth, Woking, Surrey, will SELLthe above by AUCTION, on SATURDAY, May 24, at half-past 3 O'clock prompt. Catalogues of Mr. H. BRANSBURY, Red House Hotel; or of the Auctioneer, as above.

Whittington Nursery, Highgate Hill, near the

"Archway" Tavern.
IMPORTANT and IMMEDIATE SALE.

IMPORTATI and IMMEDIATE SALE.
TO Nurserymen, Florists, and Others.

MESSRS. WALKER BROS. in conjunction
with Mr. HAND, Auctimeer, of Cryodon, have received
instructions to SFLI by PUBLIC AUCTION, on TUES
DAY and WEDNESDAY, May 97, and 8, at 11 for 12 o'Clock
POPTICISELY, the LEASE, GOODWILL, and GLASSHOUSES
of the above, in One Lot, together with the valuable Stock
of BEDDING-OUT PLANTS, HORSES, CARTS, VANS,

&c. May be viewed. Particulars of R. H. WATKINS, Esq., Solicitor, 10, King's Arms Yard, Coleman Street, E.C.; of Messrs. WALKER BROS., 5, Theobald's Road, Hollow, W.C.; and of Mr. HAND. 85, High Street, Croydon, and Canterbury Rand, Folkestone.

Canterbury Road, Folkestone.

Stove, Greenhouse and Bedding Plants, Two Alderney COWS, Two HEIFERS, PIGS, SOWS, BOAR, and OUTDOOR EFFECTS.

MESSRS. C. D. FIELD AND SONS will SELL by AUCTION, consequent on the Expiration of the Lease and Sale of the Freehold, on the Premises, The Priory, Lewisham, S. E., on FRIDAY, May 20, at 1 c Clock, the STOVE, GREENHOUSE and BEDDING FLANTS and LIVE STOCK. The Plants include fine Palms, Cottons,
1, Bread Street, Cheapside, E.C.

The Celebrated Piltdown Nurseries, Sussex, 2½ miles from Uckfield Railway Station, on the Tunbridge Wells and Lewes line.

A very valuable FREEHOLD PROPERTY, lately belonging to Mr. James Mitchell, deceased, whose unrivalled Collection of Roses has given these Nurseries a wide-spead reputation. It consists of a suitable and well-built thouse excellent Stabling for Five Micross, data that the second stabling for Five Micross, data Stabling for Five Micross, data Packing Steel, 25 feet, by 17 feet; Stable Yard, Greenhouse, 26 feet by 17 feet; Stable Yard, Greenhouse, 26 feet by 18 feet; Five brick-built 14-jilly 1181; Clerk's Office, Store-room, Potting-room, Lofts, very large Rain-water Tank, two Wells, Food, and Nursery Touund, comprising in the whole about 15 Acres, well sheltered, and interspersed with fine-grown Laurel, Eox, Quickest, and white Hedges, there are numerous specimens of Evergreens, consisting of Retinosperas, Piceas, Abes, Cupressus, Flowering Shush, Fruit Trees, a very choice collection of Dwarf and Standard Roses, and the finest Avenue of well-grown Araucarias in England. The property has a frontage of over half a mile to most excellent roads, and commands very charming securely will over the property of the stable properties.

Seenery, with views of the Southdowns at over 20 miles.

MESSRS SOUTHERDEN, MORRIS AND
PROPERTY OF THE ROEN, MORRIS AND
PROPERTY OF SALE by AUCTION, at "The Star" Hotel,
Lewes, on TUESDAY, June 2, at half-past 3 o'Clock in the
afternoon punctually. The Stock, including Trees, Tools,
Manures, Rose Boxes, Pits, Frames, Greenhouse, Wood,
Manures, Rose Boxes, Pits, Frames, Greenhouse, Wood,
Poratos, Labour, &C., has been valued by a practical man at
that price, or by valuation, to be made in the usual way, which
ever the purchaser may prefer.
Possession of the whole may be had on completion of the
purchase. The property may be viewed by making application
to Mr. BARNETT, on the Premises. Particulars and conditional conditions of the property may be viewed by making application
to Mr. BARNETT, on the Premises. Particulars and conditional conditions. Solicitor, Lewes; and of the
Auctioneers, at Lewes and Hailsham.

FOR SALE, a genuine SEED BUSINESS, situated in a good Market Towo. In consequence of the death of the Proprietor. Principally Agricultural. Established upwards of sixty years. Long Lease. Incoming from £1500 to £2000.

For further particulars apply to Messrs. PROTHEROE AND MORRIS, 67 and 68, Cheapside, London, E.C.

ANO MORRIS, 67 and 68, Cheapside, Loodon, E.C.

VALUABLE Small NURSERY GROUND, CONSERVATORY, GREENHOUSES, and KLURIST STOCK.

TO BE SOLD, by Private Contract, with early possession, all that SMALL NURSERY, occupying about a quater of an Acre, situate on the north-west side of the Turopike Road leading from Yeovil to Crewkerne, now in the occupation of Mr. John Scott, the proprietor, as a branch of his Meritott Roy Roberts, 1900,

tageous terms.
For permission to inspect the Hendford property, apply to Mr. WILLIAM WILKINS, at the Nursery; and regarding the Seed and Florist Business and Stock, to Mr. JAMES GEORGE, Manager, at the Shop; and for other information, either to Mr. SCOTT. Royal Nurseries, Merriott, Creweroe, or to Messrs. SPARKS and BLAKE, Solicitors, Crewkerne.

To Small Capitalists, &c.

N SALE, the UNEXPIRED LEASE and
STOCK of a ROSE NURSERY, situated in one of the
best districts in the North of England—A Acres of Land, four
forcethouses and other very useful buildings,
food, oldApply X. S. Gordeners' Chronicle Office, 41, Wellington
Street, Straod. W.C.

To Horticultural Builders.

THE LIVERPOOL HORTICULTURAL
CO. (Jonn Cowan), Limited, owing to the great increase
in the other branches of their business, are prepared to LEASE
their WORKSHOPS, which are fitted up with all the necessity
appliances for carrying on the Horticultural Building and Heating
Business. Machinery and Stock to be taken at valuation.
This affords an excellent opportunity for any one who may be
inclined to embark in this business. Full particulars on application to the MANAGER, The Vineyard, Garston, Liverpool.

To First Growers, Market Gardeners and Seedsmen.

TO BE LET, on LEASE, So ACRES of corolled GARDEN LAND, who stainled Gardeners and Seedsmen. To BE LET, on LEASE, So ACRES of corolled GARDEN LAND, who stainled Euidiogs, at Peterborough, situated almost adjoining the Great Northern and Middand Railway Stations.

The above has been worked for the past ten years by a Market Gardener and Seedsman; S acres are planted with Asparajus and Fruit Trees, oow in full bearing, which could be let The Buildings are all new, and consist of an excellent Residence, Two Cottages, Large Onion and Seed Sheds, with Stables, Cart Sheds, &c.

Airply to Messis, ENGLISH BROTHERS, Peterborough of Visited.

SAVING TO

ADVERTISERS OF

MONEY, TIME and LABOUR BY

LOUIS COLLINS, MR. 4, Wine Office Court, Fleet Street, E.C.

Every Publication at Home and Abroad.—Terms free.

MILLINGTON AND CO., ENGLISH and FORBION SHEET and PLATE GLASS, WHITE LEAD, MILLED LEAD, OILS, and COLOUR MERCHANTS, 43, COMMERCIAL STEEL, E.

CHEAP OFFER of BEDDING

CHEAP OFFER of BEDDING
PLANTS:—
GERANIUMS, Tricolor, Mrs. Pollock, Glee Eyre Beauty and
Italia Unita, 16r. per 100, 21. 6d. per dozen.
Brooze, McMahoo, Black Douglas, Beauty of Calderdale,
10f. per 100, 21. 6d. per dozen.
11. 2d. per 100, 21. 6d. per dozen.
12. 2d. per 100, 21. 6d. per dozen.
13. 2d. per dozen.
14. 2d. per dozen.
15. 2d. per dozen.
16. 2d. per dozen.
17. 6d. per dozen.
18. 2d. per dozen.
19.
100, 1s. 6d. per dozen. IRESINE, 6s. per 100, 1s. per dozen. CHRYSANTHEMUMS, from single pots, choice varieties,

25. per dozen.

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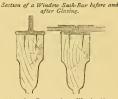
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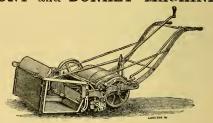
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THE

Gardeners' Chronicle.

SATURDAY, MAY 17, 1884.

HERSCHELL HOUSE AND UPTON PARK.

A ROUND the busy station of Slough a new neighbourhood has sprung up. This does not now appear a suitable spot for the observations of a Herschell, or of a genial lover of rural retreats like Edward Jesse, although the latter dated his Favourite Haunts and Rural Studies from Upton Park close by, and the former raised his telescope in a garden in the same parish of Upton-cum-Chalvey. Ten minutes' walk on the high road towards Windsor brings you to a residence of substantial red brick, which is still called Herschell House. George III, had been prompted by the scientific world to increase the astronomer's small resources by a salary, and here he completed the largest telescope in the world in 1789, and saw Saturn from the lawn in the rear with the help of his own 5-foot reflector, made by himself with his own hands. Here he discovered a new planetary system and several satellites before unknown; and here his sister Mary, who now lies beside him, devotedly assisted Herschell for many years; and here, on one occasion, her abstracted brother found her in the night suspended by a hook in the machinery, and a good deal hurt. The good, faithful sister had been calling out "I'm hooked!" some time.

Herschell House, which Sir William bequeathed to his son, has been enlarged by the addition of a third storey, the grounds have been reduced for the sake of a site for adjoining houses, land here having become valuable for building upon. Many good houses have been built in the immediate neighbourhood, and the large church of Slough, recently enlarged, stands hard by. From this spot a bye-road leads to the village of Upton, where Mr. Jesse resided, and where Herschell was buried, as was Mr. Ingram, late of the Royal Gardens, Frogmore, who spent some years of his honourable retirement at Slough.

Among the appropriate ornaments of this old church of Upton are a Yew tree of unknown date, and an "Ivy-mantled tower" which has been claimed as that of Gray's Elegy, though the tower of Stoke Pogis has been also named in competition. Since the death of Herschell, in 1822, this perfect specimen of a village church had been disused for a time and had fallen into bad repair. An increasing population led happily to its restoration and enlargement.

We may be thankful for the augmented wealth which has brought with it so many blessings and improvements of every kind. All be happy, alive or dead! Among the latter there is one who rests in this retired spot under a sumptuous monument, while his kindred— for he had returned to Upton as his birthplace -sleep in a row near at hand, and rest as well perhaps under the green turf as he does under marble.

Everywhere, in any tolerably attractive neighbourhood within easy reach of London, signs of increasing wealth meet the eye. The Thames Valley particularly, almost as far as Reading, is fast becoming a paradise where new grounds

and gardens are formed every year. The level surface of the river valley, the only drawback of the district, can be very greatly relieved by planting, so the settlers here reverse the rule of exterminating woods which prevails among settlers in some other regions, and make it their first task to enliven the monotony of the surface, and to break up its straight lines by skilled landscape gardening and the planting of groups of shrubs and trees of various heights.

The pleasing appearance of the little old church and churchyard at Upton are mainly due to the grouping of the shrubs and timber on and around the spot. There is a tablet to the memory of Herschell in the chancel, and another to his sister; and if we seek here for examples of success in life we find them within as well as outside the church, for Herschell as well as outside the church, for reference was the soon of humble parents, his father having been a German bandsman. The tablet, like his son's gravestone, near Darwin's and Sir Isaac Newton's, on the floor of Westminster Abbey, is a modest memorial of greatness, and the costlier monuments we have mentioned are perhaps just as appropriate to wealth. H. E.



MASDEVALLIA FLAVEOLA, n. sp.*

AT first sight this might be regarded as Masdevallia attenuata, but it is not. The leaves are cuneate, obovate, or spatulate, and the slender peduncles, surpassing the leaves, have usually two, or even three They are described as light yellow, yet I have a distinct impression that there are on each side two orange zones on the outer perigone. It has the side sepals very rounded at the top, and covered for some distance with the odd sepal. The tails, very narrow at the base, are dilated above, and exceed the cupular part of the perigone. It is no great thing, but one of those little curios which the collector of the Masdevallias will grow with pleasure. It was discovered by Herr Hübsch, in Costa Rica, for Mr. F. Sander, who has just imported a stock of it. H. G. Rchb. f.

ODONTOGLOSSUM PESCATOREI LOWIANUM, n. var.

This grand thing was discovered by one of Mr. Low's travellers. I had a dried specimen from my excellent oldest English correspondent. The plant arrived, and had the good luck to come into Sir Trevor Lawrence's hands, who kindly forwarded me now a fresh raceme. It is very long in the sepals and petals, which have numerous mauve spots and dots on a ground, the greater part of which is a fine light mauve, just as in the best Odontoglossum crispum sastuosum. H. G. Rchb. f.

DENDROBIUM DACTYLIFERUM, n. sp.+

This would appear to be a near neighbour of Dendrobium macrostachyum of Dr. Lindley. Its flowers are nearly the same, just as broad, and light ochre-white. The lobes of the lip are bordered by a fine ahrupt brown margin and calli, as well as the anther, which is of the darkest sepia. The shape of the lip is curious enough. Its long and narrow side lacinize go out into angles, and are quite approximate to the anterior square emarginate thick blade. There are three thick parallel keels on the disc, ending before the base of the anterior blade. The colours are derived from a sketch prepared by M. Förstermann, who sent living plants to Mr. F. Sander. It is expected to flower soon. The stems are great curi-

osities. Their upper parts are covered with old short thickish peducales, which show the scars of two or three flowers. The lower part of these stems are comparable to those of Dendrobium macrostachyum, and are full of roots, coming out, not in tufts and from the base, but singly from numerous joints, thus reminding one of such Epidendra as E. radicans. I have a tuft of stems at hand, where vigorous stems without any base adhere to other stems by their agglutinate roots in a remarkable manner. H. G. Recht, f.

TUBER-BEARING SPECIES OF SOLANUM.

Systematic Summary,-So far as I can judge from the material and information which we possess in England, out of twenty species which have been named, six-viz., S. tuherosum, S. Maglia, S. Commersoni, S. cardiophyllum, S. Jamesii, and S. oxycarpum-possess a fair claim to be considered as distinct species in a broad sense; and of the others eleven — viz., S. etuberosum, S. Fernandezianum, S. immite, S. colombianum, S. Otites, S. Valenzuelæ, S. verrucosum, S. debile, S. stoloniferum, S. utile, S. squamulosum, and S. Fendleri-are certainly, or probably, mere forms or varieties of S. tuberosum, and S. Ohrondii and S. collinum of S. Commersoni.

ECONOMIC SUGGESTIONS. - What Lord Cathcart asked for were any suggestions that a botanist might be able to give, founded upon his knowledge of the Potato plant and its geographical distribution, that were likely to be of practical value to cultivators. In reviewing the subject the considerations of this character that occur to me are these :-

In the first place, it always seems to me that cultivators work upon the tacit assumption, if I may so express it, that the one object in life of the Potato plant is to grow Potatos, and that this assumption has no sound foundation in fact or reality. Solanum is one of the largest genera in the vegetable kingdom. About 900 names stand in the botanical books as species, and Bentham and Hooker estimate that probably 700 of these are really distinct. Of these 700 it is only six that grow Potatos at all, and the remainder all maintain their hold in the world as most plants do, by means of their flowers, fruits, and seeds. I do not think that the Chilian S. etuberosum and Mexican S. suaveolens are more than mere forms of S, tuberosum, and they are said to be quite desti-tute of tubers; and there is the fact noted by Sir J. D. Hooker, that when S. Maglia was first grown at Kew for two years it did not yield any tubers. A great many of the cultivated varieties rarely produce flower and fruit. Any plant brought to the tuberbearing state is in a disorganised unhealthy condition, a fitting subject for the attacks of fungi and aphides, The great difficulty with which we have to contend in fighting disease is that in the Potato, as in other cultivated species, we grow in great masses plants which in a state of Nature are scattered amongst others.

The relationship of tuber to fruit is so clearly shown by one of the experiments of Mr. T. A. Knight that I will cite it in this connection. "Every gardener knows," he writes, in Philosophical Transactions, 1806, p. 297, "that early varieties of the Potato never afford either blossoms or seeds; and I attributed this peculiarity to privation of nutriment, owing to the tubers being formed preternaturally early, and thence drawing off that portion of the true sap which, in the ordinary course of Nature, is employed in the formation and nutrition of blossoms and seeds. I therefore in the last spring planted some cuttings of a very early variety of the Potato, which had never been known to bloom in garden-pots, having heaped the mould as high as I could above the level of the the mound as ingine as I could above the level of the pot, and planted the portion of the root nearly at the top of it. When the plants had grown a few inches high they were secured to strong sticks, which had been fixed erect in the pot for that purpose, and the mould was then washed away from their stems by a strong current of water. Each plant was now suspended in air, and had no communication with the still is the part exerct but it. Shows receive and as soil in the pots except by its fibrous roots; and as these are perfectly distinct organs from the runners that generate and feed the tubers, I could readily pre-vent the formation of them. Ellotts were soon made by every plant to generate runners and tubers, but by every mant to generate tuniers and thers, but these were destroyed as soon as they became per-ceptible. An increased luxuriance of growth now became visible in every plant, numerous blossoms were emitted, and every blossom afforded fruit." Secondly, a suggestion as to what might be done towards widening the power of climatic adaptation of

the cultivated Potato. There are certainly six distinct species of tuber-yielding Solanum, each with its own distinctive climatic peculiarities. I went to Mr. Sutton's trial-grounds specially to investigate this point, and came away fully satisfied that all the rumerous varieties in cultivation had originated from tubersering the horse defined. As for socialization in rumerous varieties in cultivation had originated from S. tuberosum,* as here defined. As far as climate is concerned, it cannot be doubted that Solanum Maglia (or the Darwin Potato as we might suitably christen it in English) would be better fitted to succeed in England and Ireland than S. tuberosum, a plant of a comparatively dry climate. We have indisputable testimony that S. Maglia and S. Commersoni yield readily an abundant supply of eatable Potatos. What I should suggest is, that these should be brought into the economic arena, and throughly tested as regards their economic value, both as distinct types and when bybridised with the innumerable tuberosum forms. hybridised with the innumerable tuberosum forms

The above remarks are taken from Mr. Baker's recent monograph in the Journal of the Linnean Society, wherein, however, we find no mention of Solanum (Witheringia) montana (Bot. Mag., t. 2768), the San Lorenzo Potato of Peru. ED.]

OLD FASHIONED GREENHOUSE PLANTS.

ERYTHRINA CRISTA-GALLI.—We have a specimen of this fine old plant which has flowered strongly and well in the greenhouse annually for the last twenty years; it requires but little attention, and it is always admired when in flower. The plant is cut down to the old stump annually like a pollard Willow. In the spring the young shoots grow out strongly in the greenhouse, and when they are 4 to 6 inches long, a few of them may be gouged out from the old stump with a heel attached, when they will strike in a hot-In about three or four weeks the young plants will have become sufficiently rooted to require repotting into larger pots. The first year 6-inch pots will be large enough. The plants require little or no water in winter, and should be cut down to within a few inches of the ground in December. The plants should be shaken out of the pots in January and be repotted in 6-inch pots; transferring them to 8-inch ones when the pots are quite filled with roots, and in that sized pot it will flower strongly. A writer in the first number of the Floricultural Cabinet, published in 1833, says that "he potted a two-year-old cutting in January. In April it was 6 feet high, and profusely in flower. Afterblooming it was cut down close to the original stem in May. In July it had again grown six feet high, and well in flower as before. It was cut down a second time in August, and flowered splendidly for the third time in October." The writer in question exhibited the same plant three times at the Horticultural Show at Chichester. Doubtless the plant had been grown in a stove, and being a native of Brazil, this treatment would suit it very well. likes a rich composition to grow in, of good turfy loam, and a little peat added. In dry warm positions it is quite a hardy plant, and succeeds well out-ofdoors. An example of it, against a wall of one of the plant-houses in Messrs. Veitch's nursery at Chelsea, has been growing and flowering in the same position for more than a quarter of a century, and there is a fine plant in a frame at Kew. The leaves are attacked by red-spider in dry hot weather, but it can easily be kept in check or destroyed by syringing.

CANTUA DEPENDENS is another old-fashioned green house plant, that well repays any care that may bebestowed upon it to bring it to perfection. It is a plant that will succeed in any greenhouse where it has plant that will succeed in any greenhouse where it mas plenty of light and air. Its greatest enemy is red-spider, which causes the leaves to drop off, if it is not observed in good time. It is very readily propagated from cuttings, and the young plaots should be grown on freely by repotting them as they require it. The long straggling growths must be trained to sticks put in close to the rim of the pots. A plant about 4 feet or more in height, trained in the form of a cylinder, and rather wider at the top, would now be a novel and attractive feature in any greenhouse. About two parts of turfy loam to one of peat, with a little dry and decayed stable manure mixed with it, and some sand, if necessary, is the best potting soil. Its long tube-shaped pendulous flowers, of a bright rosy-red colour, are produced in April and May. They are also produced in great profusion when the plant is encouraged to

^{**}Masterallia flaveola, n. 59.—Folio a basi petiolari cuneato spatulata nhuuse emarginate; pedunculu gracili apice 2—3-floro; menta nhuusangud : sepalis laterallius apice rotundatis omnibus alte cobserentibus, caudis longioribus supra basin angulatis superbus isupra basin angulatis superbus isupra basin angulatis superbus interaintis; labello pandurata acuto apiculo crasso intramarginali, aurantiaci ante apicem; carnis geminis in disco. Flores flaveoli. H. G. Robb, f. + Dendrobium datyliferum, n. 5p.—Affine Dendrobium acretachyo, Lindli: cauihus elongatis demum sulcatis; basi x multis articulas rhosphoris; s superne tacentos 2—3-floros x multis articulas rhosphoris; s superne tacentos 2—3-floros varium pedicellatum non zequante; sepalis lanceis; tepalis previoribus; labelli angusti lacinis lateralbus angustis apice triangulo abruptis; lacinia mediana crassa subquadrati menginata; carinis terais in disco carnosis ante basin lacinia mediana abruptis; columna apice trioentata, H. G. Robb, F.

^{*} Four old cultivated specimens in the Sloane herbarium at the British Museum, and one from Philip Miller, all belong to typical S. tuberosum.

grow freely the previous season, and treated to a decided season of rest by being kept comparatively dry in winter. An excellent figure of the plant was given in these columns in vol. xiii., p. 785.

HOVEA CELSII is a great favourite with us, and is now profusely in flower; its small purplish-blue flowers are really pretty. It does not brook the tying and training essential to the formation of a round-headed specimen plant. All plants were not intended by Nature to grow in one form, any more than the flowers were to be of one colour or one shape. Those who would cultivate this New Holland plant must be prepared to see it grow rather leggy, and with bare woody stems. By pinching and tying out in the early stages of its growth it can be kept in order for a few years; but a twenty-year-old specimen forms 5 feet stems, rather bare at the base. If it is placed amongst other plants the stems are not observed, and the clusters of Pea-like flowers have an elegant appearance hanging over the fair white masses of Deutzia gracilis or Staphylea colchica. It likes a good compost of turfy peat to which a little decayed turfy loam has heen added. We mix some broken charcoal with it, which will keep it sweet for a long time if the drainage is good. This is purely a cool greenhouse plant, and may remain there all the year round in a light and airy position.

AZALEA SINENSIS .- This may almost be said to be an old-fashioned plant. It used to be popular a quarter of a century ago for exhibition. It is a distinct and pleasing novelty in a collection of Azaleas, and is valuable in an exhibition collection of stove and greenhouse plants; there is no other plant produces flowers of the same pleasing bright orange colour. The variety we have grown for many years was sold under the name of Fraser's variety. The flowers being larger and brighter in colour than the usual type, the habit is rather straggling; but with a little care a compact bush can be obtained. This is a far superior plant to any of the forms of A. mollis now becoming so popular, and the flowers last much longer in good condition. The young wood is very brittle, and when the plants are large many of them snap off in moving them about at the time of rearranging the plants. It is not very difficult to force this species into flower, but it blooms early in May if left in a cool greenhouse all the year round. It is a deciduous plant, the leaves taking a reddish tint before they drop off in autumn.

PIMELEA SPECTABILIS. - The plants treated upon above are not difficult to grow, and as a rule Pimeleas also can be grown into good specimens without any extra care; but this species has a tendency to become leggy, unless it receives careful cultivation. It is seldom seen now as an exhibition plant, but it should be an important specimen, if well grown, in the most select collections. Its heads of creamy-white or rose coloured flowers are very attractive. What the plant requires, to grow it well, is a position near the glass in an airy greenhouse. Carefully train out the shoots, and stop them in the spring and early summer months by pinching out the tips of the growing stems. The young plants require repotting every year, using good turfy peat with a little loam and sharp sand. The best time to repot them is sharp sand. in spring, the plants have then the whole season before them to fill their pots with roots. Watering requires to be done with great care, especially after repotting. This, and indeed all such hard-wooded plants, should be moderately moist at the roots before they are potted, and in that case they require no water for nearly a week. Indeed if the weather is wet and cold they may be better without it for ten days, by that time the roots will have made an attempt to enter the new compost, and the water applied at the right time will cause them to push more rapidly. It is an error in practice to water a plant immediately it has been potted, and one which often destroys the small rootlets that go to support it. In contrast to this species may be named P. Hendersoni, which makes a large hardsome plant for exhibition, requiring much the same treatment as the other, and is easier to grow into a specimen. Syringe treely underneath the leaves whenever a trace of red-spider is seen. J. Douglas, Great Gearies, Hford.

ANTHURIUM VERVAENEANUM.—A variety of A. Scherzerianum, raised by M. Vervaene, of Ghent, and characterisd by oblong acute white spathes, of which only the tip is red. The plant is figured in the last number of the Revue Horticole.

APPLES AND PEARS IN THE CARSE OF GOWRIE.

WE take the following extracts from a paper read by Dr. Rohertson, of Erral, an enthusiastic pomologist, at a recent meeting of the Perthshire Society of Natural Science:—

The cultivation of fruit in this country, especially in Scotland, has been sadly neglected of late. Carse of Gowrie, as well as elsewhere, many good There has orchards were allowed to run to waste. been a great outery as to bad seasons, and not withnut good cause, but bad culture had, I fear, as much to do with it as bad seasons, or, I should rather say, no culture. Many of the Carse orchards had no digging, no pruning, and no manuring, and yet under such treatment fruit was expected. In many of the largest orchards in the Carse all the trees were com-"fogged," covered with moss, and the soil completely exhausted by wild grass and that stoloniferous plant known in the country by the name of Crawtaes. [Is this Ranunculus repens?] In October last I had good opportunities of seeing many of the Carse orchards, as I was asked by the Secretary of the Dundee Horticultural Society to gather up all the specimens of Apples I could find for the Apple Congress at Chiswick. I also visited many gardens as well, and most of the good specimens I got were from gardens, clearly proving what I have always advocated, that good culture is the great secret of successful fruit growing. The duty of collecting so many different specimens in so many gardens and orchards entailed on me a good deal of extra labour, but I sometimes managed to "kill two birds with one stone," by visiting a patient or two, while I gathered up a few Apples as well. It was, however, very interesting and very pleasant work, as it gave me a good opportunity of seeing many orchards and gardens at the most interesting season of the year; and I must say that all with whom I came in contact-even those who had rented orchards-gave me freely all the specimens I wanted, and all the information in their power, when I told them the purpose I wanted them for.

I think I sent to the Congress the largest collection that was forwarded from Perthshire. I had over sixty varieties, some of them really beautiful, and large in size. Some of them were from my own garden, but by far the greater number was collected as already stated. One or two of the finest specimens which were particularly noticed, especially for their beauty, were from A. Lacaille, Esq., Gourdiehill. The Lass o' Gowrie was particularly fine. One thing I particularly noticed in going through many of the orchards, was the enormous number of Apples of a small size, quite unfit for market, with no names, or merely local names; many of them just Crabs or wild Apples, not even having colour, as many of the American Crabs have, to recommend them for cultivation anywhere. The only Crab Apple I saw with any pretensions to beauty or symmetry of form, was in the U.P. Manse garden, Pitrodie-a beautiful little round one, of a fine golden colour, tiuted with red. I was truly sorry to see so many large orchards in the Carse with so very few of the large growing kinds, Apples that are really worth being sent to market, and likely to be able to compete with those brought from the Continent, and also from America. The Apples from Germany, as a rule, are of a larger kind, and higher in colour than what we grow in Scotland, or even Great Britain, hence the price they command in our markets. To remedy this as far as possible, and having the writing of this paper in view, I sent out a schedule of four questions to almost all the head gardeners in the Carse, and some of the most experienced market gardeners and orchard keepers, asking what Apples and Pears grown at present in the Carse orchards are unworthy of being cultivated on account of smallness, had quality, or had bearing. Also, what kinds they would substitute in the place of the had ones, as more suitable for market and home consumption-at the same time asking them to make what remarks they thought proper on the subject. I did this with the view of laying before the members of this Society, and the general public, a synopsis of the pomological lore of the Carse in the shape of a good list of Apples and Pears that are really worth cultivating, and fit either for market or home consumption, and able to cope with foreign importations,

From the returns sent me I learn that a great many Apples and Pears in the Carse that are not worth cul-

tivating have only local names, and many of them no names at all; and the kinds that are really worth cultivating are not so very numerous, notwithstanding the vast number of varieties that are grown throughout the length and breadth of the land.

In the Apple-voting there were nineteen in allfourteen head gardeners and five market gardeners
and orchard-keepers—all men of great experience in
fruit-growing as well as fruit-packing and selling. A
few of the gardeners have had from forty to fitty years'
experience, and some of the orchard-keepers have had
from five to twenty of the principal Carse orchards
under their care. Well, I will now give the result, which I trust will be useful, not only to growers
of fruit in the Carse, but also clsewhere, in making a
good selection either for garden or orchard i—

-Lord Suffield, 18; Keswick Codlin, 15; Tower of Glamis, 16; Stirling Castle, 15; King Pippin, 12; Hill's Seedling, 12; New Hawthornden, 12; Dumelow's Seedling, 11; Warner's King, 11; Irish Peach, 10; Yorkshire Greening, 9; Lord Duumore, 9; Phillips' Seedling (Cellini), 9; Lass o' Gowrie, 8; Kentish Codlin, 7; Nonesuch, 7; Early Red Margaret, 7; Manks Codlin, 6; Arbroath Oslin, 6; Ribston Pippin, 5; Kerry Pippin, 5; Irish Green, 6; Grey Leadington, 3; Golden Pippin, 4; Echliuville Seedling, 6; Cambusne-than Pippin, 5; Blenheim Pippin, 4; Revelstone Pippin, 6; Ringer, 4; Strawberry Late, 4; French Red Streak, b; Kinger, 4; Strawberry Late, 4; Frenen Red Streak, 4; Baldwin, 3; Cox's Orange Pippin, 9; Eve Apple, 3; Fullwood, 3; Fair Maid of France, 3; Lord Derby, 3; Northern Spy, 3; Paradise Pipin, 3; Strawberry Early, 3; Wallace Cluster, 3; White Captain, 3; Standard, 3; Rock, 3; Mifriston, 2; Adams' Pearmain, 2; Astrachan Paradis, 2; Pedigrachime Engalding. Astrachan White, 2; Bedfordshire Foundling, 2; Baxter's Pearmain, 2; Beauty of Kent, 2; Blenheim Orange, 2; Dutch Codlin, 2; Irish Codlin, 2; Cornish Gilliflower, 2; Claygate Pearmain, 2; Devonshire Quarrecden, 2; Early Julien, 2; Emperor Alexander, 2; Fillbasket, 2; Green Sweet, or Colville, 2; Grenadier, Reinette du Canada, 2; Maiden, 2; Norfolk Bearer, 2; Orauge Pippiu, 2; Pott's Seedling, 2; Wadhurst Pippin, 2; Woodstock, 2; Betty Geeson, Calville Malingre, Cockle Pippiu, Carlisle Codlin, Dutch Mignonne, Fearn's Pippin, Jolly Beggar, Jenny Lind, Little John, Leyden Pippin, Margil, Nelson's Glory, Norfolk Beefing, Northern Greening, Pearson's Plate, Rymer, Beefing, Northern Greening, Pearson's Plate, Rymer, Royal Russet, Yellow Ingestre, Sam Young, Small's Incomparable, Striped Beefing, Summer Thorle, Waltham Abbey, Winter Greening, Williams' Favourite, Yorkshire Beauty, Green Stoup, Painted Lady, Ashmead's Kernel Improved, Annie Elizabeth, Lady Henniker, and Winter Pearmain-all one vote each.

Now, by these nineteen voters, about one hundred kinds have been voted in as good, and all deserving to be cultivated. The majority of the kinds I had the pleasure of seeing last autumn, and can bear testimony to the care with which they have been selected. Some of them are not so well known as they should be, or they would have got more votes. I might instance the Lass o' Gowrie, which, although pretty high up in numbers, should have been further up, as it is one of the best early Apples we have. Then there are Annie Elizabeth, Lord Derby, Emperor Alexander, Lady Henniker, and Waltham Abbey, all really first-class Apples, which would be more culti-vated were they better known. Lord Suffield, which is highest in the list, well deserves the place it occupies, is a free grower, a free bearer, having a hardy and beautiful bloom. The trees are not liable to canker, can be grown almost to any size wanted, and thrive as well on the Crab as the Paradise stock. know an amateur, about half a mile from Errol, who had them the other year 171 oz, on a tree grafted by a working man, and on a Crab stock from the woods. I must not omit to mention another new Apple, raised by a great botanical friend of my own, the late John Brown, of Murie Gardens. It was exhibited for the first time at the Dundee show last autumn by his son, the present gardener of Tayhank, Errol, and was 1st-prized for table Apples in the gardener class.

For Pears only seventeen voted—fourteen gardeners and three orchard-keepers—and the result is as under:—

Hazel or Hessle, 14; Crawford, 11; Swan's Egg, 9; Galston or Moorfowl's Egg, 8; Williams' Bon Chretien, 7; Craig's Favourite, 7; Beurrië d'Amanils, 0, Jargonelle, 6; Marie Louise, 5; Beuvie, 5; Beurre Diel, 5; Easter Beurré, 4; Beurre de Capiaumont, 3; Autumn Berganotte, 3; Flemish Beauty, 3; Grey Honey, 3; Josephine de Malines, 3; Citron des Carmes, 2; Croft Castle, 2; Black Auchan, 2; Beurré Rance, 2; Broom Park, 2; Green Chisel, 3'

Hacon's Incomparable, 2; Louise Bonne of Jersey, 2; Longville, 2; Souvenir du Congrès, 2; Passe Colmar, 2; Napoleon, 2; Nondescript, 2; Beurré Bachelier, Bergamot d'Esperen, Bishop's Thumb, Beurré White, Black Pear, Catillac, Colmar d'Eté, Cripple Fiddler, Beurré d'Aremberg, Beurré de l'Assomption, Clapp's Favourite, Duchesse d'Angoulème, Drummond, Duncan, Summer Doyenné, Glon Morceau, General Todtleben, Green Yair, Jersey Gratioli, Huntingdon Early, Madanie Treyve, Maréchal de la Cour, Pitmaston Duchess, Suffolk Thorn, Thomson's Pear, Winter Nelis, Vat, Aston Town, and Uvedale's St. Germain—all one each.

The last-named has been known to grow 3 lb. in weight. While still speaking about Pears, let me give a list of some I had the pleasure of seeing growing in pots this season, and their weight when taken off:—Doyenné du Comice, 17 oz.; Beurré Bachelier, 14 oz.; Beurré Diel, 15 oz.; Foodante d'Automne, I lb.; General Todtlehen, 13 oz.; Glou Morceau, 12 oz.; and Nouvelle Fulvie, 14 oz. All the above were in one little glasshouse, but with no artificial heat. Here is a list from another garden, and noder glass also:—Lieutenant Poideven, 16½ oz.; Duchesse d'Angoulême, 121 oz.; Pitmaston Duchess, 13 oz.; Madame Treyve, 10½ oz.; General Todtlehen, 14 oz.; Maréchal de la Cour, 15½ oz.; and Soldat d'Esperen, 121 oz. This will give you some little d'Esperen, 123 oz. Anis will give you some initie dea of the size Pears can be raised to in pots, under favourable circumstances, and well attended to otherwise. Now, you must not go away with the idea that because these fruits were grown under the shelter of a glasshouse, they cannot be a support of the carrows. he grown almost as well outside. If grown pots, and liberally treated and placed in a sheltered situation, they will grow to an immense size. You will perhaps be surprised when I tell you that I saw some of the same Pears I have already named grown in another garden under glass, but with no artificial heat, some of them in 9-inch pots-pots not larger than you grow an ordinarily sized Pelargonium in-with from six to eighteen large Pears, from 12 oz. to I lh. in weight. The finest coloured and largest King Pippin Apples I met with last season were grown in a pot at the edge of the front door of Mr. Wilson's garden, Cuha Terrace, in the village of Errol. I had the pleasure of exhibiting them at a lecture I delivered in Kinnaird in February last on cottage gardening, and they were so highly coloured that some of the audience took them for Oranges,

WET OR DRY.

THE long - continued dry weather, not perhaps dry everywhere, but dry generally, because the rainfall almost all over the kingdom for the past several months has been singularly small, is naturally exciting much attention, and almost alarm. Pleasureseeking people see only in fine weather the fullest opportunity for them to obtain ample enjoyment, and no saying in relation to the weather is more common than the remark, "It is a pity fine weather should do any harm 1" Perhaps so far no considerable amount of harm has been done, still the soil is at the time of writing (for in our changeable clime we must always make a reservation) very dry; yet vegetation is for the year only in its infancy, and no great strain has been made upon the soil to sustain life. The pinch is now coming rapidly, and if no rain fall during the present month we shall enter upon June with sad forehodings. We have had it pleasantly impressed upon us that a drier winter or spring than the seasons just past have rarely been known, and to special mildness has been linked special dryness. In the almost ordinary course of things, in the realisation of those average compensations which Nature is so fond of producing, we ought to have a wet, cold summer, but certainly there is no present evidence that such a catastrophe is imminent; on the other hand, should the summer continue as the winter and spring have heen-markedly dry-then we shall have heautiful weather to set against thirsty soil and starved crops. No one can say that at present the garden or farm outlook is cheering; but were we now to have a week or two of abundant genial, warm rains, a revolution in vegetable aspects would be worked quickly. The fruit growers have had a heavy blow, and either a Irut growers have had a heavy blow, and either a wet, cold summer, or a hot, parched one, would add to their burthens, therefore the season is heing watched with exceeding interest and anxiety. Practical readers fully understand the importance of rain just now, for once the summer is fairly in there is little hope for the desired moisture until autumn is with us, and then it comes too late.

Prchid Notes and Hleanings.

ODONTOGLOSSUM WILCKEANUM.-The offspring of the union between the variable O. luteo-purpureum and the beautiful but fickle O. Alexandræ, this plant, by the endless variety exhibited by the different specimens, offers as great a puzzle to botanists as all the other Orchids which are the result of natural crossfertilisation do. To the cultivator and lover of heautiful flowers it gives a great number of handsome varieties, the poorest of which are good enough to grow, and so strikingly lovely as to warrant their being placed among our most cherished nurslings. It has long been known to all Orchid growers that in the case of each of the variable natural hybrid varieties the name is rather given to the section of plants supposed to be the result of intercrossing a given pair than to any individual plant the result of such cross, as no other course is open where scarcely two plants can be obtained alike in every particular in the marking, colour, or shape of the flowers. Hence it is that out of a dozen plants all entitled to the same name, some will be worth ten times as much as others, Odontoglossum Wilckeanum was first flowered by Mr.

of Mr. Bull's establishment. The long show-house is arranged much in the same way as last year, but with several judicious improvements suggested by previous experience. The edging of the stages has been plaoted with Panicum sulcatum variegatum (now called Oplismenus imbecillis variegatus), a form raised in the nursery, not so brightly coloured as the variety usually grown, but more suitable for use where a foil is wanted for brilliantly coloured flowers. Next to this is a line of deep green Maidenhair Fern, over which hang the graceful spikes of many Odontoglossums whose loveliness is heightened by the greenery beneath them. The side stages are occupied, as it were, with Adiantum cuneatum, dotted with elegant little Palms, such as Cocos Weddelliana, but only thinly, to provide contrasts with the flowering Orchids, which to some extent are arranged in groups of varieties of particular species. This arrangement not only enables the exhibitor to invest his show with artistic merit, but has advantages also of an educational character. Thus, who can pass a group of varieties of Cattleya Mendelii without heing at once struck by the remarkable range of variation which this species exhibits? Here are forms with the colours of the labellum ranging from a light tint of violet to the richest purple, while the sepals and petals vary from pure white to lovely shades of mauve and rosy-purple. The yellow blotch on the lip peculiar to the species is present in

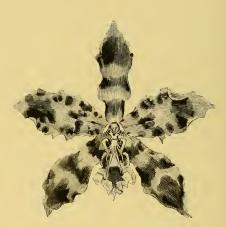


FIG. 122.—ODONTOGLOSSUM WILCKEANUM.

Wilcke in 1880 in the collection of M. Massange, of Baillonville, Marche, Belgium, and in honour of him it was named. Our illustration (fig. 122) gives a flower of the true original type, but each succeeding year furnishes s with other and widely differing varieties, varying from the bright yellow, reddish-brown blotched original form, to the extraordinary O. W. pallens of Mr. Lee's collection, which has a transparent greyish-white ground blotched and spotted with shiny light chestnut colour, and having a hright yellow centre. This variety would he pronounced a "crispum," but in this, as in all other cases in which the true names of hybrid Odontoglots are concerned, the column and its appendages, and the labellum and its shape, and the arrangement of its centre come to the rescue, and positively prove that O. luteo-purpureum has had something to do with it. O. Wilckeanum is now a great favourite, and every good collection has its pet varieties of it: it is all the more liked that it is a good "doer," and seems to improve in heauty every year if grown in a cold house, such as the O. Alexandræs thrive in.

MR. BULL'S EXHIBITION.—We have no hesitation in saying that the exhibition which Mr. Bull opened on Tuesday eclipses all his previous efforts in the same direction. His show-house is a scene of the greatest orchidic beauty, haffling description, and we had almost said defying exaggeration. In truth, it is a marvellous display for any nurseryman to create single-handed, and it speaks volumes for the resources

all hut one, in which the yellow is replaced by white —a rare and valuable variety. On Tuesday 112 flowers of C. Mendelii varieties were open. Other variable species are treated in the same way, and Odonolglossum Alexandræ alone affords many combinations of widely differing forms. The Alexandræs are truly a splendid lot, every variety being a gem in its way, and their number adds largely to the total number of 1160 spikes of hloom, which the genus Odontoglossum contributes to the feast. Included in these are several unnamed species or hybrids, O. Roezlii, O. cordatum, a nice specimen with ten spikes; O. Halli, the white-lipped form named leucoglossum; a prettily spotted form of O. Rnckerianum; the fine O. mulus, which has lately been fetching good prices; the rare O. Victor, supposed to be one of two only in the country; O. triumphans, one plant hearing two noble arching spikes of thirty-one flowers; O. Wilckeanum, and its white-ground variety named pailens. Amongst the Cattleyas, besides the Mendeliis already noted, are C. labiata brilliantissima, a new variety, with the well-knowo markings of Backhousiaoa on the petals, and the labellum of the richest crimson-maroon, with yellow blotches on the side lobes; C. Skinneri, lovely violet-purple placed in cootrast with the variety alba. Lælias include L. purpurata alba, two or three forms, and the new L. Schilleriana Mastersii, white with purple labellum, and the side lobes fringed with the same colour. Down the top of the central stage are handsome

Palms, Zamias, Ferns, and Anthuriums, most noticeable of all at the entrance being a noble example of Anthurium Veitchii, with fifteen handsome leaves standing out in bold relief above a charming group of varieties of Odontoglossum vexillarium, mixed with richly coloured Masdevallias. Arching in various directioos are a number of grand spikes of Cymbidium Lowii, and among them the rare C. Lowii flavum, with the pale-coloured lip. Other rare and good things which claim attention are a fine new Brassia, unnamed, with cionamon-brown coloured sepals and petals tipped with yellow, the labellum white, and

them all would require more space than can be spared, but we hope we have said enough to induce all who have the opportunity to pay the exhibition a visit,

THE ORCHID MARKET.—Nearly 5800 was the amount realised at the sale of Orchids in flower at Stevens' Rooms on the 8th inst. We append the prices obtained for a few of the lots:—Odontoglossum mulus, 18 gs.; Lycaste Skinneri alba, £13 2.f. 6d.; Masdevallia Harryana, Bull's blood var., a plant with twenty-eight leaves and twelve spikes, 11 gs.; Odonto-

hundreds of bulbs," of Cattleya Mossies, fell to a bid of $\angle 26$ 5. The Anguloas mainly consisted of A. Ruckeriana varieties, which met with a ready sale, the best prices obtained being' $\angle 31$ 10x., $\angle 21$, $\angle 13$ 2.5 $\angle 4$, $\angle 10$ 10x., and $\angle 9$ 10x; A. uniflora specimen with twenty-four bulbs, fetched 6 gs.; and another species, said to be white flowered, $\angle 7$ 10x. and $\angle 7$, &c.

CATTLEYA MOSSIÆ RETICULATA,—Messrs. F. Sander & Co. have flowered out of their large importation of C. speciosissima a grand variety with immense sweet-scented flowers and gigas-like veined crimson labellum. It is a most beautiful Cattleya, in habit exactly intermediate between the nearly round-bulbed C. speciosissima and the true compressed bulbed C. Mossiæ. It has the Honeysuckle scent of C. Eldorado.

THE LARGE POPLAR AT DIJON.

A VISIT to the interesting and well ordered Botanic Garden at Dijon last autumn furnished us with an opportunity of noting how with scanty means M. Weber contrived to make the garden entrusted to his charge subserve the purposes of horticulture and agriculture as well as of scientific botany. As we mentioned at the time, one of the curinsities of the garden is a gigantic Poplar, Populus nigra, of which, owing to the courtesy of M. Weber, we are now in a position to give an illustration (fig. 123). This noble tree is believed to be more than 400 years old; documentary evidence alludes to it in 1660. At the ground level the girth of the trunk is about 50 feet, and at 1 foot above this it measures nearly 40 feet. As will be seen, appropriate measures are now taken to secure the well-doing of the tree.

THE HEALTH EXHIBITION.

As might naturally be expected, floral and arboreal adjuncts to the above show form no slight item of its attractions, and are, indeed, well nigh indispensable, especially in those parts that are unoccupied by buildings. Although we are in the middle of May, vegetation shows considerable backwardness, the result of the cold winds of April, which retarded, and in many instances very much injured that that pushed so untimely, and it will therefore be some time yet before we have the accustomed fulness of summer to replace our present barrenness. The newly laid turf, which has taken the place of the acres of mud, the result of the ceaseless trampling by visitors last season, together with freshly laid gravel, forms the best of settings for the various objects scattered over the garden. Some new walks have been laid out, that will afford additional space for promenaders, and likewise for a greater number of chairs, and provisions are made to keep the promenaders off the turf. This is an especially good feature in the minor alterations seen this season, for if the turf can be preserved in a luxuriant condition the effect of the whole—lighting, waterfalls, fountains, &c .- will be much heightened.

Several of the leading nurserymen have supplied plants, at their own cost, for the embellishment of various portions of the gardens-an item that would too heavily have taxed the resources of Chiswick had it been undertaken by the Royal Horticultural Society. In front of the clock, and opposite to the water-basin, Messrs. Lane & Son, Great Berkhamsted, have placed a massive bank, composed mostly of Rhododendrous. This is situated close to the buildings, which range thereabouts from east to west, and in front has a soft serpentine outline. The same firm has also another border, made up mainly of Rhododendrons, Conifers. and evergreens, of sizes between I foot and 5 feet in height, which skirts the Eastern Arcade for the greater part of its length, and being rather closely planted with symmetrical, handsome plants, it forms an admirable screen in that part. In the neighbourhood of Messrs. Doulton's pottery exhibition Messrs. Paul & Son, Old Nurseries, Cheshunt, make a brave show with some fine pyramidal Hollies, Araucaria excelsa, and with a capital assortment of the choicer Conifers arranged in a narrow border skirting one of the sheds.

We noticed several handsome specimens of Abies numidica, A. Williamsii, A. Dunnettii, and A. perthensis; and also a strikingly symmetrical Picea brachyphylla; a low piece of rockwork planted with flowering clumps, together with a group of standard

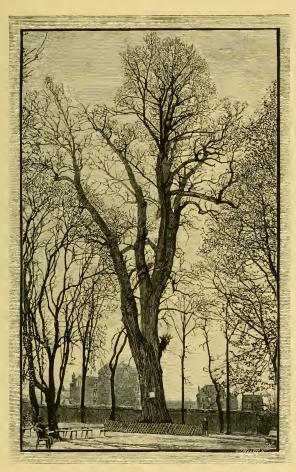


FIG. 123.-THE GREAT BLACK POPLAR AT DIJON.

the flower scented as of Violets; the new hybrid Calanthe Dominyi, with a dozen spikes or more of bluish-violet flowers; Masdevallia Harryana magnifica, purple, and M. Harryana Meteor, a fine shade of crimson; Oucidium superbiens, a much deeper coloured form than the ordinary one; the seldom seen Oncidium pumilum, a low-growing plant with short, dense spikes of small yellow blossoms; the rare Oncidium verrucosum pictum; the Humming Bird Masdevallia, M. trochilus, the handsome scarlet and orange-coloured Epidendrum rhizophorum, and Dendrobium chrysotoxum, both the Burmese and East Indian forms, the former of which has much the advantage in size. These are, of course, not a tithe of the good things now in bloom; to mention

glossum Alexandre, 7 gs.; Ledia purpurata, fine specimens, 18 gs. and £15 4z. 6d.; Cattleya Mossiæ, a fine variety, £21 10z. 6d.; Masdevallia Shuttleworthii, £7; Odontoglossum vexillarium, dark variety, £7 10z.; Cattleya Mendelii, £8 18z. 6d.; Oncidium sp., £8; Masdevallia regalis, £8; M. conchiflora, with sixty leaves, £5 10z.; M. maxima, with thirty leaves, £6 10z.; M. Harryana sanguinea, £9; Odontoglossum vexillarium, a fine plant in a 15 nich pot, 1z gs.; and Odontoglossum sp., gs. On the following day, May 9, Messrs. Protheroe & Morris also had a good sale, at which the specialities were Odontoglossums, Cattleya Mossiæ, varieties, and Anguloas. A very fine hybrid Odontoglossum realised 10 gs.; and "a wonderful mass, having

Roses in bloom, which latter will be renewed from time to time as the plants go out of bloom, comprise Messrs. Paul's donation in this way. pavilion finds place about the middle of a congeries of sheds, stalls, and offices; and here, in an open space, Messrs. C. Lee & Son have arranged four beds, at the angles of a square, that is embellished by a water basin. These have been filled with small and large plants of Rhododendrons, white Broom, golden Weigelas, Berberis Darwinii, and a variety of flowering plants of a herbaceous character, as a carpet under those. Here and there are small standard Euonymus japonicus, with gold and silver variegation, and many examples of Vucca gloriosa are planted, or stand about; some of them, doubtless, are intended to be used in the remainder of the design, which was in a somewhat incomplete state. The little quadrangle here should form, when fountain and water-basin and its encircling parterre are finished the prettiest, coolest, nook about the place. Messrs. C. Lee & Son have also formed a narrow flower border on either hand as the visitor approaches the embattled gateway of old Londondecoration just a little out of keeping with adjacent objects, but one which probably will not be retained. The middle walk in the show is in the hands of Messrs. Waterer & Co., of Bagshot, who have made good use of the more ample space with which they were favoured. Borders having a width of from 6 feet to 12 feet, run along the base of the buildings on either hand, and these are planted, in a pleasing irregular style, with standard and bush Rhododendrons, Thuias, Retinosporas, and others of that class; the serpentine margin next the turf being prettily defined with dwarfer evergreens and Conifers.

This portion, with its ample turf margins, will be a pretty bit of decorative gardening, when the budloaded Rhododendrons are in flower. In a shady cool retired spot in front of the Prince of pavilion Mr. Maurice Young, Milford, Godalming, has placed a goodly assortment of Rhododendrons, in the form of a continuous border running round the major portion of the available space, the basin-shaped middle area being of the greenest of turf. The floral decorations in the pavilion are in the hands of Messrs. Dick Radclyffe & Co., 129, High Holborn, W.C., who have a rockery with dripping water, and electrically lighted; many Ferns, Lycopodiums, Dracænas, Pandanus, and small Palms, forming the bulk of the subjects made use of on the rockery. Inside the saloon here a few flowers, Ferns, and other plants of an ordinary character are to be seen. They have likewise placed some rockwork in the large water basin in the grounds, in which artificiality and contrast with the smooth stone walls to which it has been attached are too apparent.

Messrs. Fulham, of Broxbourne, the well-known constructors of rockeries, &c., are building up one of their structures, which will shortly be completed. They have samples built up as quoins in a building of their terra-cotta—a material of a warm buff colour, and of a lively brick-coloured, smooth-surfaced concrete. The show made by the rustic furniture and arbor nakers includes some very well furnished examples by Mr. J. W. Parrett, of Forest Hill, S.E. — several of the heather-thatched arbors being very tasteful in design, and not too small, a fault often seen in such structures. Mr. Lovegrove, of Slough, contributes some artistically made chairs, stools, and summer-houses.

On other objects of interest we shall have occasion to speak later on.

Foreign Correspondence.

SIERRA DE MANCHIQUE: Afril 19,—I have been making a very pleasant tour in Algarve, Southern Portugal, and, amongst other places, paid a visit to Monchique. We started about 100 o'clock to see the sulphur baths, about an hour's walk from our inn, and to which we were told about 500 people come every year, the bathing season usually beginning by the middle of April; but this year no one had as yet come, owing to the cold weather. On the way we found Cistus ladaniferus growing in quantities, the flowers being very large, and the spot at the base of the petals in different plants varying in depth of colour till it was entirely lost, making the white variety very handsome. Cistus salvifolius, a compact low-growing bush, was covered with flower;

and growing side by side with it, Cistus populifolius, a tall striking looking plant growing from 3 to 4 feet high, with a hard woody stem and tree-like habit, with very large leaves and flowers, the latter almost identical with those of C. salvifolius, white with pale yellow at the base of each petal. In some plants the leaves were turned a bright crimson-a fact which we did not know how to explain. A little further on we found another species of Cistus, unknown by name, but covered with bright yellow flowers, and looking very pretty growing among the blocks of granite which were scattered over the ground. On the hillside above the baths we found Gladiolus serotinus, and near it a few plants of Asphodelus ramosus, which seems to be very common in Portugal, and which makes some of the low-lying plaios of the Alentajo quite pink as far as one can see. Our next find was a parasite on the roots of the Cork tree, a handsome plant of a bright purple colour; then Myrtus communis, and near it Viburnum tinus. On our way back we found Scilla pumila, and several other plants. In the Chestnut woods near our inn-which were very backward, not being yet in leaf—we found Rannoculus Ficaria, Primula acaulis, and Viola canina, Scilla pumila, making it look much like an English wood in spring; Pæonia officinalis, in full flower and coming up from seed as I dug up several young seedlings; Sarsaparilla (Smilax) climbing over a Bramble bush with its graceful clusters of reddish-brown berries; Saxifraga granulata growing on the top of every wall and dyke, making them a mass of white; while underneath in the crevices between the stones were numbers

of Ferns—Ceterach, Asplenium, &c.—making the tough granite wall look very pretty.

April 20.—A very showery day. We started for the highest peak of the Manchique at 11 o'clock; on the way up we found Erica arborea covered with flower, E. umbellata also in flower, Calluna vulgaris growing near but over. All the way up we found a pretty little purple Trichonema growing even at the very long among the stunted Furze and Bracken. At 1.30 we reached the top, which was marked by a pilar made of granite, and the ratin having fortunately stopped and the mist cleared off, we could see a little of the splendid view, looking towards the sea, of Portomão, Lagos, Faro, and Cape St. Vincent, and northwards of numberless hills with mule paths winding over them, and here and there a sierra, one of which our guide told us was the Sierra de Estrella. On our way down we found Rhododendron ponticum growing along the sides of the mountain streams, but only a few flowers out; also Lavandula stæchas. Scatt Wilson.

The Benbageous Bonden.

SINGLE DAFFODILS BECOMING DOUBLE, -A very few lines more and I have done with this subject until next spring. It is not a question of theory, or of probability, but of the evidence of facts. I ask those interested about it, not only to make experiments themselves, but to make enquiries amongst their gardening friends, and to get them to try. That genuine typical single wild Daffodils turn to the double of a larger garden variety is a statement naturally received with some incredulity, and I was quite prepared for a repetition of all the plausible arguments which have frequently before been adduced against it. In fact, the editorial answer we have so often seen made to those who have sent large double Daffodils as the garden produce of single wild Daffodils-" Your double flower belongs to quite a different variety, and cannot have been produced by the single wild Daffodil "-this answer, I say, appears reasonable and conclusive enough. But I have now received more than fifty letters on the subject, many of them recording observations which seem to have been carefully made; I may, therefore, fairly ask the readers of the Gardeners' Chronicle not to be too hasty in rejecting such evidence, and not to conclude that because a similar change does not take place in their garden the result must be the same in all soils. I have made an abstract of the evidence in the letters I have received, and a list of the gardens-more than twenty in number-to which I have sent for experiment typical wild Daffodils, collected far from any cultivated ground. That this labour may not be wasted, I have entrusted a copy of my abstract to Rev. Mr. G. Engleheart, of Appleshaw, near Andover, a gentleman whom I feel sure will soon be a high authority on Daffodils. We must probably be contented to wait two years until the question is definitely settled. C. Wolley Dod, Edge Hall, Malpas, Cheshire, May 10.

NARCISSUS ABSCISSUS AND N. BICOLOR. - During the last fortnight, and since writing the notes which appeared on p. 617, I have examined many flowers of N. abscissus, both sent from other gardens and flowering in my own. I find that in size and form they vary considerably, and I believe that further experience will show that the two forms figured as abscissus and bicolor meet. I shall be glad to be told that there is another and a more satisfactory bicolor wild somewhere; but, however this may be, I feel convinced that N. abscissus belongs to the bicolor group, and not to Pseudo-Narcissus, to which it is referred by the "new name" committee. It has the broad thick leaves, the nearly cylindrical and unreflexed trumpet, and the late-flowering habit of the bicolor section, and in colour corresponds exactly with lorifolius and rugilobus, two varieties sold by Mr. Barr, between which I have never succeeded in finding a difference. On the other hand, amongst a large collection of wild N. Pseudo-Narcissus collected from all parts of the kingdom, and from the South of France, I have only found in one instance an approach to the bicolor type in the form of the trumpet, though the white perianth is common frumpet, though the write personne to comment of enough. Mr. Peter Bart, however, is quite right in saying that we must grow these flowers in masses, and in the same soil, before we can fairly compare them. C. Wolley Dod, Edge Hall, Malpas, May 10.

DAFFODILS CHANGING FROM DOUBLE TO SINGLE, AND BACK AGAIN. — It is suggested on p. 616 that double Daffodils may become single through poverty of soil, and still continue to be potentially double. This is a point on which I have made experiments. I find that soil, though apparently poor, may have the doubling property; and, on the other hand, that double flowers may become single in rich soil. The soil of my flower-borders at Edge is very fertile in leaf-producing qualities, but nearly all double flowers have a tendency to become single in it. About five years ago Mr. Archer Hind sent me from Devonshire some double wild Daffodils in flower. They were nearly all of the form which typical N. Pseudo-Narcissus most commonly assumes when it doubles in its native fields. The trumpet, or crown, was quite full, but retained its cylindrical shape. In three years several of these were producing perlect single flowers, a stigma and pollen-bearing anthers being present. Last autumn I sept two or three of these to Mr. Archer Hind, believing that in the soil which had produced them they would recover their double form; and so they did, for at the end of last March he sent me the flower of one of them as double as ever. The Peerless Daffodil is liable to the same changes from double to single, and back again. This year I found a perfectly single flower of Orange Phoenix, from which I am trying to raise a stock of singles. I have before found it so nearly single that the filaments were represented only by rudimentary petals quite at the base of the cup. Mr. Peter Barr has more than once offered to double these again for I never doubted his power of doing so, but I would far rather keep them single. C. Wolley Dod, Edge Hall, May 12.

DOUBLING OF DAFFODILS .- Like many who are interested in the Daffodil, I am an unbeliever in the wonderful transformation, under certain conditions of culture, that takes place in the English Pseudo-Narcissus, passing from a comparatively dwarf plant, and one that will not thrive everywhere, into abscissus, remarkable for its tall growth, large flowers, robust habit, and which will grow anywhere, and withal of a deeper yellow colour. Still, such earnest workers as the Rev. Wolley Dod, and the Rev. E. H. Engleheart, must have good reasons for their firm belief in this extraordinary change. I hope, therefore, that Dr. Foster, and other members of the Council of the Royal Horticultural Society, who are not insensible to the importance of the statements put forth, will see their way to arrange a little conference of those interested in the subject at one of the spring meetings of 1885. Mr. Brockbank could then show us the ripe seed in the capsule of the N. Telamonius plants, and afford further information of changes in Daffodils which he has been noting. P. B.

DR. BROWN'S DOUBLE NARCISSUS NANUS. — Mr. Brockbank (p. 617) refers to flowers from Cork of double N. nanus, I also had flowers sent to me from the same source, and I consider them double Lent Lilies, and perfectly distinct from the flower sent by Dr. Brown to the Daffodil Conference. P. B.

NARCISSUS INCOMPARABILIS SEMI-PARTITUS. At p. 489 reference is made to the above showing symptoms of doubling. I also have a plant with the cup partially filled with florets, and have marked it for observation next year. I may mention that N. incomparabilis semi-partitus is, in my opinion, the single of Codlings and Cream Narcissus. P. B.



THE time has now arrived when the effect of the still beautiful spring bedding plants must be destroyed, to give place to those intended for the summer and autumn display. It seems rash and unjustifiable to adopt such extreme measures while the plants are still so lovely, but where the same garden is made to do double duty there is no alternative, for if the operation of removal is long delayed, the summer plants cannot establish themselves sufficiently early to produce that grand display in summer and autumn, which is expected from them, and of which they are capable when timely planting and due attention is afterwards paid them. These difficulties point most clearly to the desirability of making, where it is possible, the spring and summer gardens distinct and separate from each other; in short, it is only when they are so separated that the full beauties of each can be thoroughly appreciated, not only so, but the positions most suitable, and the surroundings best calculated to heighten and increase the effect of the respective plants used for the two purposes are so distinct, that one garden can never be used for the two purposes without the occurrence of frequent anomalies and occasional disappointment. Assuming that spring plants do occupy the beds now required for the summer plants, no time should be lost in effecting their removal, and in doing this it is highly important that the work should be done in a careful and methodical manner, otherwise not only will the numerous varieties of plants and bulbs become hopelessly mixed together, and be a source of considerable annoyance next year, but if due and timely attention be not paid to their special requirements many of them will die, and thus heavy expenses will he entailed in making good the deficiencies.

In the removal of such bulbs as Narcissus, Crocus, Hyacinths, and Tulips, should the foliage be already yellow or decayed, it will be sufficient to take them up carefully, name them, and then place them on mats or boards in a dry position to ripen; should the foliage, however, he still green and healthy, they should, on being taken out of the beds, be potted in very sandy loam, and then placed in a very warm sunny spot and moderately watered till the foliage dies down, when they may, with the others before mentioned, be placed on the shelves in the root-store until again required. Pansies, Violas, Daisies, Aubrietias, Arabis, Violets, and all similar plants should immediately on removal be cut back, divided where necessary, and transplanted into the reserve beds. They should be watered, shaded from bright sun for a few days until root-action recommences, after which they will give but little trouble, except to be kept clean till they are again required. Primroses, Polyanthuses, and all similar shade-loving plants, will require somewhat different treatment, as the hot summer's sun is more than they can endure without suffering greatly. They should be planted in such borders as receive but a small amount of sunshine; they also should have their bloom-spikes removed; they may also be divided to a small extent, but not very minutely at this season, otherwise they become so weakened as to be of little service for a considerable time afterwards.

As this class of plants is exceedingly useful, because they are so early and so floriferous, great care should be taken to mark, when in bloom, all the best varieties, and also to classify them, so as to keep the special colours distinct. In planting them after division, a good sandy loam should be chosen, with a liberal admixture of well-decayed leaf-mould, a substance which seems especially suited to them. A good packet of seed should be sown every year so as to keep up the

required stock of plants, and from which may be weeded the indifferent varieties as soon as they bloom. The present is an excellent time to do this, and at the same time a full sowing should also be made of the different varieties of Wallflowers, which are perhaps of equal value and importance, for the decoration of the spring garden, as the Primroses and Polyanthus. A warm sunny border should be selected, and as soon as the plants can be handled they should be transplanted into other beds, so as to keep them dwarf and induce them to make abundance of fibrous roots. Harbinger, Veitch's Dwarf Dark, Belvoir Castle Dwarf Yellow, and Goldem Gem, are the most useful varieties for this

As the spring plants are transferred to their summer quarters the beds should be immediately prepared to receive the summer plants, and as this double cropping necessarily impoverishes the soil very rapidly, it is advisable to rectify this, not only by the addition of such manures as will be most suitable to the plants, but also by the addition of new loam; also by these means the soil is kept fertile, without producing that exuberant growth which would result if manures only were applied. T. S. C.

The Pitchen Garden.

ERE this the Seakale season will have terminated, therefore the pots and boxes with which the plants were covered, together with the material which has been used as a covering, should be removed without further delay, if not already done. The flower-stalks on Rhubarb plants, which in some cases will be showing somewhat freely, should be removed as soon as they appear. Young plants of Broccoli, &c., should be pricked out in nursery beds as soon as they are large enough to handle-at all events, before the plants become crowded in the seed-beds—preparatory to being finally planted out. The plants should be allowed sufficient room to develope themselves during the time they are intended to occupy the nursery beds. This is a procedure that deserves more practical attention and adoption than it always receives, for it not unfrequently happens that seedling Broccoli, Cauliflower, &c., are allowed to grow closely together in seed-beds until they are required for finally planting out; and under these circumstances the plants, instead of making a stocky and consolidated growth, become lanky and weak. Early Peas, which are now podding, will be benefited by having an occasional soaking of weak liquid-manure. table Marrow plants should now be planted on the mounds or beds previously prepared for them, and under the protection of hand-glasses. If not already done, plant a sufficient number of Beetroot at the foot of a south wall for seed; and for the same purpose put sticks, one to each of the best formed heads of Cabbage, as a means of indicating their intended use. Where Parsnips are much sought after, a sowing made now will come in well for late use, Asparagus beds should be looked over daily, and have all the "grass" cut as soon as it is fit, washed, sized, and tied up in bundles, and stood on the ends in saucers containing a little water, in a cool room, until required for use.

Continue to make small sowings and plantings of Cos and Cabbage Lettuces at short intervals, so as to maintain a succession. Plant out Cauliflower and Cabbage plants, including the Red Dutch Cabbage, in quantity according to the demand. If transplanted during showery weather they will experience very Make another sowing of Carter's little check. Heartwell Marrow and Wheeler's Imperial Cabbages, to come in for autumn and winter use. Another sowing of Early Horn Carrots for drawing from, and of Early Ulm and Dwarf Curled Savoys for late plantings should be made, as also another sowing of Turnips. Thin out successional crops to 6 or 9 inches in the rows. Sow some more Round Spinach in rows from 12 to 15 inches apart, and clear the ground of the winter crop as soon as the springsown produce is fit for use, and get the ground manured and dug for other crops.

Where former directions in the way of seed-sowing and planting have not been attended to no time be lost in carrying out those cultural should now details in accordance with existing circumstances. Late plantings of both Cauliflowers and Potatos, Brussels Sprouts, &c., will require attention in the

way of earthing-up. Use the Dutch hoe freely among young crops, and let cleanliness and neatness, in addition to judicious cropping, be the order of the day. Look over the crop of autumn-sown Onions, pinch the tops out of those showing a disposition to run, and bend the stems of the others, not only with a view to reducing the chances of their running to seed, but to hasten the development of the bulbs, H. W. Ward.

The Bardy Fruit Barden.

NOTWITHSTANDING the sad accounts of the fruit crops from many low-lying localities, we still hope that many places have escaped the biting frosts which occurred during the latter part of April. Here bush fruits of all kinds will be plentiful, Apricots will be scarce, while Peaches have escaped, and are well set; Pears will be an average, and Apples will again be abundant, as the blossom of many sorts did not open till this month, for-

> " If Apples bloom in May, You may eat them night and day."

The wave of cold has given place to a sudden rise of temperature (86° in the shade), and although this may not last, still we shall be quite justified in removing all coverings from wall trees, carefully labelling and putting them away for another year where mice will not get at them. Where glass copings exist, we would on no account remove them at this time of the year, as they will help to retain the warmth during the night; and although the objection may be made, that the dews are kept off by covering them up, this can easily be made up by syringing with the garden engine between 5 and 6 P.M., in mild weather; this will refresh vegetation, and help to keep down insects, which now abound.

Many wall trees will now push out strong breastwood, especially where root-pruning has been neglected, therefore go over them and pinch the shoots with the finger and thumb. This will save the necessity of using the knife so freely by-and-bye, and make them more fruitful, and the same applies to pyramids and espaliers. The Strawberries promise well for a crop. Our Black Prince on a south border are a perfect sheet of bloom; but as the rainfall in many localities is considerably below the average, it will be well to give the beds a good watering. Weak liquid manure will be beneficial directly the fruit is set, as the juicy fruit cannot be produced in the best condition unless an abundant supply of moisture is afforded. This assistance is most wanted on shallow soils overlying gravelly subsoils.

Where mulching is not finished not a day should be lost in getting it done, thereby retaining moisture in the soil. The black aphis—an insect most difficult to kill-will soon begin to appear on the wall Cherries. Various plans are recommended, but we have found a decoction of home-made tobacco-water to be the best, which can be economically used by dipping the young shoots in the liquid. This plan answers well, more especially if taken in time.

Fig trees may now have all coverings removed from them, and although the tree loves warmth and a rather light soil, yet it is possible for it to "cast its untimely fruit " from want of moisture, especially if the trees are old, and the border in which the roots are is heavily cropped with other things. The crop, which is most promising this year, should be looked after in this respect, more especially it the season should continue dry. 7. Rust, Eridge Castle, Sussex.

SCHIZOCAPSA PLANTAGINEA. - Botanically this plant is of great importance as being the only genus besides Tacca presenting characters of the florat organs so paradoxically like those of the Amaryllis family as to be readily mistaken for it. The deeplylobed or pinnatisect leaves of some species of Tacca, however, and the mode of inflorescence in both, furnish a distinguishing feature at once to class them in a separate order. The greenish flowers are pro-duced in dense involucrate umbels, with long threadlike secondary bracts, which are altogether unique in their way. Several species of Tacca are worth cultitheir way. Several species of Tacca are worth cultivating for their ornamental Aroid-like foliage. Some have entire leaves, but may be distinguished from Schizocapsa by having a berried fruit, while the latter has a dry one.

APPOINTMENTS FOR THE ENSUING WEEK,

TUESDAY, May 20

Sale of Sir William Mariotr's collection of Orchids, and imported Orchids, from Mr. Sander, at Stevens' Rooms.

THURSDAY, May 21

THURSDAY, May 22

FRIDAY. May 23

FRIDAY. May 23

SATURDAY, May 24

SATURDAY, May 24

SATURDAY, May 24

SATURDAY, May 24

Linnan-Society: Anniversary Meeting, at 3 F.M.

W. E frequently hear the expression "the picture of health," and it would seem as if the HEALTH EXHIBITION must be something of the same character, the qualifying epithet, "International," being added, to indicate that artists of various nationalities are concerned in the work. We need not, however, quibble about the name, but as many of our readers may be arranging their plans, and making up their minds what they will and what they will not see in the forthcoming visit to London, we may at once suggest to them, that they are pretty sure to find a great deal to instruct and gratify them in the new Exhibition. Looked at merely as a sight, the wonderful reproduction of a street in Old London is a marvellous piece of realism, whose picturesque effect is all the more delightful from the singular contrast it affords to the essentially nineteenth century surroundings, and, may we add, from the absence of the mediæval cobbles and archaic drainage arrangements. The electric lighting, which is on a scale of unexampled magnitude, the costumes, the dairies in full operation, all these and numerous other matters are sure to attract sightseers, and can hardly fail to add to their stock of information. But it is not of these we would here speak, but rather of those matters more especially within our own department.

The programme of the exhibition is so wide that it might include without violence almost everything that pertains to gardening. Food products from the vegetable kingdom are, indeed, shown in a dried state from a few exhibitors, and doubtless, when the foreign courts get filled up we shall find a better representation of these products than we have hitherto seen in the necessarily incomplete examination we have yet been enabled to make. Decorative gardening is illustrated, so far as space permits, by certain of our leading nurserymen whose exhibits are alluded to in another column, and those who remember the state in which the garden was left at the close of the Fisheries Exhibition — a state in which it remained till a few weeks ago-will be surprised at the eminently satisfactory transformation which Mr. BARRON has effected in a short time. Other phases of decorative and utilitarian gardening will be represented by the numerous floral meetings, and exhibitions of truit and vegetables, which it is intended to hold throughout the season. Horticulture, therefore, is, to some extent, represented among the many elements which contribute to the health of the people—their food, their dwellings, their clothes, their instruction. Subject, however, to what may become apparent later on, when the exhibition is more complete, we venture to express the opinion that horticulture, as a whole, is rather inadequately represented. Considering the enormous importance of open spaces in thickly populated towns, we are surprised to find the subject of town squares, recreation-grounds, and parks, apparently not represented in a "health" exhibition. Detailed examination may, in the future, cause us to modify this opinion and reveal a fuller and better representation of the myriad vegetable substances used for food, clothing, medicine, and economic uses generally, and which are the subjects of cultivation in various countries. China and Venezuela are reported as likely to show well in these departments; but India and the Colonies seem to be inadequately represented.

Messrs. SUTTON and WEBB have done somewhat in this direction, principally from the point of view of agriculture, by exhibiting the stands and class of subjects familiar to visitors at agricultural shows, including samples of ensilage at present not so familiar. Messrs. CARTER & Co. have gone beyond this, and surprised us by an exhibition of samples-small indeed-of numerous vegetable products which we do not usually meet with on the stands of agricultural seedsmen. Messrs, Christy & Co. have a small case well filled with interesting objects of this character, many of them comparatively novel, and, what is more, they invite the visit (by previous appointment) of those interested to Malvern House, Sydenham, where many of the plants yielding the products in question may be seen in cultivation.

Now that so much interest attaches to germs and Bacteria, it may be well to call the attention of those who would like to know what they are like, to some admirable models in, we presume, the German (Prussian) Court-we say presume, for the geography and topography of the Exhibition in its present state are rather obscure. The models in question represent the Bacteria and their allies magnified some 25,000 times, but even with this enlargement they are not thicker than the finger, and do not look the direful things they really are.

We have frequently had occasion to call attention to the utter want of any thorough systematic instruction in the principles and practice of gardening in this country, and to contrast it with the different state of things in Belgium, France, Germany, and the United States. It was with additional pleasure, therefore, that, on passing into the Belgian Court, we lighted upon a large model in relief of the School of Horticulture at Vilvorde, with its lecture-rooms, museum, kitchen garden, orchard, fruit garden, flower garden, and plantations. The model is, as we have said, of very large size, and may serve to give an idea of the kind of establishment our neighbours think requisite for the training of the gardeners of the future. From a tabular statement attached we find that in this garden, presided over by Mr. GILLEKENS, there are 1662 varieties of Pears under cultivation, 597 sorts of Apples, Peaches muster 154 sorts, Plums, 145; Cherries, 151; and so on in proportion with other fruit trees. Of vegetables 804 sorts are grown for comparison and trial, 648 ornamental trees, and

Of the numerous exhibits connected with construction, heating, ventilation, and drainage, we may now and then find occasion to speak; suffice it now to repeat that not only the general visitor but the gardener in particular will find plenty to engage his attention in this new Exhibition, apart from the ordinary shows of the Royal Horticultural Society, which will be held in the great conservatory.

- PÆONIES.-Now that garish Sunflowers have enjoyed the sun of popular favour, and the modest Daffodil has been suddenly lifted, to its own regret we imagine, to notorious prominence, we may expect the gorgeous Pæonies to have their turn. For boldness of form and superb coloration there are no plants to equal them, and, moreover, they are absolutely hardy, and though repaying the outlay of a little manure, and a little labour expended on the soil, require as little in the way of cultivation as any border flower we know. They may be grown in heds or borders in well-trenched, rich soil, or they may occupy the front of shrubberies. Occasionally they are planted in woodland walks, in the grass by the side of carriage-drives and similar situations, but, to our thinking, nowhere is their extraordinary brilliancy of coloration so. effective as when grown in the full sunshine. Their great fleshy roots resemble Dahlia tubers, but need no such protection as we are wout to give to the latter. P. officinalis, a native of Central and Southern Europe, has furnished our gardens with numerous variations in the colour of the flower and also in the The hairy seed-pods, lined amount of doubling. with red, and with scarlet axils to the dark blue seeds, are almost as attractive as the flowers themselves. tenuifolia, a species native of Hungary and Southern Russia, has somewhat smaller flowers than the preceding, equally rich, but less varied in colouring; the foliage is cut up into numerous very narrow segments, like those of the leaf of Fennel. P. corallina is a native of Southern Europe, with less deeply divided leaves than P. officinalis, and bright red flowers. This species, shown in the upper part of our illustration (fig. 124), has been naturalised on an islet in the Severa, but is not considered to have any claim to be rated as a native plant. P. Wittmanniana is remarkable for its pale yellow flowers. In all the preceding species the stalks bear solitary flowers, but in P. albiflora the stem branches at the upper part into a number of stalks, each surmounted by a large whitish or rose-coloured fragrant flower. Numerous varieties of this species (a native of China) exist in gardens, ranging in colour from pure white and pale yellow to deep purple. The flowers, which are produced later in the season than the foregoing, have considerable resemblance to those of the Moutan, or Tree Pæonies, which, though slightly more tender than the perennial species, are so strikingly beautiful that it is a marvel that their cultivation should have so much declined of late years. What are called hybrid Pæonies are, we believe, for the most part selected seedling variations from P. officinalis or P. albiflora. No hybrids of this genus are mentioned in Dr. FOCKE's enumeration of known hybrids, though many such are enumerated in nursery catalogues.

- AWARDS OF THE FLORAL COMMITTEE,-We are glad to be able to announce that the Royal Horticultural Society has at last published what has long been badly wanted—a complete list of the awards made by the Fruit and Floral Committees from 1872 to February 12, 1884. It is published at the Society's office, at the price of 1s.

- Mr. J. VAN DER SWAELMEN, of Ghent, has, we hear, been appointed by the French Government a Chevalier of the order for "Mérite Agricole."

--- FRUIT PROSPECTS IN THE LOTHIANS. - A Midlothian correspondent writes :- "I am glad to say that we have, to a great extent, escaped the great damage done to the fruit crop by the late frosts in England. Although we had 9° of frost on April 25, the fruit-blossom suffered less than usual, owing to the dry state of everything at the time. Generally around here there appears to be a full crop of hardy fruit in most gardens and orchards, and surely we are safe now from frost. For the past week the weather has been uncommonly genial, and vegetation is rushing ahead.'

- Anthurium Scherzerianum giganteum, PINCE'S VAR.—A fine spathe, measuring 6 ioches in length and 3 in width, of a dark blood-red colour, comes from Messrs. Lucombe, PINCE & Co., of Exeter Nursery. It is a very fine variety, and the immense spathe sent is said to be of the ordinary quality horne by this form. The West of England is rich in fine varieties of this plant, the one of which Messrs. Lucombe, Pince & Co. send the spathe and the famed variety of CYPHER of Cheltenham being two of the very best.

- DAMAGE TO TREES .- One of those now too common cases in which owners of trees are made to suffer loss through the act of some manufacturer or other person engaged in an offensive business came before the Queen's Bench Court of Justice a few days since. The plaintiffs are owners of market orchards at North Hyde, Middlesex, let to Mr. WILD, a market gardener, and the defendant is a brick-burner. The plaintiffs alleged that through the contiguity of the brick-kilns the adjoining fruit trees were seared or burned, the leaves blackened, and the fruit prematurely dropped. The claim was for £100 damages, and the injury done to the trees seemed to be clearly proved. Curiously enough, in what might be well regarded as a simple matter of fact and nothing more, there was no lack of evidence to show that no injury whatever had been done. As the damage referred to last year's produce, it must be admitted that the pre-sent was not the most desirable time for adjudicating on



Fig. 124,—single pæonies. (see p. 644.)

the matter, as now the kilns are not being employed. Had the case been tried a few months hence, when the kilns are in full operation, ocular demonstration might have been obtained by both judge and jury, were they willing to ascertain the facts as to which body of witnesses were in the right. Really, cases of this sort seem simple and straightforward enough, and yet lead to as much hard swearing as some running-down action. If trees suffer specially, the inference naturally is that special causes have operated to produce the injury, and here that inference was strongly supported by the nearness of the brick-kilns. That these emit gases or fumes of the most deleterious kind we know from practical experience, and their immediate contiguity to vegetation or human habitations must always be a source of danger.

— THE REMOVAL OF A GREENHOUSE,—At High Ashurst, Dorking, the residence of the Hon. H. D. Ryder, an ornamentally constructed span-roofed conservatory, 32 feet by 18 feet, consisting entirely of iron and glass, and having a fixed roof and side sashes, has recently been lifted from off its brick bed, and transported to a new site. The work, which, owing to the rapid ascent of the ground, presented considerable difficulties, was concluded successfully, with the trifling damage of two broken panes, by Messris, J. Gray & Sons, of Danvers Street, Chelsea, S.W.

— JUNIPERUS SINENSIS AUREA, — This smallgrowing coniferous shrub is of a rich golden hue which has the desirable quality of constancy, making the plant presentable at all seasons alike, thus differing from Thuia aurea sinensis, which is only truly golden when growing. It will find its place either in groups or masses in the winter garden arrangements, for which it is well adapted, and when of due dimensions as an isolated plant for the house, garden, or small partere.

--- MEAT FOR TREES .- The belief in the carnivorous requirements of trees has not quite become an exploded matter in some parts of the Continent, if it has fortunately been banished from amongst ourselves. Many of the older members of the craft could tell some singular doings as to root feeding that occurred in the earlier years of this century, which would fairly pair off with the following :- A gardener in Prussia pair on with the ionowing: —A gardener is repossessed an old Apple tree of the there well known Red Stettiner kind, which, in spite of all his care and endeavours, refused to bear fruit, but yet made very strong wood. In this difficulty he tried the effects of ringing the bark, but with but little resultthe tree bore a few fruits, of which some fell off during the summer; but this was not the effect of too great a flow of sap, the ringing having possibly prevented that. It occurred to him at last that the roots were not obtaining the necessary food, and just then a horse died; this was cut up into pieces and buried in the soil round the tree, about as distant from the bole as the branches reached. The results that followed this operation were astounding, for the hitherto unfruitful tree has borne splendid crops of fruits ever since-of course, thanks to the buried horse-beef in its larder.

— ROYAL METEOROLOGICAL SOCIETY,—At the ordinary meeting of the Society, to be held at 25, Great George Street, Westminster, on Wednesday, the 21st inst., at 7 P.M., the following papers will be read:—"Note on the Proceedings of the International Polar Conference, held at Vienna, April, 1884," by ROBERT H. SCOTT, M.A., F.R.S., President; "Meteorological Observations on the Maloja Plateau, Upper Engadine, 6000 feet above the Sea," by A. Tucker Wise, M.D., F.R. Met. Soc.; "On some Results of an Examination of the Barometric Variations in Western India," by A. NAYLOR PEARSON, F.R. Met. Soc.; "Illustrations of the Mode of taking Meteorological Averages by the Method of Weighing Paper Diagrams," by RICHARD INWARDS, F.R. Met. Soc., F.R.A.S.; "Ten Years' Weather in the Midlands," by RUPERT T. SMITH, F.R. Met. Soc.

—— HEREACEOUS CALCEOLARIAS.—In Mr. H. B. SMITH'S new nursery at Hanwell there may be seen some 2500 plants of Calceolarias, the most forward of which are quite ready for market, with others coming on to succeed them. They illustrate in a remarkable manner what a market grower can produce in a 48-sized put. One long span-roofed house, with a flat stage on either side, is full of many

hundreds of these plants, and the strain is remarkable because of the half-shrubby character of the plants, their uniform growth, the fine trusses of bloom, the size and shape of the individual flowers, and the marvellous variety of colours. The height of the plants averages 9 inches, a very few rise to 12 and 15 inches, but these will be rejected for seed purposes. The prevalence of dark, and especially of purple colours, is striking. In collections of her-baceous Calceolarias one frequently notes the undue predominance of yellow flowers, which serves to give a character of sameness to a group, but no such disposition strikes one at the Hanwell nurseries. A number-say 200 or 300-had been shifted into 32-sized pots, and have grown charming specimens, without any sacrifice of the dwarf habit of growth, but as this size of pot is too large for market purposes the great bulk will remain in puts of smaller size. The seeds were sown about the first week in September; as soon as the little plants were large enough they were pricked off into store boxes, then placed singly in thumb pots, and finally shifted into 48's. Thus in the short space of eight months charming plants can be had, and if they had been shifted a little more frequently they would have been some way towards reaching good specimens.

—— AMARVLLIS BELLADONNA.—The mild winter was favourable to a wonderful development of growth in these plants: they may be said to have put forth in early spring an unusual harvest of strong foliage. On the fine border of this plant at Gunnersbury Park this can be witnessed, and next autumn there should be a harvest of flowers of unusual quantity. It has now been planted something like six years, and the surface is literally covered with vigorous leaves. The border was thoroughly planted in the first instance, and Mr. ROBERTS expects it to last another half-dozen years before it will be necessary to lift, divide, and replant.

—— HULL BOTANIC GARDEN.—Schedules have been issued for a flower show to be held in these gardens on July 2, 3, and 4.

- APPLES IN NORTHERN FRANCE. - The Apple crop in this country last year was an exceptionally good one, and the same seems to have been the case in Northern France. In the Department of La Manche it was unprecedented, and was gathered in excellent condition. As in the South a good Grape year brings wealth and happiness in its train, so certain parts of Normandy and Brittany a favourable Apple season is an earnest of contentment and comfort for almost all classes in these parts. Cider is the only drink of the country, and its price is an important factor in household expenses; besides, most farmers have orchards, and it is observed that when the crop is large the quantity more than compensates for the fall in price which accompanies a favourable season. In 1883 Apples were readily sold at 1 f. 50 c. for 100 litres, and up to 2 f. for good samples. As a result, the cost of cider has been reduced, and this wholesome beverage is now within the reach of even the poorest of the people.

— Anemone Favonia.—This, which is known also as the Peacock Anemone, is a singular variety, though doubtless closely allied to the common garden type. Mr. H. B. SMITH has a large piece of it in his nursery at Hanwell, and finds the flowers to sell well in Covent Garden. It is double in character, having a margin of rich red segments, with a very close and compact centre of bright green petals, of such a hue of green as one would like to see on a green-edged Auricula. In good ground it grows to a height of from 8 to 10 inches, and it is very free of bloom. It makes charming patches in the open border, and apparently the best way to manage it is to plant it in good soil, and permit it to remain undisturbed. Gardeners will find it very useful to grow in quantity to cut from.

— CYCLAMEN PERSICUM SEEDING.—Those who have experience of this plant when it is forming its seed-pods know that it is of frequent occurrence that the stems of the seed-pods turn soft, and a kind of rot sets in which causes the loss of the pods. Now, if the rotting stalks come into contact with other stalks the element of decay is imparted to them, as if there was a kind of infection through the contact. At this season of the year growers of Cyclamens—who, by the way, are careful not to overburden their plants with too many seed-pods, six or eight being

ample—go carefully over their plants, taking care that no seed-stem is in contact with an affected one, and laying them regularly round the plant away from each other, so that this cannot possibly happen. By this means valuable seed is saved which might otherwise he last.

— CHOISYA TERNATA.—The more one sees of this plant the more one is struck with its great usefulness as a decorative subject, and for cutting from at this season of the year. Mr. J. ROBERTS has some charming specimens in one of his plant-houses at Gunnersbury Park, plants of a bushy character, and flowering very freely. The plants are kept in small pots, and planged in the open air in summer; this induces a short stocky growth and the production of flower-buds, and the trusses are as plentiful as any one would well desire to see them.

— ADIANTUM MUNDULUM.—What a beautiful Maidenhair this is, and were it appreciated as it should be it would displace the valuable old A. cuneatum to a great extent. It has smaller pinne than this: they are of a triangular form, and apparently intermediate in size between those of A. cuneatum and A. gracillimum, and there is something more to be said for it—it stands well in a cut state, and is charming for backing up buttonholes.

- FREESIAS, - These are such beautiful subjects that it is no wonder they stand so high in the estimation of lovers of Cape bulbs. Mr. ROBERTS grows these and other Cape bulbs with great success at Gunnersbury Park. F. Leichtlini is very beautiful, the flowers being white or pale creamy-yellow, with a rich yellow marking or blotch on the lower segments. F. reracta alba is longer in the flower, and is very pleasing With these are associated two very pretty Sparaxis, viz., Josephine, white, with yellow centre; and Leopard, primrose, with deep golden centre. Another very showy form is S. tricolor, with its red, white, and golden flowers. Ixias are rapidly coming on to succeed these. Really there is no difficulty in growing them treated as they are at Gunnersbury. A few bulbs are placed in a 48-sized pot, a nice light free soil being used, and batches are pitted successionally through the autumn; the pots are placed in a cold frame, where they are wintered, and as they advance in growth they are taken into a warm house to flower. It can scarely be said they are forced; but they expand their flowers a little earlier through being in a comfortable temperature.

— CATALPA TREES IN NEW SOUTH WALES,—
Recent advices from New South Wales state that the
Catalpa trees (C. speciosa) which have been introduced
from America—in the forests of which they form some
of the most valuable trees—are in a very flourishing
state, beiog remarkably healthy and vigorous in
their growth. The tree is described as being remarkable for its durability and size, and for its imperviousness to damp. It is considered especially
suitable for the construction of bridges, railway
sleepers, and all other purposes where a hard and
durable wood is required. The tree has succeeded so
well in the plantation where it has been introduced
that it is intended to extend it to other parts of New
South Wales.

- KALANCHOE GRANDIFLORA, -If allowed to cumber the house on the make-shift sort of system, as plants of this character often are, nothing is more damaging to their reputation, while, on the other hand, a little attention to their requirements produces surprising results. The present plant is no exception, and the shrubby stems, together with the glancous metallic hoe of the leaves, furnish a distinctive feature well worthy of attention for mixing even with conservatory plants of more slender and graceful habit, if a separate structure cannot be devoted to succulent plants. The terminal cymes of large yellow flowers are conspicuous enough to attract attention, while a sweet and agreeable odour pervades the atmosphere in which they are grown. In the succulent-house at Kew two forms have been flowering for some time, the one having short broad petals, while those of the other are much parrower and longer, and evidently less odoriferous.

—— PLANTING BURNHAM COMMON.—Messrs, LITTLE & BALLANTYNE, of Carlisle, have just completed on the common adjoining Burnham Beeches a scheme of planting which will be very interesting to Londoners especially. The scheme, says the Times, consists in the covering of the common with some fifty groups of Beech trees, planted in irregular outline, and in the planting, in addition, of 5000 young Beech and Oak trees. The latter are placed promiscuously over the common, and are from 12 inches to 18 inches in height. The trees in the groups are larger, about 4 feet high, and each group contains from fifteen to twenty-five trees. Landscape effect in the future has been an important object in the arrangement.

—— A New Brownea.—Mr. Bull. has a new Brownea in flower—a hybrid between B. grandiceps and B. Arhiza, and which in habit is quite intermediate between its parents, with a dense terminal head of bright carmine flowers. Browneas flower so seldom and especially in a young state, that the instance is worth recording.

—— FIG NEGRO LARGO.—This excellent variety is fruiting with marvellous freedom in the Fig-house at Gunnersbury Park. The plants are in pots, and Mr. ROBERTS states that though he has tried various means of fruiting it when planted out, he cannot succeed in doing so, while in pots it is all he could desire. Overhead, from the large planted-out trees of White Marseilles and Brown Turkey, he is taking heavy crops; and these trees, always burdened with fruit, appear to be even more prolific in bearing this year.

ACANTHOMINTA ILICIFOLIA,—"A singular little plant, with much the habit of a small Lamium, and a faintly aromatic smell." The whorled flowers are purplish, like those of the common purple Dead Nettle. Native of southern California. "The chief interest of the plant is botanical as being a monotypic genus, the affinities of which are with a genus of far distant tropical Brazil. Betanical Magazine, t, 6570.

—— LABICHEA LANCEOLATA.—A West Australian leguminous plant, closely allied to Cassia, but having only two stamens. The glossy leaves are three-foliolate, the central one five or six times longer than the side ones. The flowers, about \(^3\) inch in diameter, are of a yellowish colour, and produced in abundance. A very desirable greenhouse plant, Botanical Mogazine, t. 6751.

— COFFEA TRAVANCORENSIS is a small South Indian species, with leaves of variable form, generally more or less elliptic, and with numerous white salvershaped flowers. Botanical Magazine, t. 6749.

—— SKIMMIA OBLATA.—An excellent under-shrub for winter gardening, for the furnishing of small beds, or for forming a border to large ones. The foliage is neat, therefore not likely to be injured by wind. It is perfectly hardy, and flowers profusely, but sets no berries, as its congener, S. japonica, does; for that we must await the arrival of its mate, as we were compelled to do in the case of the Aucuba.

— TORENIA FOURNIERL.—"The most beautiful species of the genus often confounded with T. asiatica, from which it differs wholly in the terminal and more or less racemnse inflorescence," and with "no tooth at the base of the longer filaments." The plant was introduced from Cochia China by M. GODEFROY, and sent out by M. LINDEN. The upper lip of the flower is pale lilac, the lower bright violet, the central lobe having an orange blotch at the base. Botanical Magazine, t. 6747.

— CINERARIAS IN THE OPEN AIR.—A Chepstow correspondent writes:—"A Cineraria is now in bloom, that has been out the whole winter in a sheltered place in a garden in Gloucestershire."

LINNEAN SOCIETY.—The anniversary meeting of the Linnean Society will be held on Saturday, May 24, at 3 P.M.

--- THE SALE BOTANICAL SOCIETY will hold its second horticultural exhibition in the Botanical Gardens on June 19, 20, and 21.

— RANSOMES, SIMS & JEFFERIES, LIMITED.— We are informed that, on account of the continuous extension of their business, and the desirability of fixing the capital employed in it, Messrs, RANSOMES, HEAD & JEFFERIES have converted their partnership into a private limited company, constituted under the Companies' Acts, 1862 to 1883, which has been registered, and will be henceforward carried on under the name of "RANSOMES, SINS & JEFFERIES, Limited." The new company has acquired all the assets, and will discharge all the liabilities of the partnership. The management of the business of the company will be continued by the partners of the late firm, viz.:—ROBERT CHARLES RANSOME, JAMES EDWARD RANSOME, JOHN ROBERT JEFFERIES, who, together with Mr. WILLIAM DILLWYN SIMS, and members of their respective families, are the shareholders in the new company.

- MAXILLARIA LUTEO-ALBA.-A large number of the species belonging to the genus Maxillaria are by no means looked upon with affection by most Orchid growers. The species, however, named at the com-mencement of this note is handsome enough to deserve a place in any collection of showy Orchids, and is wonderfully different from the small-flowered dull-coloured epiphytes which are generally associated with the genus Maxillaria. It is, moreover, a free grower, and a profuse bloomer. The large flowers are borne on scapes 6 inches or more in length, and last a considerable time when cut. The sepals and petals are yellowish-brown; the lip is yellow, margined with white, and the throat is striped with purple. Some short time ago Mr. WILLIAMS was awarded a First-class Certificate at the Royal Horticultural Society for a plant of this species. A good figure is given in WARNER'S and WILLIAMS' Orchid Album, tab. 106.

THE WEATHER, -General remarks on the temperature, rainfall, and duration of bright sunshine, for agricultural and sanitary purposes, during the week ending May 12, 1884, issued by the Meteorological Office, 116, Victoria Street, London, S.W.: -The weather varied greatly in different localities and on different days. During the first part of the time it was generally cool, cloudy and showery; but subsequently it became very fine and warm at all except our extreme north and south-west stations. By the close of the period, however, it had again become unsettled, and over the greater part of England sharp thunderstorms were experienced. The temperature has been 1° below the mean in "Scotland, N.," and about equal to it in "Scotland, W.," and "England, S.W."; but from r to 3° below it elsewhere. The maxima, which were generally registered on the 11th, were unusually high, especially over the north-west, central, and south-east parts of England. At Bawtry the thermometer rose to 83°, at Newton Regny to 80°, at several of our south-east stations to 78° The minima were recorded either on the 6th or 7th, and varied from 29° in "Scotland, E.," to 31° in "Scotland, N.," and "Ireland, S.," to 43° in the Channel Islands. The rainfall has been .rather more than the mean in Scotland and the North of Ireland, and about equal to its normal value in "England, N.W.," and "Ireland, S.," but less in all other districts. Bright sunshine has been much more prevalent than during last week over Central, Southern, and Eastern England, and in the Channel Islands, but shows no material change elsewhere. The percentage of possible duration varied from between 21 and 27 in the northern and northwestern parts of the kingdom, and 55 in "England, E.," and 62 in the Channel Islands. Depressions observed :- At the opening of this period a disturbance was passing away from our neighbourhood in a north-easterly direction, and the barometer in our islands and France was rising, with moderate northwest breezes. By the morning of the 7th, however, pressure had given way briskly on our western coasts, and during the remainder of the week a series of depressions, travelled north-easterly over or to the westward of our extreme north-west and west coasts, while over France and the south of England the mercury was comparatively high and steady, south to south-west winds, fresh or strong at times in the west and north-west, consequently became general over the United Kingdom, but the formation of some thunderstorm depressions over the south-east of England and north of France on the 12th caused the direction of the wind over England to vary considerably.

— GARDENING APPOINTMENT. — Mr. T. Do-HERTY, late Foreman to Mr. LETTS, Aske Hall, Richmond, Yorkshire, has been engaged as Gardener to Lord NORTH, Wroxton Abbey, Banbury, in succession to Mr. FINLAY, who is seeking another engagement.

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ALPINE AURICULAS.—In the group of these shown by Mr. C. Turner, of Slough, at the Royal Horticultural Society's meeting on Tuesday last, were a few pretty varieties deserving a passing note. The following were all shaded flowers with golden centres:—Mrs. Ball, very pretty indeed; W. H. Grenfell, Titian, Unique, very fine, a beautiful exhibition flower; Nemesis, King of the Belgians, extra fine; Model, the centre creamy-yellow; and Homer, very rich in colour. Of shaded flowers with creamy-white centres the following are very good:—Jewel, Corsair, Queen Victoria, and Mrs. Dodwell. To those contemplating making a collection of alpine Auriculas it may be said that the shaded flowers take highest rank for exhibition purposes. Most of the foregoing are new varieties not yet distributed, but when announced they may be added to collections with advantage.

NEW TREE CARNATIONS .- It was but a few blooms of these Mr. Turner had on Tuesday last, but they served to indicate the qualities of size, form and varieties. Mrs. Maclaren, to which a First-class Certificate of Merit was awarded, is a crimson bizarre, flaked with rosy-pink and purplish-crimson on a white ground, large full flowers, stout and finely rounded petals. One bloom of this variety had a blush ground very delicately tinted with purple, and with stripes and flakes of rich deep purple; in this character it was very attractive indeed. Mrs. Llewellyn is a fine variety, a self of a purplish-rose hue. Ruby is a bright purple self, full and striking; Negro is a deep crimson self, the petals nicely fimbriated; in this character it is highly attractive. Rufus is very rich in colour, brilliant scarlet, with a slightly fimbriated edge, charming to look upon, and deserving a place in every collection. Mrs. Dix is heavily suffused with orange-red, a fine full flower. Le Perle is smaller in size, pure white ground, with a kind of edging or lacing of small flakes of deep pink-a very good lot

THE NEW DAHLIAS OF ISSA. - These, if not very numerous, yet include some varieties of which raisers and distributors may reasonably be proud. The fact that new varieties are few may be taken as illustrating the fact that it is now difficult to produce varieties that mark distinct advances upon existing varieties, and therefore those who send out new Dahlias are cautious in selectiog what they shall distribute. Sometimes a flower showing great promise when exhibited for the first time becomes, perhaps by reason of excessive propagation, or from some other cause that Nature prefers to keep as a secret of her own, deteriorated, and is found quite disappointing upon trial; another, thought to be scarcely above the average, yet under careful cultivation flashes out into a variety of such unexpected quality as to be a veritable floral surprise, and these contrarieties are confined not alone to the Dahlia.

Foremost among the new varieties now being distributed by Mr. Turner must be placed Mr. W. E. Gladstone. This was shown and certificated at the Dahlia show at the Crystal Palace last September under the name of Mrs. Hurst, the wife of the raiser, but was subsequently changed to Mr. Gladstone, under which name it was certificated by the Royal Horticultural Society. It is a charming delicate flower of an exceedingly pleasing character, and perfect in form; the ground colour delicate soft fleshypink, which when shaded becomes even more delicate It is a jewel among show flowers, and it is regarded as very constant, good habit, 4 feet in height. Muriel Fellowes is a full-sized, well formed yellow self, that must prove as useful in the flower garden as in the exhibition stand; it comes of a good size, is very constant, and grows to a height of 3 to 4 feet. Ruby Gem (Harris), will be remembered by some as a rubycrimson ground flower, with a small yellow tip to the petals, reminding us of Stafford's Gem; distinct, good outline petal, and centre. These three form Mr.
Turner's trio of new show varieties for the present

Messrs. Keynes & Co. have eight varieties, seven of which are of their own raising, viz.:—Dewdrop, dark primrose, a pleasing self of good properties, likely to prove very useful; Lucy Berry, lilac, suffused with white at the base of the petals, fine form, perfect outline and high centre. a flower likely to give general satisfaction; Mrs. F. Foreman, a large bright lilac self, rich in colonr, good form, and a useful show variety; Mrs. G. R. Jefford, a deep yellow self, of excellent properties; Mrs. W. Haskins, a very pretty fawn coloured flower, distinct, good in every respect, first-class in petal and outline; Mrs. Staples, yellow ground, edged with crimson, a neat, well-formed flower of pleasing character; and Statesman, a large purplish-crimson self, constant and useful. The last of the floral octave is Grand National (Eckford), a large yellow self of good form and quality, of good habit and dwarf growth.

Of new fancy Dahlias, Mr. C. Turner has one, viz., Duchess of Albany, one of the sports from Gaiety, but in this case the flowers are striped with rich crimson on a pale orange ground, there being an absence of the white tip: a pleasing and distinct flower. Messrs. Keynes & Co. have four, viz.:—Arabella, buff, with scarlet and crimson stripes, good form; Alderman, lilac, heavily striped and splashed with purple, pretty and distinct; Goldfinch, yellow, striped with purple and tipped with white, a pretty and somewhat curiously marked variety; and Lotty Eckford, white, beautifully striped with purple, good form and very attractive. All the new facey varieties are of quite dwarf growth, and among the new Dahlias of the past few years can be detected a marked disposition to throw their flowers fully erect, which feature adds greatly to their value as decorative plants. K. D.

Notices of Books.

The River Congo, from its Mouth to Bolobo, &c. By H. H. Johnston, F.Z.S. (Sampson Low & Co., 1884.)

It is unfortunately notorious that a book of travel is usually unsatisfactory. Either the traveller is a bad observer, unable to see, incompetent to appreciate what he does see, without sense of proportion, and ignorant of what is likely to interest the reader; or, if he be possessed of the requisite knowledge and powers of observation he may lack the faculty of laying before the reader in an interesting form the results of his investigations. Mr. Johnston belongs evidently to a different type. He is full of intelligence and zeal; he knows what to look for, and how to look at it; he admires, or at least appreciates all he sees, and his pages happily reflect the buoyant zeal of his temperament. The consequence is that we have a book of travel that is not only full of valuable in-formation, but which is as readable as a novel—a great deal more so, indeed, than most. In most books of this character—especially those written by sportsmen-the reader lays down the book with a feeling of regret that such opportunities should fall to the lot of those who can turn them to so little account for the benefit of others. In other cases we are tantalised by glowing descriptions of bird or plant, so drawn up that no mortal can form an idea what the creature or the plant really was. We do not grudge these gentlemen their travel nor their sport, but they need not write books. On the other hand, we bave reason to be thankful to Mr. Johnston for his accurate word painting no less than for the delightful freshness and vigour of his style. "I have merely tried," the author says, "to produce with pen and brush an ordinary guide-book to the Congo which may convey to intending travellers or stay-at-home folks a fairly just impression of the great river. All that is written or drawn within has been directly done from Nature, and the faultiness in it arises more from incompleteness of detail than from incorrect outline." Such is the author's too modest account of his book, the perusal of which leads us to say that the so-styled incompleteness of detail is in this case an advantage rather than otherwise to the general reader, for whom the book is written, while the firm, evidently truthful outline serves admirably to give the reader a distinct impression of the nature of the country traversed, and of its main features, physical and vital. Starting from Angola, Mr. Johnston made his way northwards to the month of the Congo, and then passed along the course of the river eastward as far as Bolobo, some course of the river eastward as are as botton, some 300 miles from the coast. From Sierra Leone down to some 4° or 5° south of the equator the dense tropical forest—the abode of the gorilla—skirts the coast, extending inland as far as the Victoria Nyanza

and Lake Tanganyika. To the south of this is a 'savannah" country, less densely wooded and more "park-like" than the former region-a designation, says the author, "which its open grassy spaces and formal groups of shady trees amply justify." Through this district, abounding, as we shall see, in interesting plants, many of which have been made known to us by Welwitsch, Mr. Johnston passed on his way to visit Mr. Stanley and the various mission stations of the African Association, established under the auspices of the King of the Belgians. South of this a tract of sparse vegetation and scanty rainfall occupies the coast live, and this in its turn shades off into sandy wastes, with little or no rainfall, and consequent paucity of vegetation. Here is the home of the Welwitschia. But the interest of the present volume lies entirely in the park-like district through which the lower Congo flows. What it is like we had better let Mr. Johnston tell for himself. He has scarcely got heyond the mouth of the river at Kissangé when he writes thus :-

ing flower-stalks, grow in groups of forty or fifty together, often reflected in the shallow pools of stagnant water round their bases and filling up the foreground of the high purple-green forest with a blaze of tender Peach-like colour. Higher up the Congo, near Stanley Pool, this is what the author says:—

"On this point, rising nearly perpendicularly from the water, the forest climbs the hill-sides, higher than the eye can reach, without a single break in its Inxuriance, The variety of colours, too, at this season, when most of the trees are in blossom, is particularly striking. One tree will be covered with scarlet flowers scattered with a liberal hand, another has pendulous flowers cat prinkywhite hanging gracefully by their long stalks amid the sombre mass of foliage, while errant creepers in exuberant growth trail their yellow and purple blossoms over the victims they entwine. There is every note struck in the gamut of green, and the trees that form this mass of foliage may vary in tone from blue-green to greenish-yellow, and from greenish-white to russet-red, and they will differ equally in form and aspect. While some are compactly massed in their leafage, others grow errati-



FIG. 125.—CRINUM ZEYLANICUM.

"Our adjectives are too puny to describe fully the vegetation of such places as Kissangé. We want to express ourselves in the tongues of Central Africa, which have sometimes seven different terms to express different kinds of forest. . . There is a splendour of vegetable growth that defies an adequate rendenng either with the brush or the pen. The hot sun and the ozy mud call into existence a plant-life which must parallel in rank luxuriance and monstrous growth the forests of the coal measures, and reproduce for our eyes in these degenerate days somewhat of the majesty of the vegetable kingdom in bygone epochs,"

Again, as to the floral display, which some writers have rather disparaged, Mr. Johoston tells us that "in Tropical Africa, at least, is iovalidated the theory of some naturalists, that the equatorial region cannot offer flower shows like those of the temperate zone." Among these flowers the terrestrial Orchid, Lissochilas giganteus, which shoots up to a height of 6 feet from the ground, greatly struck Mr. Johnston, bearing as it does "such a head of red-mauve golden-centred blossoms as scarcely any flower in the world can equal for heauty and delicacy of form. These Orchids with their light green spear-like leaves and their tall sway-

cally and in disordered tufts. Beautiful Mimosas dominate their fellows clothed in foliage of dark green velvet; Draceenas raise their spikey heads here and there from out of the soft, verdant mass. The large flat leaves of a Fig alternate with the feathery Palm fronds, while many stems are completely disguised by the network of graceful creepers which masks them like a vegetable cobweb. The Calamus Palm makes a sort of latticework fence, rising straight up from the water's edge, and seems effectually to forbid trespassing in these fairy forests, while along the river's brim lines of white Lilies (Crinums) stand like sentinels to see the barrier is not passed." (Fig. 125.)

For absolute gorgeousness, however, nothing can compare with the fruits of the Cucurbitaceæ, with their rich colours to attract the attention of birds,

How good an observer the author is may be illustrated by what he says about the Dracemas and the succulent Euphorbias, which he never saw in a wild state, but always in the immediate vicinity of villages or habitations, the explanation being that the uninhabited portion of the country is periodically set on fire by the natives, so that only in those places which the bush fires do not reach can rich vegetation and

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forest trees exist. How far these bush fires account for the growth of the terrible grasses we do not know; at any rate, the author speaks in no measured terms of the annoyance caused by them in the endeavour to force a passage through their densely tangled stems, their sharp cutting leaves, and irritating barbs.

"Moreover, the grass effectually shuts out all prospect of one's surroundings, and harbours and conceals snakes, buffalos, and hostile natives. I do not know a more despairing outlook than on arriving at the top of a hill in Africa, to look down on a tract of waving grass. If be a lake you can cross it in cances, or go round it; or if you look forth on a sterile desert, you feel you may hurry over its sterility and at least see your way before you. But grass! How are you to know what danger it does not veil? Quagmires, pitfalls, human enemies, or noxious beasts.... When it is dry it cuts you like

most magnificent member of the Congo flora," a circumstance which the illustrations would not of themselves lead us to infer. Numerous Palms are mentioned, in particular a Hyphene, supposed to he H. ventricosa, and of which, by the courtesy of the publishers, we reproduce the illustration (fig. 126). This is a most beautiful and majestic Palm, 30 to 60 feet in height, with bluish-green fan-shaped fronds, and clusters of yellow fruit about the shape and size of a large Apple, with a thin sweet pulp surrounding a hard ivory-like stone. Of this fruit the elephants are immoderately fond. Just below the crown of leaves there is a curious swelling or bulging of the stem, which adds strangely to the grace of the pillarlike stem.

Although we have naturally dwelt in particular on the botanical aspect of Mr. Johnston's book, it must



FIG. 126.—HYPHÆNE VENTRICOSA.

a razor. It slashes you across the face and over the backs of your hands! The blades intercross and bar your way like hostile sabres; they insultingly whip off your helmet, they fetter your legs and interlace themselves round your ankles, but, like most African difficulties, they lose much of their resisting power it boldly encountered. Squeeze your hat on tightly, lower your head, put your hands in your pockets, and charge through them and they will yield before you."

Not only are there numerous scattered allusions to plants and other objects of natural history throughout the volume, but special chapters are devoted to them. From that relating to plants we learn that giant leguminous trees are especially prominent, among which is the lovely Camoensia, described and figured by Welwitsch; Mussaendas, Baobabs, Hibiscus, and a score of other ornamental genera come in for special mention; while the Orchid before referred to, Lissochius giganteus, is again described "as the

not be supposed that other branches of natural history are passed over. On the contrary, the book teems with valuable notes of observation, not only on birds, beasts, and fishes, but on the physical aspects of the country, and the peculiarities, structural and mental, of its inhabitants, with whom it is clear the traveller was in full sympathy.

From the mouth of the Great Mohindu and the

There is a distance of over 700 miles secured to civilisation, and offering no greater risks to the traveller than those attributable to the elements, or to the ordinary contrariety of tropical rivers. The elimate, away from the coast, is by no means unhealthy if proper precautions be taken, and the chief drawbacks seem to be the grass and the insects. The opening up of the country has been accomplished in seven or eight years by the determination and insight of Mr. Stanley, through whose influence and energy stations are founded, pro-

perty rendered secure, and the passage of travellers and merchants rendered safe for several hundred miles beyond Stanley Pool, without the need of escort or fire-arms. This opening up of a road across Africa for the benefit of the world, and from a pure love of knowledge and civilisation, is in a very large measure due to the munificence and far-sightedness of one well known to British horticulturists—being none other than the King of the Belgians.

Home Correspondence.

What is an Amateur?—With all possible respect for the dictum of the National Rose Society in this matter, I yet fail to see that it cuts any Gordian knot or lays a disagreeable ghost. It is very difficult indeed to separate the amateur grower of plants who sells his surplus stock through the medium of a printed list from one who disposes of his more privately and through a written medium. Where such is the case the distinction is absurd, or how would this decision affect the status of the man who, whilst pronouncing himself an amateur, yet in sending to a firm an order for plants mentions that other houses always allow him trade privileges? An odd sort of amateur that, yet he is known to exist. Then, although in Roses we know that England furnishes very few amateur raisers, and that as a consequence they can hardly in regard to those flowers have seedlings to offer to the trade, yet some perchance whose status as amateurs is unchallenged, do raise other plants, and make profit by selling their best seedlings to trade houses—out, of course, through the medium of a printed list, but privately. Would these, for instance, he amateur rosarians, but traders in relation to the other flowers? The National Rose Society certainly does not cut that Gordian knot. The abolition of all such distinctions in competitions seems to be the most satisfactory method of settling the question. Z.

— It is now set forth in your columns, that an amateur ceases to be such if he sends out lists of his plants for sale. Now, as a grower of florist's flowers, I ask what am I, an amateur, to do, in or der to dis-

— It is now set forth in your columns, that an amateur cases to be such if he sends out lists of his plants for sale. Now, as a grower of florist's flowers, lask what am I, an amateur, to do, in or der to dispose of my surplus stocks of Auticulas, Carnations, and the like anoually? What am I to do with my surplusage—some 300 plants annually? Last year I wrote to five dealers, asking, them to buy what I had to spare. Each replied No. A frieod of mine sent his Auriculas to a leading dealer, without bargaining, and all he was allowed was a shilling for each plant, and the amount was placed to his credit against his next bulb account. I think, therefore, it will be quite evident that there is no course open for an amateur but that of the usual circular with his surplus list, annually, and that it should now be settled that he is none the less an amateur if he sells his own surplus plants in this manner. The course I followed last year was to advertise in another oame in the gardening papers. A good many applications came, and as I had a good many Auriculas to sell, I offered lots of roo, carefully selected and assorted, at a low price to new beginners. It is his way several collections were commenced, and I have been pleased to note that two of my clients showed this year, and won substantial prizes. I shall be only too glad if some one will point out how the surplus stock of florists' flowers can be disposed of, as the dealers will certainly ont help us. Amateur. The question is, not what the "amateur" florist its to do with his surplus stock, but what the committees of the several societies who draw up schedules mean to include noder the terms "amateur" or "dealer" respectively. If we were appealed to, we should have no hesitation in including our correspondent, on his own showing, as a trader. Ed.]

The Potato Disease.—In his generally very able article upon this subject, Mr., Jensen arges that the greatest obstacle to the stamping out of the disease is found in the fields that have grown Potatos the preceding year. He says, some diseased Potatos may remain there from which the disease may take its start. I am very glad he uses the word "may," and not the imperative "will." That some tubers will remain is certain, even with the most careful lifting, but still always very few. Then, of these, will one be found alive and germinative in the spring that is at all diseased? I take exception to Mr. Jensen's conclusions, as I do not believe any diseased tuber could exist in the soil throughout the six months of the winter, for if the moisture of the soil (firespective of possible frost) did not utterly rot or decay the tubers, certainly they would not escape grubs, slugs, and other vermin, which will attack all partially decaying tubers with avidity. Again, do we not as a rule see early planted Potato plants unusually robust and strong, thus showing that through the winter only the fittest had survived? I feel we may put aside the assumption that the disease is at all propagated by tubers left in the soil all the winter, as groundless. As to the plan of disinfecting, no doubt a temperature of 104°, if a dry temperature, will do no harm to the

tubers, but a few hours' such treatment would not suffice to sprout them healthily, and thus produce all that wondrous improvement in the ctop which Mr. Jensen indicates. There I fear he protests too much. Sprouting tubers may be performed easily enough with small quantities, but not so readily when tons have to be manipulated. A, D.

Sowing Turnips.—I finished the sowing of our farm crop of Turnips to-day, the two principal varieties being the Frize Winner and Champion Purple-top Swede, with Skirving's and two other less known kinds for comparison by-and-bye in more limited extect. Few people in Ireland sow so early indeed, a very experienced agriculturist took me to task in a local journal last year for advocating early sowing, for the supposed reasons that they would "start" to seed or keep badly. The result, with me, for several years disposed of either supposition. Now the main reason why I try and have all my Swede seed in the ground by May 10 is to avoid the ravages of the Turnip flor black Turnip beetle. Let me enter into some details. How many farmers have to sow their Turnip crops twice or thrice? This entails labour, expense, partial failure, and at best, as I have frequently noted, a late crop, that can never compete with the early one. The gardener has the same enemy to contend against, and a host of expedients as remedies have been devised. In one category we have soot, then lime, then sulphur, and once I saw one intelligent man in desperation—he had put down seed three times—use a mixture of all three together. But one of the peculiarities of the Turnip beetle is that the female lays her eggs generally on the under-side of the soft young leaf, so that dusting with any of the substances named overhead is necessarily ineflective. Another class of expedients is tar, oil, birdlime, kee, placed on canvas and drawn over the seedlings as a trap to eatch the depredators. The subject is too serious, so I need not say how amusing the occupation (or occupators if the word were permissible) would look in a too 720 acre field I Prevention is better than cure, and my remedy costs nothing, while it makes success retaio. From several pools by this year, owing to the relatively low temperature so far, it may be later. Sy having the Turnip rop sown before the present date, say May 10 or thereabouts, it will be in "the rough leaf," and can then

Effects of Frost.—I do not know whether the illustration of the effects of the recent frosts seen here is peculiar or not, but I think it is worth referring to. A large Oak tree here, which stands alone, and has a spreading diameter of from 50 to 60 feet, has been so cut by the frosts all round its outer side, that every bud is seared or burnt, and destroyed. On the other hand, right in the crown of the tree and in its middle, the buds are untouched, and now I see a green centre and crown with not a green leaf, or the least prospect of one, on the outer surface from the base to three-fourths its height. I do not know that the frost was more intense here than elsewhere; but the result so far seems curious, and would indicate that at a certain elevation it was much less severe. I notice further, in the case of early Horse-Chestnuts, that the bloom-buds are all falling, If that feature be general we shall have but a poor show of that striking bloom this year. Probably in many localities the full effects of the frosts have not yet been made apparent. A. D.

Lonicera sempervirens.—This beautiful scarlet Ilonespackle is now coming into abundant bloom with me, the plant being in the open and in a corth-west corner, where it gets no sunshine till late in the day. Though the position be thus cold and shady the plant has thriven well, retained leafage ocarly all the winter, broke into growth very early, and will soon be a rich prolusion of scarlet flowers. Though I deprecate the cutting of beautiful garden flowers, yet if they must be had, then is this Honeysuckle one of the most charming climbers that can be grown for the purpose. Ordinarily planted as a greenhouse climber it really is more beautiful against a wall where it is sheltered from ficree winds. Quercus.

Violas for Cutting in Spring: Souvenir.— During the months of February, March, and April, and I might include May, the number of hardy outdoor flowers from which you can cut-and-come-again are not numerous. The enclosed Viola came to me some few years since from Mr. Cannell, of Swanley, under the name, if I remember aright, of Souvenir, and after a trial since (in comparison with at least a score of other varieties) I think you will agree with me in saying no flower garden should be without it.

Countess of Kintore, Champion, Unique, Pilrig Park, Mrs. Langtry, Violet King (Emperor William), the old Magpie Pansy (?), and so on, have all their special merits and peculiar colour tinting, but in floriferousness, size, substance, and persistent blooming commend me to this. A friend told me this was not the correct name. I had the first blooms the last days of February, and have no doubt, as in former years, with a mild December, I may have some to send you at Christmas. You will then at once see the great merit of such flowers, that hardly tax an idle bour, as compared with the tender nurslings that flicker for a brief few days—or, as in the case of the Tigridias, a brief few hours—and are gone. W. J. Murphy, Clonmel.

Stephanotis floribunda,—The shoot of Stephanotis which I send herewith is from a plant bearing upwards of a score, all equally as good as the piece sent. It is planted out in a good hed of loam and peat, with a good sprinkling of half-inch bones, and is trained close to the roof of a plant stove here. It. Carter, Decanhill Castle Gardens, Coleraine, Ireland, [An admirable illustration of the extrem floriferousness of this plant, under favourable cultural conditions. Ed.]

Maréchal Niel Rose,—Noticing your reply to Martin Tallack respecting this Rose, I would mention that here, from growth of last season's bads, I have cut scores of blooms receutly, with which were one or two buds also. The buds were worked on Madame Berard plants, and the resulting growth unusually fine. Probably that accounts for the floriferousness: as a rule I am content to get one flower on a shoot or lateral, if that be a fine one. A. D.

Hybrid Tea Rose, Reine Marie Henriette,— There is a nice plant of this growing at Kelton IIall, planted out in a span-roofed house, and, judging from its appearance there, It promises to succeed well, as a crimson companion for Maréchal Niel. It is a vigorous grower, and flowers from each bud along the whole length of the strong shoots, in the same way as the Maréchal does. The flowers are of good substance, and of a pleasing purplish-crimson colour. W. H. Divert, Burghley.

Theophrasta Jussiæi. — In your last week's issue you gave a brief notice of a plant, Theophrasta Jussiæi, growing in the Palm-house at Kew. It may interest your readers to know that I believe it to be the only plant of it grown in this country. It is recorded to have been introduced from San Domiago in 1818, and from conversations with the late A. E. Lambert, Esq., about it, I have every reason to believe that it was introduced by him. It was either presented to or placed under the care of Mr. Colville, of the then famous nursery, King's Koad, Chelsea, which, in 1834, was broken up, and the stock of rare plants sold by auction. I was anxious to obtain the Theophrasta and several other rare plants for Kew, and Mr. Aiton, then Director, allowed me a sum of money to endeavour to purchase them at the sale, and after a smart competition with Mr. Joseph Knight, of the also famed nursery, King's Road, it was knocked down to me for £4; it was then about 2½ feet high. It has now been fifty years at Kew, and in 1870 I learned it was 7 feet high. What is its height at the present time? In addition to your description of the flowers, I may add that they have a very mawkish odour, 7. Smith, ex-Curator, Keyal Gardents, Kew.

Potato Analysis.—A correspondent, "A.," at p. 618, asks whether the result of an analysis of Magnum Bouum and Champion Potatos would show one waxy and the other mealy? Surely it is hardly worth while to call in the aid of the chemist to tell us what may be ascertained by the most unscientific enquirer by merely carefully cooking the kinds. Is, not "A." rather begging the question in assuming, as he certainly does, that the flesh of Magnum Bonum is waxy, and that of the Champion mealy? I have found on our soil here that Magnum Bonum cooks very mealy, If a German analysis is to be accepted as correct, Champion certainly exhibits the largest quantity of starch; but what we want to know, with prespect to Potatos of various kinds, is, which gives us the greatest proportion of real flesh and bone forming matter, and also of heat-producing principle. To fairly test kinds some should be cooked first and others analysed. A. D.

Early Cabbages.—I have read with much interest the various experiences that have found a place in your columns during the past few weeks relative to the superiority of one variety of early Cabbages over another, and am induced to add mine for the benefit of all concerned. Some few years ago I was for several easons thoroughly dissatisfied with results from this crop; it seemed impossible to get a reliable strain from the source whence I obtained my seed. I therefore resolved on a trial of several of the popular

and advertised kinds; these consisted, as far as my memory serves me, of Dwarf York, Sugarloaf, Imperial, Nonpareil, Defance, and Heartwell Early, each obtained from different parts of the country, in order, if possible, to ensure a thorough change of seed. A sowing was made in the second week in August, and the plants were all put into a piece of ground direct from the seed-bed, as I am no advocate for a second planting. The brake had been one year turned up from productive meadow land composed of 10 inches of strong loam lying on a hungry clay, and facing directly north. It had just carried an enormous crop of Myatt's Kidney Potatos, of such a quality as I have never before or since seen. We happened to gct some severe weather during the early part of the year, which played sad havoc with the Yorks and Sugarloafs, more than half getting destroyed. As soon as the season allowed of a growth I took special note of the progress. Some of the Sugarloafs and Noopareils began to bolt, but it was not noticeable amongst the others. I was by this time enabled to distinguish the difference in the lots; the Heartwells, Defiance, Imperials, came out conspicuous from the fact of their forming such close compact heads: I therefore noted these sorts as superior to the others, and had further to test the best of these, which I confess, I had a difficulty in doing in the growth, but in making the first cutting I found the greatest number of perfect heads amongst the Heartwells; yet as the trial so far had brought these varieties so close together, I thought I would try a cooking test, so sent three heads of each to the the perfect of the perfect heads amongst the average and proven. Since this I have grown no other kind for early work, and have at the present time as fine a piece as any in the country, iodeed, my early Cabbages have quite a local reputation. I ought, perhaps, to state for the benefit of others that I procure the seed from Messrs. Carter & Co., Holborn, London, who, I believe, introduced the variety. Tetratige.

Suddenness of Disease in Potatos.—It would appear from the following quotation from the article on the "Potato Rot," by Prof. W. G. Farlow, of Harvard University, that the suddenness of the attack of the Peronospora is sometimes as well marked in fields of "apparently" sound (see p. 588) Potatos in America as it is in Great Britain. Professor Farlow writes, Bulletin of Bussey Institution, Part. IV., p. 319:—"At times its advent (the Peronospora) is soudden that, within a few hours, the Potato fields change from green to brown and black, and the plants which, in the morning, gave promise of an abundant orop, before night present a mass of decaying vegetation, in which are involved not only the leaves and stems, but also the tubers." W. G. S.

Gardenia intermedia.—Herewith I beg to enclose a few flowers of the above-named Gardenia. My main object in sending them is to show that good Gardenias can be grown in an ordinary heated pit, and also the beneficial effect of Standen's manure in improving the size of the flowers, which I think you will agree with me in saying are above the average size. Some of them are close on 5 inches across. In making these remarks I do not by any means wish to infer that fine Gardenias have not before been grown in pits: I know full well they have. Still, there may be some amongst your writers who may not know this, and who may at the same time be desirous of growing a few of this, to say the least, beautiful and chaste flower. The leasts from which the enclosed flowers were cut were propagated two years ago, the cuttings were inserted round the sides of 4-inch pots and placed in a pit with a brisk bottom-heat, and kept shaded for a time till rooted. They were then potted into 3-inch pots in a mixture of half peat and fibry loam with a dash of clean river sand in it, and put back into the same pit. When these pots were full of roots they were potted into 6-inch pots, using the same soil as before, and replaced in the same pit, the pots being plunged in sawdust over a slight bottom-heat. Last spring they produced a few flowers. After blooming the plants were again overbauled, some of them being simply top-dressed with a mixture of peat and some Standen's manure, say, about a table-spoonful to each plant; the rest were shook out and repotted into the same sized pots as before. After being replunged in the same pit they were treated to a comparatively high temperature shows our surface of peat and some Standen's manure, and and surface of peat and some Standen's manure, say, about a table-spoonful to each plant; the rest were shook out and repotted into the same sized pots as before. After being replunged in the same pit they were treated to a comparatively high temperature was kept about 55°, the day temperature being about

being more long-jointed, it is possible to cut a portion of the shoot with the flowers without injuring the plaats. Many of our plants have had, and have yet to come, from two to three dozen flowers on each, and out of the batch of about two dozen only some three or four are in pots more than 6 inches in diameter. We have some G. florida amongst them. They do well with the same treatment, but do not give such fine individual blooms, though, as I mentioned in your columns some time ago, they are more continuous bloomers than G. intermedia, which latter variety only blooms once a year with us. H. J. C., Grimston.

FORESTRY.

THE FORESTRY EXHIBITION .- The first list of exhibitors in connection with this Exhibition has been published, and we note that, besides private exhibitors, the following Governments and departments are represented :- Home Government -The departments of Woods and Forests, the War Office, and the Epping Forest Commission. Colonial Governments—British Guiana, St. Vincent, Sierra Leone, Tobago, Cyprus, the Cape, Mauritius, New Brunswick, Dominica, Gambia, South Australia, and Tasmania. Indian Empire-Calcutta, Pegu, Punjab, North-West Provinces, Andaman Islands, the Sanderbands, Madras, Malabar, Tingevelly, Coimbatore, Nelambur, Johor, Travancore, the Straits Settlements, Protected States, and Ceylon. Foreign Governments-Norway and Sweden, Denmark, Chili, Persia, Siam, Honduras, Mississippi, Florida, Venezuela, Borneo, San Salvador, Japan, and Persia. Private exhibitors number about 500, and contribute articles under nearly all the classes and sections which have been already detailed — wood pulp and materials for paper and wood-working machinery being specially re-presented. Since this list was published, the committee have received applications for space from the Government of Japan (lor 5000 square feet) and others, which has made it necessary to erect additional galleries furnishing about 10,000 square feet of space for exhibits, and which, it is expected, will be sufficient to accommodate everything without over-crowding. Amongst the exhibits expected from the Canadian side are:—A collection of native woods, in rough and finished state, shown by the Provincial Government and the New Brunswick Land and Lumber Company; an office, with complete internal fittings, including full panellings, by J. C. Risteen & Co., Fredericton; a wooden screen or "trophy," showing all varieties of native woods in combination, also several articles of furniture, by J. & J. D. Howe, St. John; a miniature log cabin, an Indian and several other similar articles, by Mr. Wright, an employe of the last-named firm; a collection of Indian goods, including tobogans, snow shoes, baskets, Birch-bark work, Lacrosse clubs, and the like, by Mr. J. R. Smith, of Union (Street, and Mr. W. S. Thompson, of the Indian Bazaar, St. John; a collection of bobbins, blocks, and other small wooden ware by the Quaco Wood Manufacturing Company; a case of spools, by the Piccadilly Spool Works, St. John; a collection of doors, sashes, wash-tubs, washboards, butter hrkins, churns, and turned work, by the Woodstock Wood Working Company, Woodstock; Venetian blinds, mouldings, &c., by A. Christie & Co., St. John; hardwood doors and sashes and outside blinds, by Scott & Lawton, St. John; a bedstead and turned work, by Wm. Jaffray, St. Mary's, York; shingles, by the Van Buren Manufacturing Company; Excelsior, by Hutchings & Co., St. John; a collection of Birch-bark pictures, by Mrs. Marvin, St. John. The New Brunswick Railway Company have kindly offered to bring to St. John, free of cost, any articles sent over their line to be forwarded to the Exhibition.

Diseases of Trees.—It may safely be assumed that every tree is liable to some malady, disease, or accident—some, perhaps, more so than others, some openly exposed and easily seen, while others are hid, and concealed. The whole catalogue of diseases and accidents may safely be divided into two classes, namely, preventable and unpreventable, or those susceptible of cure and those that cannot be cured. The learned ancients, we are informed, laboured hard to make, or find out the talisman by which every evil to which flesh is heir was to be warded off. We

may take up the work where they left it, and although we work as long and hard as they, when we abandon the fruitless task, just as they did, we shall be as near, but certainly no nearer than they were in finding out the secret. In this brief paragraph it is not intended to explain what disease is, whence it comes nor whither it goes, but very briefly to direct attention to some of the more conspicuous and inveterate maladies incident to some forest trees. The subject, taken even in its most limited compass, is a wide and expansive one, and must, for convenience sake, be taken in two sections, which will be sufficiently well defined by the unmistakable distinctive lines of evergreen and deciduous trees, of which for the present the latter will constitute the subject.

We hear and know comparatively little about historical trees beyond the circumstance that they are said to be very old (not unfrequently twice the age they really are), and that they are also of immense size. The marvel is that people are not far more wonderstruck with the appearance of our forest giants than they are. With trees, as with men, few there are which escape the hundred and one casualties incidental to tree life, hence the comparatively small number of trees, however favoured, that attain to old age and great size.

THE OAK, justly designated king of the forest, suffers severely in its boughs and branches, being shattered with antumn gales which occur before the leaves are shed. The Oak is also very liable to various forms of "shakes," the result no doubt of being grown on soil not suitable for it. If grown under conditions, however, in harmony with its nature the Oak of all other trees (except the Spanish Chestnut) should attain the greatest age and size.

ASH.—The Ash tree, though amongst our best and hardiest denizens, is yet in many cases under certain conditions very liable to an inveterate and injurious affection of ulcerated bark. This disease takes place in the tree before the bark assumes that beautiful corticated, carved network-like appearance, which commands such unusual admiration, after which the bark, and therefore the whole tree are as safe and well protected as can be. The unsightly ulcerous wounds referred to never heal up as they do in many other species, but deepen and spread all over the tree, rendering it in most cases quite useless except as fuel.

ELM.—The Elm tree is known by the two distinctive names of English and Wych. The former is a comparatively soft and brittle wooded tree, and very liable to having large limbs broken and riven off by gales in autumn; retaining, as it does, its leaves to the very last, makes it doubly liable to injury from that cause. The Wych Elm, generally speaking, is a strong and hardy tree, but unless grown on good dry loam, in which it can grow free and fast, it seldom grows sound, being affected with shakes of various forms, which renders it unfit for industrial work. It has to be noticed, however, that there are several very worthless varieties of Wych Elm, growing side by side with the good sorts, from which they cannot be distinguished till cut down.

BEECH. - Seedling Beech are tender, and often suffer by frosts in the month of May; but beyond that the tree is as hardy as any in the forest, except on one point, the only vulnerable one of importance I koow of, namely, the bark. The Beech is essentially a thin and tender barked tree, and the bark never, even in extreme old age, assumes that rough corky condition common in most other trees, but, on the contrary, always remains smooth, glossy, and very tender. The bark is very liable to contract a certain disease, which begins at first in minute dark spots, presenting sometimes the appearance of having received the contents of a fowling-piece. The spots multiply and spread all over the surface, at times very slowly, and at others rapidly. The bark becomes dis coloured, but seldom, till greatly aggravated, does it Excesses of cold wet weather rupture the bark. during the season of growth appear to be most productive of the disease.

ALDER.—The Alder tree is often complained of on account of its dead tops, but there is nothing either alarming or remarkable about this feature. It is by oo means a long-lived tree, although large specimens, and of considerable age, are here and there to be met with throughout the kingdom. The heartwood of the tree is by no means durable, and from the circumstance that it is but too frequently planted in cold, wet, boggy ground, where nothing else will grow, it would amount to something like a

miracle if it could remain healthy and sound in all its members for any considerable number of years.

LABURNUM.—It is, perhaps, as rare a thing to see a tree of any considerable size and age of the Laburnum standing erect and well balanced upon its own stem as to see a four-leaved Clover. The heartwood of the Laburnum is withal hard and durable as furniture, &c., but the main roots do not retain their vitality for many years, and, as a matter of course, when they decay the tree heels over, and there remains in a reclining position, it may be, for a century or more, for as the old roots decay young ones are constantly forming, which take their place and fulfil their office.

HORSE CHESTNUT.—The Horse Chestnut is very listed to have its limbs broken off, not only with gales, but by lodgment of snows, and even heavy dees, when in full summer foliage. It is a tree on that account that should never be planted in close proximity to human dwellings. A peculiarity, and also a great defect of the tree, is its disposition to grow with a spiral or twisted stem, in some trees very slight, but in others very conspicuous and injurious.

POPLAR.—Most of the Poplars grow tall, and their branches suffer severely by breakage from wind, which, combined with the unfavourable circumstance that, as they grow straggling and thio-topped at best, they can ill afford the loss of top boughs, which renders the tree in many cases quite unsightly and useless as a landscape object.

WALNUT,—The Walnut tree, like the Laburnum, is very liable to lose the vitality of the main anchor roots, and, like it, fall into a reclining position, as described of the Laburnum. It also bleeds profusely when a limb or large branch is cut off.

LIME TREE.—The Lime tree has, perhaps, fewer defects than any other forest tree, and yet in point of profit not much can be said in its favour. Small dead branches are frequent occurrences, and they become conspicuously white amongst the dark spray of the branches. It is from the inner bark of the Lime tree of Russia, of which country the tree is native, that the well known bast or mats of commerce are made; and where a branch remains upon the tree after it has lost its vitality, the inner rind referred to becomes detached and hangs down or waves in the wind like so many ribbons or brown rags, which require pruning off. C. Y. Mehic, Culter Houre, Banfishire.

COLONIAL NOTES.

BRITISH HONDURAS .- Mr. D. Morris, the Director of Public Gardens and Plantations in Jamaica, has given the result of his visit to the colony of British Honduras at the close of 1882, in the form of a small volume of 152 pages, under the title of The Colony of British Honduras, its Resources and Prospects; with Particular Reference to its Indigenous Plants and Economic Productions. Mr. Morris says in his pre-face that "In England little is known of British Honduras, and that little not of a very flattering character." Referring to the forests the destruction Referring to the forests, the destruction of which is common in most tropical countries, Mr. Morris utters a word of warning against any extensive or reckless wood-cutting, but at the same time points out that it would be well for the Government to afford every reasonable help for the establishment of permanent plantations, and for attracting to the colony an intelligent race of planters possessing the necessary capital and energy. "At present," stated, "several hundred thousand acres of some of the finest lands to be found in any British dependency produce an annual export value (in Mahogany) of only £50,000. This sum is attained in Jamaica in the export value of such a 'minor product' as Oranges." It is pointed out as a new and somewhat startling fact that the export value of Oranges from Jamaica is equal to that of Mahogapy, the great staple industry of British Honduras. It shows, however, the gradual change that is taking place in the development of the West India Islands by means of the American fruit trade. Mr. Morris looks forward to an extension of this fruit trade to British Honduras as one means of bringing prosperity to the colony, but he says at the same time he does not wish it to be inferred that the larger industries are not likely to succeed there; on the contrary, with available capital and a supply of labour no country could do better; thus extensive areas of land are suitable for the culti-

vation of the Sugar-cane, and further inland Cocoa plantations might cover hundreds of acres, and Coffee of the finest quality ought to flourish on the slopes

and higher lands.

The chief industry of British Honduras is woodcutting. Mahogany is exported to the extent of about 3,000,000 feet per annum, the cost of which, ready for shipment, is from £8 to £10 per 1000 feet. The annual export of Logwood is about 15,000 tons, realising from £2 to £3 per ton. "Wood-cutting operations have now been carried on for more than 200 years, and as a result much of the finest timber has been cut down. There is, however, much fine timber still to be found in the interior, but probably beyond the reach of rivers; hence it is believed that the construction of a railway will not only advance other industries, but at the same time stimulate the production and export of the old staples of the

The chief Pine of the colony is known as the Yellow Pine (Pinus cubensis). The timber of this is used only to a small extent for building purposes, owing, it is said, to the difficulty of sawing it. wood is heavy, and would probably be very durable if properly seasoned; as it is, however, it is used chiefly for firewood and making torches, which are largely used in the Mahogany works. Mr. Morris says that an impression prevails in the colony that two species of Pine exist on the Pine ridges, distinguished as the white and yellow Pine, but that he was unable to distinguish between them. He suggests that if properly tapped they might yield good resin, and by distillation good turpentine.

Some interesting notes are given on the Cocca that, cultivated in the South, is described as being probably forms of Theobroma Cacao, "but in other instances the characters approached more nearly to T. angustifolia, which is supposed to be a distinct species, and under cultivation in Guatemala. This last is no doubt the Tabasco Cacao of the Atlantic slopes of Central America, which is probably identical with the celebrated Socurusco Cacao of the Pacific

We cannot follow Mr. Morris through his numerous notes on other equally valuable plants. It will suffice to say that he pays considerable attention to indiarubber plants, the Sugar-cane, dyes, Rice, Maize, Cinchooa, and other medicioal plants, tropical fruits and food-plants. At the end of the book a list of works and serials is given suitable for the use of tropical planters. Mr. Morris has fallen into some errors regarding the issue of some of the serials. Thus he refer to the *Pharmaceutical Journal* and the Journal of the Society of Arts as a "monthly record and a "monthly magazine" respectively, when in fact both are issued weekly. The *Technologist* also is quoted as a "monthly record," but this periodical has ceased to appear for some years past.

For the information of those who wish to obtain Mr. Morris' little book, it may be well to state that it is published by Mr. E. Stanford, of Charing Cross.

Keports of Hocieties.

Royal Horticultural: May 13.

SCIENTIFIC COMMITTEE.—Dr. Maxwell T. Masters, F.R.S., in the chair. Present:—Messrs. Murray, Houston, McLachlan, Boulger, Grote, Loder, W. G. Smith, Ridley, Prof. Church.

Stem of Aloc ferox.—Mr. McLachlan exhibited portions of the dead stem of this plant perforated by the Anobium striatum, or Death-Watch beetle. As a

preventative of such attacks in timber, furniture, &c., the application of kerosene, or of hot solution of carbolic acid, was recommended.

Cases of Lepidopterons Insects.—Mr. McLachlan showed from Eastern Tropical Africa some very remarkable insect cases, the work of some of the Psychidæ, and so wonderfully like shells of Cyclostoma, or Paludioa, as readily to be mistaken for them or their casts; and in the same way that the coils are occasionally reversed in these shells so was it with these cases.

with these cases.

Canker,—Mr. Frere, Roydon, Diss, sent a branch of the true Service tree affected with canker, but there was no evidence to show from what cause.

Caoma lariets, &c.,—Mr. Plowright sent Larch leaves affected with this fungus, which is rare in this country; also specimens of Æcidium Pini, supposed to be the accidial form of Collosporium seneciones.

Puccinia suaveolens.—Mr. Plowright sent speci-

mens of this fungus, with the following note:—"The remarkably powerful odour emitted by these bodies was noticed by Persoon when he named the fungus 'snaveolens.' The odour of the spermogonia is observable for a long time after the plant has been gathered. It clearly is an instance of mimicry, in which the fungus mimics the odour of some flower. Léveillé thought it resembled the perfume of Orange blossoms; De Bary likened it to that of Enothera biennis. The object of this odour is, as Rathay has recently shown, to attract the visits of insects, who in recently shown, to attract the visits of insects, who in their turn disseminate the so-called spermatia. The following insects have been found to visit the spermogonia of this particular Uredine:—Coleoptera: Apion onopordi (Kirb.), Crepidodera aurata (Marsh), Podaonopordi (Kirb.), Crepidodera anrata (Marsh), Poda-grica placida (Kutsch), Loggiarsus anchuse (Puyk), Diptera: Scatophaga merdaria (Fabr.), S. ster-coraria (Linn.), Micropeza corrigiolata (Linn.), Nyctia halterata (Pauz), Anthomyia (Op.), He-miptera: Stenocephalus agilis (Scop.), Car-pocoris nigricornis (F.). This Uredine is one of those which have a perennial mycelium. Rostrup in Stackbard that these individues effected with the those when have a perennial mycenum. Assitup in 1873 showed that those individuals affected with the spermogonia in spring soon afterwards produced the well known Uredo spores (Uredo suavolens), but upon these plants no other spore forms were produced. When the Uredo spores were placed upon other and healthy specimens of the same host-plant they gave rise first to the Uredo spores, which were in due course succeeded by the teleutospores. I hope before long to give somewhere a more extended notice of Rathay's important researches upon the spermo-

gonia del Bright Schibited.—From Mr. Loder, flowers of Fritillaria Thomsoniana, Primula dolomitis, Andromeda fastigiata, &c. From Mr. Farraut, Isle of Man, Rhododeadro lanatum, a rare plant in cultiva-

tion; R. Fortunei, and R. niveum.

FLORAL COMMITTEE .- Present in Section A. FLORAL COMMITTEE.—Present in Section A.:— John Fraser, Esq., in the chair; Messs. E. Hill, J. O'Brien, J. Dominy, J. Hudson, J. Woodbridge, H. Herbst, J. Laing, H. Ebbage, T. Moore, Rev. G. Henslow, and Dr. Masters. Section E.:—Shirley Hibberd, Esq., in the chair; Messrs. H. Bennett, W. Bealby, G. Duffield, D. C. Lathbury, H. Cannell, W. B. Kellock, and H. Turner. The leading leatures of this meeting were pot Roses, herbaccons Calceo-larias, Daffodils, and new plants. Several well known orchidists exhibited new and interesting objects in the new plant section, and as showing the progress which new plant section, and, as showing the progress which is being made with the hybrids, it may be mentioned that no less than three of Mr. Seden's seedlings obtained that no less than three of Mr. Seden's seedlings obtained First-class Certificates—viz. Cypripeolium grande x. Masdevallia Chelsoni x, and Cattleya Mardeli x. The two former came from Sir Trevor Lawrence's collection, and the latter from Mr. Lee's. Cypripedium grande is a strong, robust growing plant, with two strong spikes of dull lemon coloured flowers, with the dorsal sepal of a paler tint. Masdevallia Chelsoni has scarlet and orange coloured flowers. From Burford Lodge also came Phalænopsis sumatrana purpurea, a form in which the purplish-violet in the labellum is of a very rich hue. A splendid spathe of the new Authurium ferrierense x also came from Sir Trevor's garden. Cattleya Mardeli is a spathe of the new Aothurum terrerense x also came from Sir Trevor's garden. Cattleya Mardeli is a dwarf-growing form of the Skinneri type, with the flowers of a rich deep rose-pink, and a fine broad purple labellum. Mr. Lee also showed in Cattleya Mendelli var, selbornensis, a highly coloured variety, with a handsome lip tipped with purple. From Baron Schröder's garden came two very fine varieties of Odootoglossum crispum named respectively Delliense and Ballantinei. The former is a medium-sized, neat-shaped flower, white suffused with rose and prettily spotted with blood-red; while the latter is of neat-shaped flower, white suffused with rose and prettily spotted with blood-red; while the latter is of larger proportions, with the broad sepals and petals nicely fringed, and heavily blotched with crimson. Mr. B. S. Williams sent a miscellancous collection, including Cattleya Mossire magnifica, a good variety; Psychotria jasminifiora, very freely flowered; Rhodo-dendron Kaiser von Russland, deep rose, spotted with crimson, of decided R, arboreum type; Asplenium borridum, a strong-growing species, whose fronds have a black hairy midrib of great substance; Odontoglossum Alexandræ splendens, a form having very large suffused illac blooms; and Brassia antheroites, a most striking plant with a spike of ten flowers, the long sepals and petals being of a yellow ground colour, spotted with brown. A vote of thanks was awarded to Mr. Kemp, gr. to D. C. Graham, Esq., Dunlop House, Ayr, for several glasses of cut blooms of Vanda suavis and V. teres, handsome sprays of bloom that were cut from most floriferous plants. A pretty baskethul of small plants of Boronia elata; a useful looking dwarf Fern, Osmunda javanica, having almost erect-growing fronds of pale green; a fine Gloxinia, appropriately named Purity; and a collection of Japanese Maples, came from Messrs, J. Veitch & Sons, Chelsea. The latter included two new forms, which received Certificates, viz., Acer japonicum var. aurea, with yellow palmed leaves; and A. polymorphum septemiobum elegans purpurea [Phocbus, what a name!], a handsome cutleaved coppery-red. A group of Azalea rosæflora

and Cornus brachypoda variegata, a plant with handsome creamy variegation, came from the same frm. A much more varied assortment of Japanese Maples came from the New Plant Company, Colchester, among which were some wonderfully distinct and pretty forms, which, owing to the absence of names, we cannot further distinguish. For these a Bronze Banksian Medal was awarded. From W. Vanner, Esq., Camden Wood, Chislehurst, came Odontoglossum citrosmum roseum, Vanner's variety, which was awarded a vote of thanks. The Calceolarias shown were well grown examples of the dwarf market strains. Mr. H. B. Smith, St. George's Nursery, Ealing Dean, received a Bronze Banksian Medal for a collection, in which the prevailing tints were rich brown, pink, and crimson. Silver Banksian Medal was awarded to Mr. H. B. May, Dyson's Lane Nursery, Edmonton, for a group, in which the golds and yellows predominated, and which were admirably set off by a profuse intermix ture of Adiantums. From the Society's garden there were also herbaceous Calecolarias, Gloxinias, Ferns, and a collection of dwarf hardy plants. Messrs, W. Paul & Son, Waltham Cross, received a Gold Medal for large and fine collection of Roses in pots and many (twenty) boxes of cut Rose blooms. The plants were of moderate dimensions and very well bloomed. Messrs. Barr & Son, Covent Garden, were awarded a Silver Banksian Medal for a collection of Nortas Silver Banksian Medal for a collection of Nortas Silver Banksian Medal for a collection of Nortas and the received and the plants were good for the season. Mr. T. S. Wate, Ilale Farm Nursery, Tottenham, showed a beautiful and varied collection of cut blooms of late Tulips, Narcissi, and hardy plants. Fot plants of Moutan Peonies of the varieties Madonan, Grand Duchesse some creamy variegation, came from the same firm. A much more varied assortment of Japanese Maples and varied collection of cut blooms of late Tulips, Narcissi, and hardy plants. Pot plants of Moutan Peconies of the varieties Madona, Grand Duchesse de Bade, Adriana, Maxima plena, Piner, Moris, and Wohnerii were also shown by him, and the big showy flowers attracted much attention. Calochortus Eenthami and Phlox setacea Vivid, a rich purple coloured rock plant, also came from Mr. Ware, who was awarded a Silver Banksian Medal. A vote of thanks was bestowed on Mr. C. Noble, Sunningdale Nursery, Bagshot, for a collection of cut blooms ol Clematises. Messrs, J. Laing & Co., Forest Hill, had a good new zonal Pelargonium in Belle Nancienne, a semi-double flesh-pink, with salmoon-coloured centre; Coleus Brooksii, and some enormous blooms centre; Coleus Brooksii, and some enormous blooms centre; Coleus Brooksii, and some enormous blooms of single-flowered Begonism mostly brilliant in colour. Some seedling Gloxinias of some merit came from Mr. R. Phillips, gr. to Dr. Baber, Meopham, Kent. Mr. Dean, Ealing, staged a large finely flowered specimen of Iberis gibraltarica hybrida; Mimulian smoschatus rubra. Mr. Turner, of Slough, showed two stands of Carnation blooms, of much beauty and in most instances of great merit, the flowers being large, full, and the colours good and distinct; the same exhibitor. and the colours good and distinct: the same exhibitor staged a pretty collection of alpine Auriculas in pots, staged a pretty collection of alpine Auriculas in pots, which were greatly admired by the many visitors to the conservatory. Messrs. Lucombe, Pince & Co. of Exeter, exhibited spathes of Anthurium Scherzerianum giganteum, of enormous proportions, and received a vote of thanks.

The awards made were :-

FIRST-CLASS CERTIFICATES.

Section A.
To Sir Trevor Lawrence, Bart., M.P., for Cypripedium

To Sir Trevor Lawrence, Bart., M.P., for Masdevallia Chelsoni ×

To Sir Trevor Lawrence, Bart., M.P., for Phalænopsis

sumatrana purpurea.

To W. Lee, Esq., for Cattleya Mendelii ×.

To W. Lee, Esq., for Cattleya Mendelii var. selbornensis.

To Baron Schröder, for Odontoglossum crispum To Baron Schröder, for Odontoglossum crispum

To Baron Schroder, for Orbito setacea var. Vivid.
Ballantinei.
To Mr. T. S. Ware, for Phlox setacea var. Vivid.
To Mr. B. S. Williams, for Brassia antheroites.
To Mr. B. S. Williams, for Asplenium horridum.
To Messrs. Veitch & Sons, for Osmunda javanica.
To Messrs. Veitch & Sons, for Acer polymorphum septemlobum elegans purpureum.
To Messrs. Veitch & Sons, for Acer japonicum

SECOND CLASS CERTIFICATE To Mr. T. S. Ware, for Calochortus Benthami,

FIRST-CLASS CERTIFICATES. Section B.

To Messrs. John Laing & Co., for zonal Pelargonium elle Nancienne. To Mr. C. Turner, for Tree Carnation Mrs. McLaren.

SECOND-CLASS CERTIFICATE.

To Mr. R. Dean, for Mimulus moschatus Cloth of Gold.

FRUIT COMMITTEE.—Present: John E. Lane, Esq., in the chair; Messrs. J. Ellam, P. Crowley, G. T. Miles, S. Lyon, J. Burnett, G. Bunyard, C. Silverlock, A. W. Sutton, W. Paul, G. Breese, F. Rutland, J. Lee, G. Goldsmith, H. J. Veitch, and J. C. Mundell. Mr. B. S. Williams exhibited examples of his new Basing Park Hybrid Melon, an early, medium-sized, scarlet-fleshed variety; and Mr. Coysh,

gr. to E. H. Wood, Esq., Newbold Revel, Rugby, sent half-a-dozen fine fruits of his hybrid between Conqueror of Europe and Scarlet Gem, a large scarlet-fleshed variety, of very good quality for the time and season, and a Cultural Commendation was awarded. Messrs. Lane & Son showed some good fruits of their Prince Albert Apple; Mr. Turner had an admirably preserved sample of Winter Pearmain; Mr. Divers, of Weirton, sent several varieties of Rhuharb; and some excellent samples of Broccoli came from Mr. Ham, Hildenborough.

Obituary.

THE ranks of horticulture have rarely contained -alas! that we should have to say, lost-a more estimable and remarkable man than Mr. ALEXANDER JAMES MAULE, who recently died at his residence in Bristol, where he succeeded to the old-established business carried on by his father. The nursery was one of those old-fashioned, all-round establishments where everything might be procured at first-hand, but in addition to this Mr. Maule had his specialities. Orchids were one of them, and it is needless to say the collection was no mean one. Another speciality was garden pots. In addition to his nursery, Mr. Maule had a pottery, and was enabled to fashion to his own fancy and knowledge the description of pots best suited for his purpose, among them an Orchid pot figured in our columns. But these are minor specialities-greatest of all was his own strong individuality. Apparently he owed little to early education or training, save perhaps in purely business matters, but for all that he possessed an originality and independence of thought which betokened careful observation and much natural intelligence, uncontrolled, it may be, hy the regulating power which early judicious education gives. His experiments in Potato culture, reported in our columns (April 22, 1876) afforded an illustration of this. They evided a keenness of apprehension and a cleverness of reasoning which would have probably led to excel-lent results, if they had been sufficiently based in early life on exact knowledge. As it is, they were looked on as mere fads—and fads, it may be, they were; but they were the fads of a remarkably original and intelligent man. Mr. Maule looked on the formation of tubers as a diseased condition analogous to that of certain tumors in animals; and he had the idea, that by grafting our wild species of Solanum on the haulms of the Potato-which he did successfully-that he should obtain Potatos less susceptible to disease than those grown in the ordinary way. Another notion— he had numbers—was that the culture of Yuccas might be turned to good account here, not only for fibre, but for the liquor to be had from their fermented juice. As to the former point there is no sort of doubt, it is only a question of finance, whether it would not be cheaper to import the fibre than to grow Yuccas here. The other matter is a question of taste, and those who had the opportunity of judging do not seem to have appreciated Yucca ale. Mr. Maule was an importer of new plants, and a few years ago it fell to our lot to pick out in his nurseries as worthy, not only a name, but of special commendation, from a decorative point of view, the plant known as Pyrus Maulei. Mr. Maule was loud in the praises of the jam made from the fruit of this plant, and we have nothing to say against it, but to our taste it finds a better use in the addition of a small portion of one of the fruits to an Apple tart, as Quinces are used. A small portion only is needed, for the flavour is powerful. Mr. Maule was full of quaint reflections; some of these are mentioned in the Bristol Times, from the pen of one who evidently knew him well. Some of these recollections we are tempted to quote. Speaking of Maule's love for his plants and the contentment he got therefrom, the narrator proceeds :-

" 'Yet,' I said, 'Mr. Maule, gardeners have not the reputation, as a class, of being always the most equable and happy-minded of men; but if they were all constituted as you are, it ought to be one continuous treat to them.

" 'I am afraid it is so, my good sir,' he answered. They are, I fear, rather given to take a complaining view of life. When I am on my business journeys, and call at a gentleman's place in the country, I usually see the gardener first, to know what things may be wanted, "Well," I say, "gardener, how do you get on?" "Oh, pretty, well," he sometimes answers, but not in the most contented of tones. "Master is reasonable enough, but missus wants flowers and fruits all the year round; and then, as for help, though I cannot say I quite require

another man, I should be glad to have a woman, as the weeding gets ahead of us." I then say, "Stop there my friend: this is the rock upon which all our craft split. The head of our profession, that "grand old gardener," Adam, was as happy as the day was long until he took Adam, was as happy as the day was long until the took if into his head, like you, to ask for a woman to help him in the garden. His request was granted, and then began all our troubles. We might now, but for that egregious mistake, have had the whole globe for one hooning Garden of Eden, 'Inr. Maule died a bachelor!'

"The tropical plants and Palms had each a special

moral for his eye. Where some large leaves were naturally perforated, so that the light came through the holes to animate the lesser vegetable growth beneath, he referred to this condition as conveying a lesson to men with a greedy and monopolising turn, not to keep out the light from lesser creatures struggling for existence in the same sphere.

"I wanted some Asparagus plants, and was perhaps unnecessarily particular as to the kind I ordered. dear sir,' said he, 'it is not the plant but the bed you have to look to; almost any Asparagus plant will flourish if you make a fitting place for it.'

'And how do you recommend the bed to be made, Mr. Maule?' I inquired.

"'Look here, sir,' he answered; 'wherever there is a great man, though he should be in a different walk, calling, or profession to your own, mark his distinguishing characteristic, and follow it as far as you can by To what did the great Arthur, Duke of Welanalogy. lington, owe his triumphs? To trenching, sir. The lines of Torres Vedras were a perfect and elaborate system of trenching, and I say, follow him in your Asparagus bed—trench it thoroughly, and you are sure to triumph, by draining off the wet, which is the death of

He told me of a workman of his who was ". He told me of a workman of his who was a great adept at grafting Roses, and thus contrived to get a good many thorus in his fingers during the week; but then, sir, he did not worrit himsell, taking then out hourly or daily; he bore them patiently in the flesh until Sunday, when, as soon as the parson gave out the text, he took his penknife from his pocket, and, under the genial influence of a soothing discourse, he quietly and deliberately drew the prickly intruders from his fingers, and returned home with clean hands to begin another week of budding and grafting next morning in a dutiful frame of mind."

We much regret to learn that Mr. CRANSTON, of the Cranston Nursery and Seed Company, Here-ford, while driving from Pembridge Fair to his home on Wednesday night, was thrown out of his carriage

We are sorry to hear of the death, on April We are sorry to near of the death, on Appin 29, of Mr. JAMES B. GRAY (aged 52, years), for nine years gardener to W. L. Barclay, Esq., The Briers, Reigate, and previously for seventeen years gardener to G. W. Alexander, Esq., of Wood Hatch. Mr. Gray, who was a devoted lover of Orchids, leaves a widow and thirteen children, several of whom are doing credit to the profession of their father.

—— We regret to record the death, at Kirby Line, Liverpool, on May 4, after a long and painful illness, of Mr. John Busserr, aged 79 years. Mr. Bissert, was for many years gardenerat Sefton Park, near Liverpool, whence he retired about seven years ago on a handsome pension from the Earl of Sefton.

The Meather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON, FOR THE WEEK ENDING WEDNESDAY, MAY 14, 1884

DAY.	Baros	METER.	1	Гемі	PERAT	TURE	OP	due fi Gla Tab	grome- al De- ctions rom isher's les 6th lition.	Wind.	ئ	
MONTH AND DAY.	Mean Reading Reduced to 32° Fahr.	Departure from Average of 18 years.	Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 50 years.	Dew Point.	Degree of Humidity. Sat. = 100.	Average Direction.	RAINFALL	
May	In.	In.	۰	0		0	٠	٠			In.	
8	29.92	+ 0.18	60.5	40 2	20 3	50.9	— 0.7	45 8	84	S.W.	0.60	
9	30.04	+0.30	65.0	46.5	18 S	54-9	+ 3.4	46.9	74	W.	0.00	
10	30.04	+0.29	74 2	45 5	28 7	59.5	+ 8.2	50 2	74	W.	0.00	
11	29 88						+13.2		57	S.	0.00	
12	29.77						+11.9		70	S.	0.30	
13	2q 88						+ 62		80 -	S E.	0.00	
	20 76											
14	20 70	+0 02	04.3	40 0	18 3	53.0	+ 2.3	48.5	82	W. S. W	0 02	
1can	29.90	+0.16	70 2	46.7	23.5	57 • 7	+ 64	49.3	74	s	0.32	

May 8.—Fine, dull day and night; windy,
— 9.—Dull morning; fine bright afternoon and night
Lunar halo.

Lunar halo.

10. Very fine, bright, hot day and night.

11. Very fine, bright day and oight.

12. Very fine day till 3-45 P.M.; thunderstorms from 4 P.M. 10 4 30 P.M. Heavy rain. Fine and bright atterwards.

atterwards.

13.—Dull morning; fine and bright from 2 P M. Fice,
clear night.

14.—Fine and bright at times; occasional slight
showers. Fine night.

London: Atmospheric Pressure.—During the week ending May 10, the reading of the barometer at the level of the sea increased from 20,36 inches at the beginning of the week to 20,40 inches by 9 A.M. on the 4th, decreased to 20,38 inches by 3 P.M. on the same day, increased to 30 o7 inches by 9 A.M., and decreased to 30 inches by midnight on the 7th, increased to 30,22 inches by 9 A.M. on the 9th, and decreased to 30.27 inches by 9 A.M. on the 10th, and decreased to 30.27 inches by 9 A.M. on the 10th, and decreased to 30.27 inches by 9 A.M. on the 10th, and was 30.18 inches by the end of the week.

The mean reading of the barometer for the week at the level of the sea was 20,92 inches, being 0,22

at the level of the sea was 29.92 inches, being 0.22 inch higher than last week, and 0.02 inch lower than

the average of the week.

Temperature. — The highest temperature in the shade in the week was 74°.2, on the 10th; the highest on the 7th was 55°. The mean of the seven high on the 7th was 55°. The mean of the seven high day temperatures was 60°.7. The lowest temperature was 36°.1, on the 5th; on the 9th the lowest temperature was 46°.5. The

mean of the seven low night temperatures was 41°.5.

The greatest range of temperature in one day was 28°.7, on May 10; the smallest was 13°.7, on the 6th.

28°,7, on May 10; the smallest was 13°,7, on the 6th. The mean of the seven daily ranges was 19°,2.

The mean temperatures were—on the 4th, 48°,3; on the 5th, 44°,5; on the 6th, 48°,6; on the 7th, 47°,3; on the 8th, 50°,0; on the 9th, 54°,0; and on the 10th, 52°,5; of these the first five were below their averages by 2°,5,6°,7,3°,4°,4, and 0°,7 respectively; and the last two were above by 3°,4 and 5°.2.

The highest reading of a thermometer with blackened bulb in vacuo placed in the full rays of the sun was 132°, on the 10th. The mean of the seven readines was 100°,6.

readings was 100°.6.

The lowest reading of a minimum thermometer with its bulb placed on grass was 29°, on the 7th. The mean of the seven readings was 34°.4.

Rain.—Rain fell on four days to the amount of

0.38 inch, of which 0.22 inch fell on the 5th.

ENGLAND: Temperature .- During the week ending May 10 the highest temperatures were 75° at Cambridge, 74°.2 at Blackheath, 70° at Leicester and Hull; the highest star at Plymouth was 60°.3, at Wolverhampton 60°.4, and at Bradford 61°.4. The general mean was 66°.2.

The lowest temperatures in the week were 33°, at Cambridge and Hull, 33°.4 at Wolverhampton and Nottingham; the lowest at Truro 41°, at Plymouth 40° and at Preston 39°.5. The general mean was 36°.4.

The greatest ranges were 42°.2 at Cambridge, 36°.1 at Elackheath, 37° at Hull; the smallest ranges were 10° 5 at Perston 20°.3 at Plymouth 32°.

were 19°.5 at Preston, Bradford, The genera at Preston, 20°.3 at Plymouth, 23°.4 at The general mean was 29°.8.

The mean of the seven high day temperatures was highest at Cambridge, 62°, 9, at Nottingham 61°, 1, at Blackheath 66°, 7; and was lowest at Freston, 54°, 6, at Bradford 54°, 9, at Bolton 55°, 1. The general mean was 58°.

mean was 50°.

The mean of the seven low night temperatures was highest at Liverpool, 46°.7, at Truto 46°, at Preston 44°.5; and was lowest at Wolvenhampton, 39°.3, at Cambridge 40°.2, at 11ull 40°.7. The general mean

was 42°.7.

The mean daily range was greatest at Cambridge, 22°.7, at Hull 19°.9, at Nottingham 19°.8; and was least at Liverpool, 9°.2, at Preston 10°.3, at Bradford 11°.6. The general mean was 15°.3.

The mean temperature was highest at Truro, 51°.3, at Blackheath 50°.6, at Cambridge 49°.9; and was lowest at Wolverhampton, 45°.8, at Bolton 46°.6, at Sunderland 46°.9. The general mean was 48°.7.

Rain.—The largest fall was 0.82 inch at Bradford, 0.56 inch at Leeds, 0.54 inch at Sunderland; the smallest fall was 0.08 inch at Brigbton, 0.07 inch at Leicester, and 0.08 inch at Liverpool. The general mean fall was 0.34 inch.

Scotland: Temperature. - During the week ending May 10, the highest temperature was 62 Glasgow; at Greenock the highest was 57°. general mean was 59°.8.

general mean was 59°.8.

The lowest temperature in the week was 30°.1, at
Aberdeen; at Leith the lowest temperature was
35°.5. The general mean was 33°.2.

The mean temperature was highest at Leith, 48°;
and lowest at Pertb, 44°.6. The general mean was

Adin. — The largest fall was 1.46 inch, at Edinburgh and Paisley; and the smallest fall was 0.66 inch at Aberdeen. The general mean fall was 1.17 inch.

JAMES GLAISHER, F.R.S.

Answers to Correspondents.

Ammonia from Gasworks: T. H. K. The best advice we can give you is to let it alone, as it can only be used safely in very small quantities.

UCHARIS: 7. Searle. The variety seems to be all right, but the cause of the plants not doing satisfactorily is not apparent. There must be something in the treatment which they do not like, what that may be you should be the best able to form an opinion.

you should be the best able to form an opinion.

INSECTS: 7. J. P. The beetle sent is the common cockchafer (Melolontha vulgaris). I. O. W. — S. J. The insects which have gnawed off the tops of your grafts of Plums, Briers, and Roses, are the common Curculio oblongus. Shake the plants over a white cloth, after dark, when the insects fall down, and may be destroyed with hot water. I. O. IV.

MIMULUS: James Wood. We do not see where the newness comes in. Hose-in-hose Mimuluses are no novelty now.

novely now.

NAMES OF PLANTS: Miss Haig. Thomasia solan-acea.—C. W., Weybridge. Erodium cicutarium.—T. Imrie & Sons. Ixia crateroides var.—IV. B. An Abies, which we do not recognise from such a small spectmen.—C. C. D. 1, 2, 3, Cardamine hrsuta; 4, Capsella bursa-pastors; 5, Equisetum palvere; 6, Equisetum arvense. Cardamine amara is as large, or larger than C. pratensis; the flowers are about the same size, but white, and the leaves larger.

RAFFIA: R. S. The Raffia or Roffia so much used for tying purposes, is the cuticle of the leaves of the Palm, Raphia Ruffia, a native of Madagascar and Mauritius.

TREE TOMATO.—If the gentleman who wrote us a few weeks ago, asking for information as to obtaining the seeds of this plant, will again send his name and address, we shall be happy to send him a few, received districtions. direct from Jamaica.

WALLFLOWER: IV. B. H. Your double black velvety Wallflower, a counterpart of the double yellow, is a very old plant, not cultivated now so much as it used to be.—Haveck. No darker than the common bloodered grown for the London market.

CATALOGUES RECEIVED.

COMPAGNIE CONTINENTALE D'HORTICULTURE, Ghent, Belgium—New, Rare, and Beauuful Plants. AUGUSTE VAN GEERT, Ghent, Belgium—General Plant

AUGUNTE VAN GEERT, Ghent, Belgium—General Catalogue. THOMAS KENNEDY & Co., Dumfries—Select Florists'

Flowers.
CLARK BROTHERS & Co., 65, Scotch Street, Carlisle—
Summer Flowering Plants.
JAMES DICKSON & SONS, Newton Nurseries, Chester—
Stove, Greenhouse, and Bedding Plants, &c.

Markets.

COVENT GARDEN, May 15.

[The subjoined reports are furnished to us regularly every Thursday, by the kindoess of several of the principal sales-men, who revise the list weekly, and are responsible for the quotations. It must be remembered that these quotations quotations. It must be remembered that these quotations are averages for the week preceding the date of our report. The prices fluctuate, not only from day to day, but often several times in one day, and therefore the prices quoted as averages for the past week must not be taken as indicating the price at any particular date, still less can they be taken as guides to the price in the coming week. ED.]

LARGE quantities of Channel Islands Grapes have reached us during the past week, and prices have considerably fallen. Strawberries are in good supply, with no alteration. Trade rather more lively. James Webber, Wholesale Apple Market.

ATOS.—Kent Magnums, 80s. to 100s. per ton; do., Regents, 80s. to 100s.; Champions, 50s. to 65s.—New: Jersey Kidneys, 16s. per cwt.; Lisbon, 1cs.; Malta, 10s. to 12s.

FRUIT .- AVERAGE WHOLESALE PRICES.

Apples, ½-sieve . 3 o - 50
Grapes (oew), per
1b. . . . 2 o - 40
Lemous, per case. . 10 o - 14
o Fachs, per do . . 6 o - 20
o Fachs, per do . . 6 o - 20
o Fachs, per do . . 6 o - 20

LONDON: May 14—Messrs. John Shaw & Sons, of 37, Mark Lane, report that no feature either of interest or importance is just now showing itself in connection with the trade for farm seeds, the season being in nection with the trade for nam seeds, the season being in lact over. Stocks remaining on hand are generally in moderate compass. For white Mustard and Rape seed there is rather more inquiry. Spring Tares are almost exhausted. Sowing orders still come to hand. The demand for Canary and Henp seed is meagre. Feeding Linseed is firm. Other articles continue without quotable change.

CORN.

At Mark Lane on Monday, in English Wheat, held for late value, very little business was done. Foreign ruled 1s. lower on the week for white and 6d. to 1s. lower for ed. Stout Barley was 1s. over Monday staninght, and grinding descriptions the turn dearer. Oats were not appreciably altered in value, but were more saleable. Beans and Peas were quiet and unchanged, and Maize scarce and firm at 6d. to 1s. over the rates of the previous Monday.—On Wednesday the tendency of Wheat was perceptibly weaker. Stout Barley off stands was firm, grinding sorts quiet. Maize, from scarcity, brought in some cases 3d. advance. Beans and Peas were quiet, and the market 1or Oats barely so good.—Average prices of corn for the week ending May 10:—Wheat, 38s. 2d.; Barley, 30s. 4d.; Oats, 20s. 5d. For the corresponding period last year:—Wheat, 43s.; Barley, 37s. 4d.; Oats, 20s.

HAY,

HAY.

Tuesday's Whitechapel Market report states that supplies of Clover, hay, and straw were very large, with a decidedly downward tendency in prices. Quotations:

—Prime old Clover, 95z. to 106z. j. inferior, 60z. 10 75z.; prime second cut, 90z. to 105z. est meadow hay, 80z. to 38z.; inferior, 40z. to 65z.; and straw, 28z. to 36z. per load.—On Thursday there was a large supply on skie. Trade was dull, especially for hay, prices for which were easier. — Cumberland Market quotations: — Superior meadow hay, 84z. to 90z.; inferior, 60z. to 72z.; superior old Clover, 108z. to 115z.; inferior, 70z. to 85z.; prime second cut, 95z. to 105z.; and straw, 29z. to 36z. per load.

POTATOS.

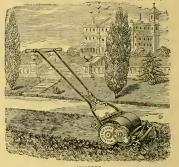
POTATOS.

The following are the average prices current during the week:—Magnum Bonums, 6os. to 100s.; Champions, 4os. to 65s.; Regents, 4os. to 50s.; Snowflakes, 5os. to 55s.; and Roses, 4os. per ton; new Potatos, 3d. per Ib.; foreign, do., 9s. to 14s. per cwt. The imports into London last week were:—14to bags from Harlingen, 8o tons Pontrieux, 5218 packages Malta, 654 baskets St. Nazaire, 176 cases Port Said, 315 sacks Rouen, and 2 sacks from Brussels.

Government Stock.—Consols closed on Monday at 101½ to 101½ for the delivery, and 101½ to 101½ for the account. Tuesday's prices were as on the previous day for delivery, and 101½ to 101½ for the account; the same figures were recorded on Wednesday. The final quotations of Thursday were 101½ to 101½ for delivery, and 101½ to 101½ for the account.

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LAWN MOWERS.



HIGHEST PRIZE

At the PARIS EXHIBITION, 1878; nd the Jury, in their Report, say:—"The 'ARC DEAN' did the BEST WORK of any Lawn Mo And the Jury, in their Report, 'ay: - "7 MEDEAN' did the BEST WORK of any

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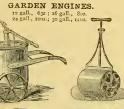


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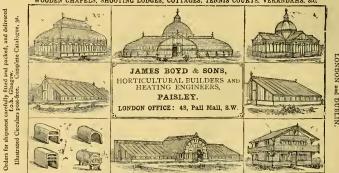
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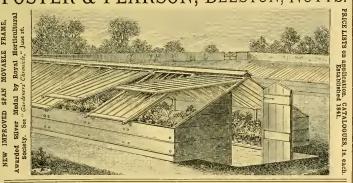
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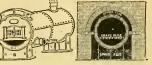
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Royal Horticultural Society's Show, South Kensington, London, June 3 to 7, 1881. The "Journal of Horticulture," of June 9, 2012.—"Movince Machines.—After a critical scanniant on the Silver Medal was granted to the old firm of world-wide fame, Messrs, T. Green & Son, of Leeds and London. As the Machines are known in all Jands where good law cherished, it is quite unnecessary to give any description of them."

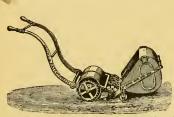
Upwards of 115,000 of these Machines have been Sold since they were first introduced in the year 1856,

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4th. They make little or no noise in working. 3th. They will cut either short or long Grass, set or 6t3.



SINGLE-HANDED LAWN MOWER.

n	nii	DI	C_UA1	unen	1 AW/	M MAG	W	CD		
To	cut	14	inches	•••	• • •		5	10	0	
			inches		***		4	10	0	
			inches		•••	***	3	10	0	
			inches				2	10	0	
			inches			Price	£I	15	0	

DOORLE-HANDED LAWN MOMEK. To cut 16 inches Price £6 10 0

			inches			***			
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			inches						
	If m	ade	stronger,	suitable	for	Donkey,	30s. e	extra.	

Prices of Donkey, Pony, and Horse Machines, including Patent Self Delivery Box, with Cross-stay complete, suitable for attaching to Ordinary Chaise Traces or Gig Harness:—

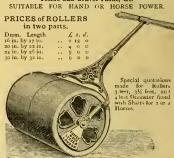
DONKEY and PONY	MACE	INES	S.				MACH				
To cut 26 inches		£14	0	0	To cut 30 i	nches		;	(22	0	0
To cut 28 inches		16	0	0	To cut 36 i	nches		•••	26	0	0
To cut 30 inches					To cut 42 i						
Leather Boots for Donkey		1	0	0	To cut 48 i	nches		***	34	0	0
Leather Boots for Pony		I	4	0	Leather Boo	ots for H	orse		I	9	0
The 26 and 28 inches can eas	ily be e noise i	worked n workin	by :	a Do	nkey, the 30 ioc	hes by a	Ponv, and	the large	size:	by gaw	a ay,





Specially designed to meet 2 want that has long been felt in cutting the overhanging grass on the edges of walks, borders, shower-beds, &c., and do away with the tedious operation of cutting with shears.

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Agent for Manchester—John Harwoon.

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CHRONICLE. GARDENERS'

Established 1841.

No. 543.—Vol. XXI. (SERIES.)

SATURDAY, MAY 24, 1884.

Registered at the General Price 5d. Post-office as a Newspaper. Post-FREE, 5½d.

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Arthur Veitch Memorial Fountain
Cattleya-house, Mr. Lee's
Glazing, new system of, and Lock Furniture
Portugal Laurel, a Peculiar

DAFFODIL CONFERENCE
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COLOURED PLATES (19 in. × 13 in.) of
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THE GARDENERS' CHRONICLE,
Volume XX., JULV to DECEMBER, 1883.
W. RICHARDS, 41, Wellington Street, Strand, W.C.

POYAL HORTICULTURAL SOCIETY, South Kensington, S.W. EXHIBITION of FRUITS and VEGETABLES in concection with the International Health Exhibition will be held in the Conservatory on TUESDAY, May 27.
LIBERAL PRIZES are oftered. Schedules and all particulars to be had on application to Mr. A.F. BARRON. Entries Close Saiurday, May 24.
Exhibitor's Entrance—West Side of Royal Albert Hall.

ROYAL HORTICULTURAL SOCIETY, COYAL HORITCULIDRAL SOCIETY,
South Resignon, SWINGS, Fruit and
Front, At 1.4 Mar. WHITE ESS PRECIENT FICAT PR.
GENERAL HAM., WHITE ESS PRECIENT FICAT PR.
GENERAL MEETING for the Election of Fellows,
at 3 P.M., in the Prince's Room, Royal Albert Hall, on
TUESDAY NEXT, May 20
PRUIT and VEGETABLE SHOW,
N.B.—Exhibitor's Entrance, west side of Royal Albert Hall.

THE GRAND INTERNATIONAL
POTATO EXHIBITION will be held at the Crystal
Palace, Sydenham, S.E., on WEDNESDAY, THURSDAY,
and FRIDAY, October 8, 9, and 10, 1884. For Schedules,
apply (enclosing stamp) to
Headley Lodge, Croydon Road, Anerley, S.E.

GRAND EXHIBITION of HARCY PLANTS, commencing on FRIDAY, May 30, and following days.

WANNED TO BUY, FLOWERING EFFECTIVE HARCY PLANTS, commencing on FRIDAY, May 30, and following days.

WANTED TO BUY, FLOWERING EFFECTIVE HEAD TO BUY, FLOWERING EFFECTIVE HEAD, and the man green, remainder upon elivery part money given upon agreement, remainder upon elivery part money given upon agreement, remainder upon elivery that may be a supply them.

Every convusince will be given to persons who wish not to sell, but exhibit.

J. F. JOHNSON, Secretary.

SAFFRON WALDEN FLOWER SHOW, IUNE 12 and 13. PRIZES, ONE HUNDRED and SIXTY POUNDS. Entries close May 90, Schedules and Entry Forms of B. L. ACKLAND, Hon. Sec.

EEDS FLORAL and HORTICULTURAL
EXHIBITION, JUNE 25, 26 and 27.
Schedules on application to
G. BUSH. Secretary. G. BUSH, Secretary.

NOTTS HORTICULTURAL
DILY and in Schedule of Prizes now ready and had on application; AMES DON, 20, Chapel Bar, Nottingham.
E. STEWARD, 2, Exchange Row, Nottingham.

HULL BOTANIC GARDENS,
HORTICULTURAL EXHIBITION,
JULY 2, 3, and 4. Schedules and particulars of

PHILIP MAC MAHON, Curator and Secretary. Botanic Gardens, Hull.

NATIONAL ROSE SOCIETY.
SALISBURY MEETING, WEDNESDAY, July 9. W. H. WILLIAMS, Local Hon. Sec.

HORTICULTURAL EXHIBITION, to be held at the BOTANICAL GARDENS, SHEF-FIELD, JULY 21 and 25. Prize Schedules may now be obtained on application to Mr. I. EWING. Curate.

SHREWSBURY GREAT FLORAL FÉTE, WEDNESDAY and THURSDAY, August 20 and 21 Eogland. Twenty Plants, £25, £20, £15. Schedules and full particulars from

Messrs. ADNITT AND NAUNTON, Hon. Secs.

THE AMERICAN PLANTS at Knap Hill will be in their greatest beauty during the soung fortieth, and may be send shy, Sunday severepted.

The RHODOENDRONS and AZALEAS in Rotten Row, Hyde Park, and in the Royal Botanic Cardens, Regent's Park, are supplied by ANTHONY WATERER, Knap Hill Nursery, Woking ANTHONY

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—Nice Plants, ready for potting, of the finest Covent Garden strains, 12: 6d, per dozen, 104, per 100.

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OR SALE, PRIVATELY, in consequence L' of the owner giving up the cultivation of hot Orchids, about 80 Choice Plants of PHALÆNOPSIS AMABILIS and SCHILLERIANA, the whole of which were selected in bloom

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Thursday Next.-(Sale No. 6664.)

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VERV VALUABLE IMPORTATIONS.

M.R. J. C. STEVENS will SELL by
AUCTION, at his Great Rooms, 38, King Street,
Covent Garden, W.C., on THURSDAY NEXT, May 29, at
half-past 12 Glock precisely by order of Mr. F. Sadete, very
valuable unpertations of ORCHIDS, including Cattleyas,
Odouteglosuums, Leslias, Epidendrums, Sec.

On view morning of Sale, and Catalogues had.

Thursday Next .- (Sale No. 6664.)

TRIUTGUAY NEXT.—(Saile No. 0004.)

CHOICE CALADIUNS

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The Housing of Sile, and Catalogues had.

NR. J. C. STEVEN'S begs to announce will take place on WEDN'S DAY, June 4. Gentlemen desirous of cattering Plants for this Sale, will please send particular to the sale, will please send particular to the sale of the

Important Sale of Established Orchids, on account of Expiry of Lea

on account of Expiry of Lease.

M. R. J. C. STEVENS will SELL by AUCGarden, W.C., on WEDNESDAY and THURSDAY, June 18 and 10, at half-past 12 o'Clock precisely each day, the whole of the valuable COLLECTION OF Collinor Place, Edinburgh, who is giving up their culture, owing to the expiry of his lease, a number of years. The following will be found among them:

Madewalls Veitchig grands

Haura Netter osannines

Haura Section 12 of Collinor 12 of Collinor 12 of Section 13 of Section 13 of Section 13 of Section 14 of S

Masdevallia Veitchii grandi-flora Harryana lutea

, Harryana lutea
, artosanguinea
, artosanguinea
, artosanguinea
, artosanguinea
, odolotoglossum Andersonia
, Bluntii
Cattleya Morganæ
On view morning of Sale, and Catalogues had.

Lælia Williamsii
,, elegans
,, anceps Dawsoni
,, grandflora
Vanda Lowii
Dendrobium Griffithianum
,, Schroderi
, Walkerianum

Tuesday Next.

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SPECIAL SALE OF ORCHIDS IN FLOWER.

MESSRS. PROTHEROE AND MORRIS

67 and 68, Cheapsida, E.C., on TUESDAY NEXT, at halfpast 12 o'Clock precisely, an unusually fine assortment

OKCHIDS in Flower and in Bud. Amongst them will be

found :Odontoglosum Alexandræ, inclading a large number of
splendid varietes from Mr.
F. Sander, St. Albans
Odontoglosum vexillarius
grand varietis
Wickeanum
Cypripedum caudatum
Madevalia Harryana, some
striking varieties
On view morning of Sale.
Cattleya gigas
, Sandersna, beautiful
varieties
Odottique Marshallianum
Dendrobium Bensonie aurantiaca
Unication in the continuation of the continuation on view morning of Sale. Catalogues may be had of the Auctioneers, 67 and 68, Cheapside, E.C.

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Decome the tavourier residential distinct at the west-End of London.

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are favoured with instructions to SELL by AUCTION, on the Premises, on WEINESDAY. May 28, at 19 o'Clock purcutally (manedately) preceding the Sale of the Plants), and the property of the Plants, and the property is let of the Plants, and the property is let on lease for an unexpired term of fitty years from September 29, 4572, at the low growth of the years from September 29, 4572, at the low growth of the years from September 29, 4572, at the low growth of the years from September 29, 4572, at the low growth of the years from September 29, 4572, at the low growth of the years from September 29, 4572, at the low growth of the years from September 29, 4572, at the low growth of the years from September 29, 4572, at the low growth of the years from September 29, 4572, at the low growth of the years from September 29, 4572, at the low growth of the years from September 29, 4572, at the low growth of the years from September 29, 4572, at the low growth of the years from September 29, 4572, at the low growth of the years from September 29, 4572, at the low growth of the years from September 29, 4572, at the low growth of the years from September 29, 4572, at the low growth of the years from September 29, 4572, at the September 29,

Richmond, S.W. MESSRS. PROTHEROE AND MORRIS
beg to announce that the SALE of PLANTS advertised for THURSDAY NEXT. May 29, will NOT NOW
TAKE PLACE.—67 and 68, Cheapaide, E.C.

Friday Next.

VALUABLE IMPORTED ORCHIDS.

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FRIDAY NEXT, at half-past 12 o'Clock precisely, very valuable importations from the East, such as VANDAS, AERIDES,
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To Nurserymen, Florists, and Others

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MESSRS. WALKER BROS, in conjunction instructions to SELL by PUBLIC AUCTION, on TUESDAY and WEDNESDAY, May 27 and 28, at 11 for 12 Clock precisely, the LEASE, GODDWILL, and GLASSHOUSES of the above, in One Lot, together with the valuable Stock of BEDDING-OUT PLANTS, HOREES, CANTS, VANS,

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MESSRS, T. S. BEST AND HARRIS give notice that they will SELL by AUCTION, in the Gardeos attached to the residence, "Acacia," on WEDINEDAY, May 188 at 1r o'Clock, the Valuable COLLECTION of PLANTS, comparising large Specimen Tree Ferns, large Crotons, Cool Orthods, more specimen of Stove and Greenhouse Plants. Amongst the above will be found many specimens fit for exhibition purposes. All are well grown, and in bealthy condition.

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M.R. S. ANDERSON begs to announce. And that he is favoured with instructions from Mr. J. C. Padman to SEAL by AUCTION, on the Nursery Grounds, Boston Spa, on WEDNESDAY, May 26, and following days, to commence at all the stock of Exhibition (1970). The Commence of the Commence of Exhibition Strong and Reen State of Exhibition, STOVE, and GREENHOUSE PLANTS, Palms, Ferns, Flowering, Ornamental Foliage, and Bedding-out Plants, &c. The valuable Exhibition Plants to be offered have been highly successful as well find this an exceptional opportunity for purchasing.

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Ficus elastica alba variegata. ROBERT P. KER & SONS

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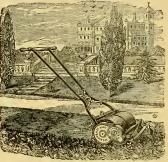
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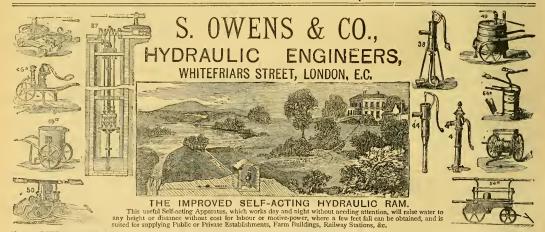
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AMARYLLIS, GREENHOUSE

RHODODENDRONS, &c.,

is, perhaps, the largest in Europe; Amateurs and others requiring Plants of this description would do well to pay these Nurseries a visit.

THE COLLECTION OF ORCHIDS IS ALSO VERY EXTENSIVE,

Several Houses being filled with these Plants.

Specimens are grown in large numbers, as well as a very large Stock of Established, Imported, and Semi-established Plants. The Orchid Houses are worthy of a visit at this time of the year, there being a good display of Plants in Flower of all sizes.

Victoria and Paradise Nurseries, UPPER HOLLOWAY, LONDON, N.

We can highly recommend the following Choice Flower Seeds as being really fine strains and well worthy of cultivation:—

strains and wen worthy of cultivation		. 1
Per packet		d.
Auricula, choicest Alpine	I	0
Antirrhinum majus, splendid mixed	0	6
Antirrhinum Tom Thumb, splendid mixed	0	6
Aquilegia chrysantha, fine yellow	0	6
Aquilogta complea habrida	ī	0
Aquilegta cœrulea hybrida		
Aquilegia glandulosa, true (Grigor's)	I	6
Begonia, Tuberous-rooted hybrids, very fine		
mixed 15. 6d. and	2	6
Canterbury Bells, Deac's new hybrids	T	0
Cantarhury Rells double rose very fine	I	0
Carnation. spleodid double, from stage flowers, a remarkably fice strain	-	
Carnation, spicedia double, from stage nowers, a	_	
remarkably fide strain 25, ba, and	5	
Carnation, Perpetual or Tree 25, 02. add	5	٥
Carnation, choicest, yellow varieties	3	6
Calceolaria hybrida, splendid mixed 15. 6d. and	2	6
Cineraria hybrida, choice mixed 15. 6d. and	2	6
		6
Cinerarta, new dwarf varieties, mixed	2	
Cineraria, choicest double-flowered 25. 6d. and	S	0
From Mr. H. Brown, Laugford, July 21 "The		
CALCEOLARIA and CINERARIA seed that		
you sent me last year turned out splendidly; the		
flowers were the admiration of all who saw them:		
From Mr. H. Brown, Langford, July 21.—"The CALCEOLARIA and CINERARIA seed that you sent me last year turned out splendidly; the flowers were the admiration of all who saw them; many of the CALCEOLARIA blooms were quite		
all inches across."		
Coleus, very fine mixed	I	6
Cyclamen, Daniels' Giant Prize 3s. 6d. and	5	0
Dahlia, choicest double mixed 15. 6d, and	2	6
Dahlta, choicest single mixed	-	6
Danna, choicest single mixed	-	
Dianthus Heddewigi, spleodid double 6d. and	ĭ	0
Gloxinia hybrida, Daniels' superb mixed, beau-		
tifully large-flowered varieties 18, 6d, and	2	6
Hollyhock, Chater's fine double	I	6
	ī	0
Mimulus, Daniels' large-flowered	7	0 1
Pansy, Daniels' Show and Fancy, splendid	1	6
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Pansy, Daniels' Show and Fancy, splendid Pansy, Daniels' Prize Blotched, magnificent varieties		
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Gardeners' Chronicle.

'SATURDAY, MAY 24, 1884.

IMPROVEMENT OF FARM AND FOOD PLANTS.

THE returns of agriculture may be increased and the yield of the crops improved either by means of higher farming, or by enlarging the productive powers of the plants of the farm. Horticulturists are familiar with the subject of plant "improvement." They are accustomed to the modifications produced by cross-breeding and selection. They are aware that our "excellent vegetables and luscious fruits," as Mr. Darwin describes them, had but a lowly origin in sour Crabs, or Sloes and Bullaces, or in such stringy roots as those of the wild Carrot or Parsnip, and those primeval forms of Beet or of the Cabbage tribe which grow on the cliffs of our European coasts, or on the sea shore. The task of improving the plants of the garden has been abundantly rewarded at all periods down to the present bour; in fact it may be said that the horticulturist has never tried his hand upon them without producing marked results. He may not always achieve what he regards as improve-ments, but at all events he finds his plants plastic. There is nothing sterotyped in vegetable life, colours may be altered, forms modified, size diminished, or the contrary, while beauty in flowers, and flavour and quality in fruits and vegetables can be readily developed. All this the horticulturist is familiar with, and whether he has read De Candolle's recent work on the Origin of Cultivated Plants, or not, he is aware that although the amelioration of some. of the most useful garden plants was pre-historic, the same art that unknown improvers employed is still practised with success.

Under these circumstances the Royal Agricultural Society of England has published a paper on the "Improvement of the Plants of the Farm," in the latest number of its Journal, and no horticulturist will question M. Vilmorin's conclusion, when he remarks in a letter to the author of the paper :- "I have no doubt but the process of improvement, which has given such excellent results as applied to vegetables and ornamental plants, might also be used successfully in the case of the plants of the farm." The earliest grown cereals now in preservation were taken from the rubbish heaps of the Lake dwellings in Switzerland. They are better no doubt than those first produced by that mythic personage—we may call her "Ceres"—who succeeded in en-nobling the wild grasses; but they are very inferior to the Wheat and Barley of the present day. The same remark applies to the Peas and Beans of the Bronze period (Animals and Plants under Domestication, by Charles Darwin, M.A., F.R.S., &c.); so that these agriculturists, especially in America, who are now attempting the further improvement of the cereals, possess for their encouragement the same evidence as horticulturists-that of accom-

plished facts. How many "subjects" in horticulture may have undergone these enforced improvements which are referred to here, it would not be easy to estimate; but the plants of agriculture are

not a dozen, all told, if the varieties of pasture grasses be excluded, and the main crops of the farm are composed of a few cereals, "roots," pulses, and forage plants. It can hardly be doubted that these few plants may be improved, if the attention of breeders and selecters be concentrated upon them. Thomas Andrew Knight always claimed to have increased the stamina of Wheat by crossing varieties, so that his new sorts withstood the blights of 1795 and 1796, when ordinary varieties were badly damaged. In 1819, Mr. Patrick Shirreff commenced a very successful career as an improver of Wheat and Oats, proceeding for years on the principle of selecting the best plants in the fields. Late in life he commenced the crossing of varieties, and his crosses won their way, though unfortunately he was still a young breeder, though an old man, when he died. At present there are no English breeders of cereals known to fame, though we learn from their own essays, and from their addresses to a Convention of Agriculturists at Washington, and from other sources, that in the United States and Canada there are several. In this country, however, the selection of cereals was never more actively pursued, and several new and approved sorts, both of Wheat, Barley, and Oats, are on the market. We may here observe, that mere thin seeding, or high feeding, is not "selection," and a monster ear is not a guarantee that the principles of selection have been judiciously applied, or, indeed, applied at all. Farmers need, at present, a good deal of instruction in this department. As a rule they appear somewhat inert on this, as on other matters, and, on the contrary, some of them are too easily led astray by pretended improvements. Moreover, some farmers have yet to learn that improvements are often relative to soil and climate. A superfine white Wheat has a limited habitat, and, in like manner, most of the varieties have their own districts and special soils-strong coarse sorts may be excellent on poor soils, but not elsewhere.

Probably the greatest improvements in the plants of the farm are those effected by the breeders of Turnips, whose favourite varieties have been greatly increased, and their habit altered by long-continued selection for the purpose of adapting them to a greater variety of soils and circumstances. There are sorts of Turnips, for example, that bury themselves to their crowns, and which are for that reason secure from frost and well adapted for the production of Turnip-tops, much to the convenience of flock-masters in spring. There are sorts that come quickly, and others that are slow, and they obey the same rule of greater or less speed in regard to their decay. Some are best for folding, some for storing, some for the South, others for the North. In Cabbages the same diversities have been induced, and the cultivation of this crop has been greatly extended owing to its newly-acquired endowments and increased adaptability. Mangel Wurzels, too, have been greatly improved, and wonderfully trimmed up in neck and root by the art of the breeders, besides being rendered far more nutritions. Of Potatos and their infinite varieties nothing need be said, the subject being familiar. Beans have been influenced by selection, not by crossing of varieties. Little has been done in field Peas, though, judging from what has been done in the garden, much probably might be done to increase their yield and improve their quality. The forage plants also have been neglected, and the common red or broad-leaved Clover remains still a weakly subject, the victim of that mysterious infirmity, the Clover sickness, and no one yet has tried to invigorate it by crossbreeding. If the Alsike Clover be regarded as an accidental hybrid between Trifolium repens and T. pratense, as Linnæus thought-and it certainly looks like a cross-then Nature

effected a capital mingling, and produced a plant which all farmers approve of, the Alsike Clover being robust, and yielding a heavy crop. As forage crops are more than ever in demand, some sanguine improver perhaps will take the hint. We know what happens in horticulture when a demand springs up; it need hardly be added that the improvement which the Royal Agricultural Society suggests would result in an increase of the national income just in proportion to this extent.

NEW LACHENALIAS.

THE three following new species of Lachenalia have all come from Mr. T. S. Ware, of Tottenham. I do not know from what part of Cape Colony they have been procured. Of the four subgenera, as defined in my Monograph in the eleventh volume of the Paurnal of the Linnean Society, these all belong to Chloriza, which contains seventeen species out of the twenty-nine there described.

LACHENALIA (CHLORIZA) FISTULOSA, n. sp.— Foliis 2 lanceolatis levibus scapo equilongis; floribus 12—15 laxe spicatis, odoris, pallide versicoloribus; bracteis minutis delitoideis; calycis campanulati sepalis ovato-oblongisalbido-cœruleis apice brunneolis; petalis obovato-unguiculatis albis purpureo marginatis calyce paulo longioribus; staminibus calyce æquilongis.

Bulb depresso-globose, ½ inch in diameter; outer tunics white. Leaves 2, lanceolate, green, fleshy, unguiculate, 4 inches long, ½ inch broad. Seape green, terete, as long as the leaves. Spike lax, 2 inches long, ¾ inch in diameter; bracts minute, deltoid. Flowers fragrant, ½ inch long; calyx ampullæform, ½ inch long, white tinged with sky-blue; sepals ovate-oblong, brown at the tip. Petals obevate-unguiculate, spreading at the top, white, edged with purple. Stamens as long as the calyx. Several upper flowers sterile, with larger bracts.

LACHENALIA (CHLORIZA) LILACINA, n. sp.—Bulbo globoso; foliis 2 lanceolatis brevibus falcatis carnosis nigro maculatti; scapo rubro-brunneo maculato; floribus subdense spicatis lilacino-cœruleis odoris; bracteis minutis deltoideis; calyce oblongo sepisis oblongis, petalis oblongo-unguiculatis calyce sesquilongioribus late patulis; genitalibus calyce æquilongis.

Bulh as in the last. Leaves 2, lanceolate, falcate, fleshy, smooth, 4 inches long, $\frac{1}{2}-\frac{3}{4}$ inch broad, glossy green, with copious, immersed, round, blackish spots. Scape slender, terete, 4—5 inches long, greenish-red, mottled with red-brown. Flowers ahout 20, arranged in an oblong spike 2—3 inches long, an inch io diameter, all strictly sessile; bracts minute, deltoid. Calyx oblong, bright lilac with a little blue at the base, $\frac{1}{4}$ inch long; sepals ovate-oblong. Petals the same colour, half as long again as the sepals, spreading widely, obovate-unguiculate. Stamens as long as the calyx. Many upper flowers of the spike sterile, with larger lanceolate bracts.

LACHENALIA (CHLORIZA) ODORATISSIMA, n. 5p.

— Bulbo globoso; foliis 2 lanceolatis pustulatis scapo longioribus; scapo viridi; floribus circiter 20 albidis odoratissimis racemosis; bracteis minutis deltoideis, pedicellis flore brevioribus; calyec eampanulato, sepalis ovato-oblongis apice viridulis; petalis obovatis patulis calyce sesquilongioribus; staminibus petalis requilongis.

petalis equilongis.

Bulh globose, $\frac{1}{3}$ inch in diameter. Leaves 2, lanceolate, falcate, fleshy, green, much blistered over the face, $\frac{1}{3}$ foot long, $\frac{1}{3}$ — $\frac{3}{3}$ inch broad. Scape green, terete, shorter than the leaves. Raceme moderately dense, $\frac{1}{3}$ — $\frac{1}{2}$ inches long, nearly t inch in diameter; lower pedicels $\frac{1}{3}$ — $\frac{1}{3}$ inch long; bracts minute. Calyx $\frac{1}{3}$ inch long; sepals oblong, white, with green tip. Petals obovate-unguiculate, $\frac{1}{3}$ iach long, the tips very spreading. Stamens as long as the petals.

The two first are nearest to L. pustulata, and the last to L. Cooperi. J. G. Baker.

AOTUS GRACILLIMA.—This is a West Australian shrub, with elongated branches and linear leaves. The flowers are a bright yellow marked with red, and are produced in such profusion along the branches as to hide the foliage, and to give the slender twigs the appearance of golden cylinders. The Aotus requires abouts the same treatment and soil as the Epacris, and will thoroughly repay any little care in cultivation,

WEST AMERICAN FOREST TREES.

In going westward from Lake Superior the arborescent vegetation ceases near Brainerd, the last trees being White Pine, Banks' Pine, the Larch, White Birch, White Maple, and Aspen. Thence to the Rocky Mountains a continuous sheet of herbaceous vegetation covers the surface, and no trees are seen except Cottonwoods (Populus monilifera) along the Missouri. The first ranges of the Rocky Mountains on this route along the Yellowstone River and in the Park are covered sparsely or densely with trees, the higher summits and ridges with Pinus flexilis, James, Abies grandis, and Pseudo-Tsuga Douglasii, Carr.; the foot-hills, and in some cases the levels, are thickly set with Pinus contorta, Dougl., var. Murrayana, Watson. This latter is regarded by some as a distinct species (P. Murrayana, Murr.), but is only an upland form, which is larger and more spreading. Both varieties, however, grow in proximity in many parts of Oregon and Northern California. In the lowlands of the Park are dense thickets of dwarf Willow, and here and there a tree of Populus angustifolia, James, and Pinus ponderosa, Dougl.

The divide west of Helena is covered with scattered trees of Douglas' Spruce, which here reaches a height of 100 feet. In the gorges which head-in the mountains there are a few trees, often of good size, of Pious ponderosa, Dougl, but they are here out of place, and belong properly to the arid country between the Rocky Mountains and the Cascade Range.

In the valley of Clark's Fork, and about Pend'Oreille Lake, the forest growth is quite strong; the rocky cliffs and ridges are set with Douglas' and Menzies Spruces, while the lowlands sustain a crowded growth of slender trees belonging to three species which are characteristic of the Western flora, probably not crossing the divide. These are Pinus monticola, Dougl.; Larix occidentalis, Nutt.; and Thuia gigantea, Of these the first has altogether the babit of our White Pine in trunk, foliage, and branches, but is at once distinguished by its longer and more slender cones. In the Cascade Mountains this species occurs sparingly over a large area, but I have never seen it elsewhere in such abundance as on Clark's Fork. The same is true of the Larix : larger trees than any found here are scattered over the eastern slope of the mountains of Oregon, but they are comparatively rare. The Thuia extends from the sources to the mouth of the Columbia, constantly increasing in size; in the Rocky Mountains never attaining more than one-half the dimensions it reaches on the lower river. As we descend the valley of Clark's Fork the western Hemlock (Tsuga Mertensiana, Carr.) begins to make its appearance; at first as shrubs or low trees simulating exactly the Hemlock of the Eastern States, from which this has only a varietal difference. On the Lower Columbia it grows, like many other Conifers, to be a majestic tree.

Between the last ranges of the Rocky Mountains, near Pend'Oreille Lake and the Cascades, the prevailing and almost the only tree is Pinus ponderosa, Dougl. It scarcely forms forests here, but is scattered over the country in considerable abundance, and

attains a large size. Passing the gorge of the Columbia we come into the dense forests of the Pacific coast proper, where the number and magnitude of the trees is greater than I have seen in any eastern or even tropical region. The trees of several kinds here reach an altitude of 300 feet, and often stand so near together that all undergrowth is absent, and the horseman makes his way through them with difficulty. On the lowlands the Douglas Spruce and the western Arbor-vitæ are the most abundant. Locally the Hemlock is common, and along the rivers the North-western Cottonwood (Populus trichocarpa, T. and G.) stands thick and attains a large size. Along the smaller streams, and in swampy places, the Oregon Ash (Fraxinus Oregana, Nutt.) and the arborescent Alder (Alous rhombifolia, Nutt.) occur in considerable numbers, and attain about equal size-i.e., a diameter of 1 foot, and a height of 50 or 60 feet. Scattered through this lowland forest are the two common Maples of the West (Acer macrophyllum, Pursh, and A. circinnatum, Pursh). Of these the first grows sometimes to the height of 80 feet, with a diameter of trunk of 12 to 15 inches, and on young plants the leaves sometimes attain a breadth of a foot or more. Maple is a peculiar feature in the forests of the Lower Columbia, Puget Sound, and Vancouver's Island. It

never becomes more than 6 inches in diameter, and several trunks usually spring from the same root. These are very slender, droop, and, frequently reaching the ground, take root at the summit. Where these interlacing trees are numerous they form a thicket which is almost impenetrable.

On the higher and more rocky portions of the country the Western Balsam Fir (Abies grandis, Lindl.) and its congeners A. nobilis, Lindl., and A. amabilis, Dougl., are locally numerous, and attain great size-i.e., reach a height of from 150 to 200 feet, and a trunk diameter of 5 to 7 feet. With these, which form a distinct sub-genus, are the omnipresent Douglas Spruce, and Menzies Spruce, formerly known as Abies Menziesii, Dougl., but now generally called A. sitcheosis, Carr. Still higher, and reaching to the line of perpetual snow, are Pinus flexilis, James, var. albicaulis, and Tsuga Pattoniana, Englm., the latter the most beautiful of all Conifers. Less common than the preceding Conifers, but locally abundant in the country bordering the Lower Columbia and Puget Sound, are two Cypresses (Chamæcyparis Lawsoniana, Parlat., and C. nutkaensis, Spach.). Of these the first, sometimes called the Ginger Pine, from the fragrance of its wood, is much admired and cultivated for its beauty, and esteemed for the excellence of the lumber it furnishes. Scarcely less interesting to the botanist is the western Yew (Taxus brevifolia, Nutt.), a tree often 40 to 60 feet in height, growing spariogly in the lower portions of Oregon and Washington. Three species of Juniper are scattered over the drier and more rocky parts of the country bordering the Columbia, viz., Juniperus occidentalis, Hook., in the foot-hills of the Cascades, often an erect tree 40-50 feet in height; J. utah ensis, Englm., low and spreading in the interior; and J. communis, L., generally distributed, and closely resembling in foliage, fruit, and mode of growth, the eastern and European plant.

Among the great Conifers of the Pacific coast two of the most gigantic and valuable, the Sugar Pine (Pious Lambertiana, Dougl.), and the Redwood (Sequoia sempervirens, Endl.), approach, and the first reaches the line of the N. P. Railroad, though their habitat is more southern, and both are important elements in the resources of the country from which it will derive much of its business. Of these the Sugar Pine-nearly related to the eastern White Pine by habit, foliage, cones, and wood-is the monarch of the geous, frequently reaching a height of 300 feet, with a diameter of from 10 to 15 feet. This grows chiefly in the Sierra Nevada and Cascade Mountains throughout Oregon and California. The Redwood is even larger. It is found only along the coast and about Port Orford forms forests, which surpass in the average dimensions of the trees any others I have The lumber furnished by both these great trees is excellent; and, like the White Pine of the East, they are suffering such wholesale destruction as promises soon to exhaust the supply they furnish. next in intrinsic value as timber trees, and, from their abundance, having even greater economic importance, are the Douglas and Menzies Spruces, the White Fir (Abies grandis, Lindl.), and the western White Cedar (Thuia gigantea, Nutt.). These form the basis of the lumber industry of the Puget Sound region, and supply all the great saw-mills, some of which cut 250,000 feet per day. The timber furnished by these trees is good, but the lumber is interior.

With the array of magnificent conifers which flourish in the moist and equable climate of the North Pacific coast the poverty of the angiospermous flora is in striking contrast. Two Maples, two Poplars—one on the high and other on low grounds—one Ash, and one Alder, have heen enumerated. To these should be added two arborescent Willows (Salix lasiandra, Benth., and S. longifolia, Muhl.), one of of little value, and two other hard-wood trees, and he list is complete. On the last mentioned trees I have made the following notes:—

In the open grounds of the Willamette Valley, Puget Sound, and Vancouver's Island, Garry's Oak (Quercus Garryana, Dough.) is not uncommon. It is usually of moderate size, and of a peculiar straggling and misshapen growth; occasionally trees of 3 or 4 feet in diameter are met with, but the shape is so irregular, and the wood so brittle, that it has little value as a timber tree. In the forests of hoth Oregon and Washington Territory two trees are sometimes seen that are sure to attract the attention of the Eastern botanist. One of these, which grows on the

higher grounds, is the Oregon Chinquapin (Castan-

opsis chrysophylla, A. DC.), generally a shrub, but sometimes reaching an altitude of 50 or 60 feet, and conspicuous from the golden pubescence of the underside of the leaf. The other tree to which I refer is the Madrona (Arbutus Menziesii, Pursh.). This is a small tree, but one much admired; the foliage is persistent and rich, the leaves oblong or lanceolate, with serrated edges, and the fruit, which grows in clusters, is red, and somewhat resembles that of the Mountain Ash, but is less abundant, and grows in more open panicles. Thus, Mechan.

MEMORIAL TO ARTHUR VEITCH.

THE accompanying illustration (fig. 127) is that of a handsome drinking fountain erected in Fulham, at the junction of the Moor Park Road with the high road, and nearly opposite the London Athletic Club's ground, by Mr. Harry J. Veitch, io affectionate remembrance of his late brother, Arthur, whose name will loog remain in the memory of gardeners as that of a man who laboured earnestly to improve their status and well-being. The fountain, which is of grey granite, partly polished, and in part rough-



FIG. 127.—ARTHUR VEITCH MEMORIAL FOUNTAIN.

hewo, forms a handsome terminal to the triangular space existing at the point indicated.

AN ISLE OF WIGHT GARDEN.

"MAY I come and see your garden?" I ventured to write, and had a prompt and favourable reply, soon followed by a visit, and a pleasant morning was spent amongst the flowers. Every garden has its speciality, and the skilful cultivator soon finds out the plants that are perfectly at home in the particular soil and climate of his domain.

"I don't know any plant that won't grow here" (near Ryde), said Mr. Ewbank; and it was quite true that plants of the most diverse character and from the most distinct habitats were thriving side by side. The alpine Primulas and the Cape Ixias, Sparaxis, &c., were side by side; still the Ixias seemed the most at home. It is a square garden, such as is attached to most modern fair-sized suburban houses, not quite close to London, but every inch is made use of, and there is an overflow into the church garden adjoining, beautifying this also.

Well, the glory of the garden was the black Iris one fine plant, which had been baked all last summer in a box of sand on a greenhouse shelf until planted out in September, had two fine flowers probably 8 to 9 inches across standing out in the midst of a slightly raised bed of bulbs. Then a lovely flower of 1ris Pavonia, with its spot of many rays, struck me much, though from its commonness the owner almost passed

it unnoticed. Great clumps of Habranthus pratensis, with their Amaryllis-like flowers of metallic crimson; Nemostylis grandiflora is a gem amongst bulbous plants; its flower has the loveliest blue colour imaginable; Dietes Huttoni, has spikes 3 feet high of yellow Iris-like flowers. The last of the Narcissus to bloom was N. gracilis, still in flower, but everywhere bulbs abound on the warm, sunny, southern borders at the foot of the house walls, on beds raised slightly on the lawn in crowded companionship one with the other; the best of the Oxalis, Piottæ, enneaphylla, brasilieosis purpurea, lobata, and many others. chortus of sorts, such as lilacinum, Maweanus, pulchellus, venustus, and others too numerous to name; Scillas of the S. campanulata type; S. bifolia alba var. grandiflora, a little gem; Muscaris, with the finest of the Grape Hyacinths-M. armeniacum -long spikes of rich dark blue. Ixia, Sparaxis in flower and coming on-bulbs everywhere showed in rich abundance, and are evidently to be the flowers of the garden.

Other plants besides bulbs abound, however, and specially may be noticed the weed of the garden—Anemone palmata alba; Lathyus Sibthorpii, with its rich purple flowers; Senecio spatulifolius, a handsome British plant; Romnea Coulterii—is this hardy near London?—Myosotis rupicola, in full sun on sand—a very pretty Belgian form of Anemone coronaria alba. On the rockwork were Gentiana verna, Lithospermum purpureo-cecruleum; Convolvulus encorum, with its silvery leaves and white flowers—alas I only half-hardy here; Ligularia Hodgsoni, a bold-leaved plant; and in full sun the beautiful Italian Campanula Allioni.

In shady peat beds with the Trilliums and peatloving Lilies, Houstonia cerulea was seeding finely, and the beautiful Claytonia virginiana was in full bloom, forming masses of white flowers.

There only remains to mention the covering of the walls, and here one is tempted to covet, but vainly, one's neighbour's climate. Mutisia decurrens is just about to open its flowers on raised sand with the roots closely clinging to the wall. Edwardsia grandiflora is laden with yellow flowers, in shape like those of the Glory Pea; Trachelospermum (Rhyncospermum) jasminoides and others, that are with us greenhouse climbers, cover every inch of house and church. The soil of the garden is brick earth on gravel, the heife addition is sand (fine Lower Greensand from Newport), in which everything grows; it has a soft earthy feel, and seems mixed with some blackish flakes. With what small trouble the materials and ordinary soil, and an adjacent sand-pit, may not a garden of surpassing interest, full of flowers from January to December, be had, and every flower in it hardy, or at least possible to cultivate with a minimum of trouble.

All thanks are due to those who, like the owner of this garden are "trying all things," and adding to our lists of possible outdoor plants. George Paul.

HARDY FLOWERING SHRUBS.

THE season at which plants flower is the best to note their merits, whilst the impressions they give are fresh in memory. As each succeeding spring comes round we cannot help noticing the comparatively little use that is made in many gardens of some of the most attractive flowering shrubs now in cultivation, and which are often either wholly absent from the shrubbery, or so meagrely represented as to have comparatively little effect. The first we may mention Forsythia suspensa, the bright yellow starry flowers of which are not uplike in appearance those of the naked flowering Jasmine-Jasminum nudiflorum, and, like it, they are produced in the greatest profusion. During the past March, wherever we met with it there was quite a glow of colour. It thrives, freely in any soil of fair quality in a fairly open situation. Of Cydonia japonica even the well known common red variety is oftenest seen in the shape of a solitary plant or two confined to a wall, whereas it is one of the most beautiful of all plants grown as a bush; the past mild winter just suited it, enabling the flowers to keep on opening for three or four months unusually fine and bright in With it should be associated the white and the flesh-coloured varieties. Then there is C. sinensis and the red-flowered P. Maulei, beautiful plants, which are not nearly so much grown as their merits entitle them to. The different kinds of Pyrus are a feature in any garden, when judiciously placed where they have fair play, and not crowded too much by stronger growing things that impoverish the soil, as well as overhapg them too much.

Pyrus malus floribunda stands unsurpassed for the beauty and profusion of its flowers, as effective in the bud state before they open as they are when fully expanded with the whip-thong-like shoots laden with delicate colour. P. sinensis and P. salicifolia are both beautiful. Of Thorns, Paul's double scarlet (Cratægus Oxyacantha coccinea plena) has been a long time in getting much known, yet every one, even where space is limited, should grow it; its colour is so vivid that it lights up everything near it, and its erect habit of growth gives it a distinct appearance from the other more drooping sorts. Deutzia gracilis is so much confined to pot culture that one might almost suppose people forget that it is equally at home in the shape of a dense, good-sized bush in the shrubbery as it is in the forcing-house in a pot. The biggest and best managed examples that are met with in pots are much interior to those out-of-doors when it has had time to get fully established. Not the least of its merits is its flowering after most shrubs are over. The length of time that it takes to get a really sterling hardy shrub to become generally known and appreciated is evidenced by one of the Viburnums, V. plicatum, which is unquestionably one of the most beautiful hardy flowering plants in existence; it has been in the country nearly forty years, yet the shrubberies wherein it is absent far outnumber those in which it is present.

The Lilacs (Syringa) are such general favourites that every one plants them, nevertheless they keep to the old kinds, most of which are inferior to the best of the newer varieties, such as the white Charles X. and the fine purple Dr. Lindley. Amongst Laburnums L. Alschingeri stands out equally conspicuously by its absence in many shrubberies, as it does for the extreme length and beauty of its yellow reaching and the common sorts are over. Of Hydrangeas H. paniculata grandiflora alike bas a claim on planters for its hardiness, profuse babit of blooming, and distinct appearance, to which may be added the not less desirable property of flowering later than most things. Where properly placed in the front of masses of dark leaved shrubs its densely packed long tapering heads of flower are seen to the best advantage.

of flower are seen to the best advantage.

Those desirous of having shrubs that flower late in the season, when almost everything in the way is over, will do well to plant the different sorts of Hibiscus syriacus (Althea frutex), amongst the single and the double varieties of which, in their various colours, are some of the most telling of bardy shrubs, flowering as they do from top to bottom when fairly treated. In Cistus the best known is C. ladaniferus, that it is not by any means so generally met with as its effective character deserves; others of the family worth a place are C. corbariensis, C. cymosus, C. laurifolius, C. salvisefolius. Amongst either large or small-growing shrubs there are few, if any, of greater merit, especially if the unsurpassed fragrance of its flowers are taken into account, than the little, dwarfgrowing Daphne encorum. Its perfume is by many preferred to that of its Chinese relative, D. iodica. The little room that it takes up is in its favour. Wherever it can be induced to thrive it deserves all the attention that can be given it, but although it grows in some places with little or no attention, be yound seeing that it is not overrun by larger and quicker-growing things, in others it does indifferently. Alany other beautiful flowering shrubs here are those that are held in comparatively little favour with many who plant shrubberies, but the above are a few that should find a place in even the most select company. T. B. [We cordially endorse our correspondent's suggestions. We have figured several of the best from turns till these plants receive the attention they merit. Ed.]

GOLD-LACED POLYANTHUSES.

THE London and Manchester shows of the National Auricula Society were remarkable this year for the excellence of the new varieties of Polyanthuses which were exhibited, and which won, in most cases, against the old stagers. It is a most encouraging fact, and shows that those who are now cultivating Polyanthuses are not content with the very few varieties which have for years been almost exclusively shown, but are raising their own, with marked success. It is a curious fact that Lord Lincoln, one of the oldest, and best of the black grounds—and now, alas! one of the scarcest—failed altogether to attract the attention of the judges in

London. This was its only appearance this year, and it is so nearly extinct that it may probably have been its last. Beauty of England, another fine variety, is now exceedingly rare, and is seldom seen. It always a nice point to distinguish between it and Pearson's Alexander, and when it was staged in the 1st prize lot at the Manchester show it attracted deserved attention. But was it Beauty, or was it Pearson's Alexander? Mr. Ben Simonite, who acted as one of the judges, argued the matter warmly. He well remembered both the old "Alexander" and the "Beauty," and he had no doubt whatever that this was Pearson's Alexander. The name was thereupon amended. During the afternoon it was interesting to note the groups which huog about this flower, showing the deep interest its reappearance excited. Your readers will recollect that I stated in your columns a few months ago, that Pearson's Alexander still existed amongst us (p. 25, Jan. 5).

Of the new varieties there have been two exhibited this year which were raised by Mr. Paul T. Barlow, of Congleton, the raiser of the fine variety, Congleton Queen. Lord Beaconsfield was shown by the Rev. F. D. Horner in London, where it won the 3d in the singles, and it was in Mr. Beswick's 2d prize lot of three at Manchester. Blackbird was also in Mr. Beswick's lot, and was exhibited by me as a seedling, and won 4th in the singles. Lord Beaconsfield and Blackbird are both of Mr. Paul Barlow's raising, and are characterised by clear delicate lacing, good colour, and fine circular eyes. The fault, if any, is that the lacing is sometimes paler than the centre. They furnish a very strong contingent to reinforce the old black-ground Folyanthuses. Of my own seedlings it is not for me to speak, but the reporters of the London and Manchester shows have spoken well of them. They have in every case held their own against the older

I think the prizes for Polyanthuses should be enlarged both in amount and in number. There are many new growers, and, as will be seen from the above, there are many new plants. The barbarous Northern custom of obliging the exhibitor to divest the plant of all trusses, save one, ought to be put a stop to. It is not insisted upon in London, and I hope it will be also omitted in the future schedules of the Northern Section. Polyanthuses should be shown naturally. They need no dressing, and a plant which can carry five trusses should count accordingly. The judges may be trusted to single out the best trusses, or the competing truss might be indicated in some way, and the judgment might be thereupon. If Polyanthus growers were encouraged, we should soon have better varieties. Win. Brockbank.

FLOWERS IN SEASON.

FROM Messrs. Rodger, McClelland & Co., of Newry, we have received specimens of the following interesting plants:—

BERBERIS HYBRIDA AUTUMNALIS.—A fine shrub, growing to a height of 4 feet, with arching shoots and broadly linear or somewhat 3-lobed leaves, and dense clusters of orange flowers. It is like B, stenophylla x, but even more free-flowering, the individual flowers being rather smaller. A valuable feature is, that it flowers freely a second time in the autumn.

GREVILLEA ACANTHIFOLIA.—A greenhouse shrub with oblong, leathery, pinnately-cut, dark green leaves; the side lobes are divided into three subdivisions, each of which is ovate and spine-pointed. The inflorescence is a dense one-sided spike, the pale rosy-lilac flowers being all turned to one side. The long projecting styles produce a singular effect.

HAKEA EPIGLOTTIS is a greenhouse shrub, with long spreading cylindrical spine-pointed leaves, like those of Picea Morinda, and with small rosy-lilac flowers in their axils.

POMADERRIS VACCINIFOLIA.—A balf-hardy small shrub, allied to the Spiraeas, with small-stalked ovate entire leaves, whitish on the under-surface, and clusters of numerous small yellowish-white flowers at the ends of the branches.

clusters of numerous small yellowish while lowers the ends of the branches,
PLAGIANTHUS DAMPIERI AND P. PULCHELLUS,
—Of these we shall bave occasion to speak at another time. The former, in particular, is desirable as a

hardy free-flowering shrub.

SENECILLIS CARPATICA.—A Composite, with large, broadly ovate glaucous leaves, and stalked clusters of yellow flower-heads. Of this we hope to give a figure

on another occasion.

THE PROPAGATOR.

THE PROPAGATION AND CULTURE OF DROSERAS. -These interesting plants are continually dying out of collections for want of a knowledge of the proper means of keeping up a succession of young plants, and yet nothing is easier than to multiply them by means of root cuttings. When potting the old plants, it is well to obtain as many of their roots as can be spared without injuring them. These roots, when they have been cut up into pieces an inch in length, should be dibbled into a store-pan, leaving an inch between each piece all over the pan. The holes thus made should be filled up with a little dry sand. After watering them they must be placed upon a platform or moist shelf, and great care exercised to prevent them becoming dry. As soon as the shoots of the root-cuttings are an eighth or a quarter of an inch in height they should be cut off, with a sharp knife, together with a small portion of the old root. These cuttings should be potted into small thumbs, and placed in little pans on a moist shelf or platform. They must not however, be allowed to become dry. The pans containing the old roots should be replaced in their old position, for they will continue to produce young plants for about two years. The soil best adapted to the nature of the Drosera is composed of one half spongy peat, broken up into pieces about the size of walnuts, one fourth of finely chopped sphagnum moss, and one fourth of To every bushel of this soil should be river sand. added a 48-potful of charcoal, broken up ioto pieces of hazel-nut size, and a 48-potful of yellow loam, and the whole well mixed together.

DROSERAS FROM CUTTINGS.—Some of the plants intended for cutting purposes require some previous preparation, such as those the stems of which have grown long. These should be covered up to the crown with a little chopped moss and some sand, in order to encourage them to root. When they have rooted the tops of the plants can be taken off for cuttings, the ends of which should be placed in some dry sand; indeed, it is well to sprinkle a little sand on the cut on the old plant. Each leaf of the tall varieties should be supported by a small stick, but the crowns of all the cuttings should be firmly secured by means of pegs. They should now be placed in small pans of water upon a shelf or platform. The old plants will for years form stock plants, and as fast as they break into growth the growth should be taken off as cuttings, and treated in the manner stated above.

DROSERAS FROM SEED .- It is a good plan to fertilise the Drosera flowers day by day to obtain a supply of good seed. Store pans should be filled with the soil mentioned above, which should be raised in the centre so as to slope down towards the edge of the pan, and well watered to settle the soil. ripe seed should be gently sprinkled upon the surface, and great care must be taken when watering the pans to see that the seed is not floated or washed away. The seed-pans should now be placed on a damp shelf or platform, and be kept damp. When the seeds germinate the seedlings that are visible should be pricked off and potted into small thumbs. In order to prevent the seedlings becoming dry, and to make it more easy to move them from place to place, it is advisable to place six or eight of the pots into a 48-sized pan, the interstices to be filled with sand and a little chopped moss. The seedlings can he potted into larger pots as they grow in size and strength.

CULTURE.—There are many features in the culture of the Drosera to which special attention should be directed. They are best cultivated on a raised platform near to the glass in an intermediate-house of sunny aspect. They thrive best when grown apart from other plants, and we have more than once called attention to the necessity of keeping them in a damp state. To effect this end they should be placed in small pans filled with water, at least during the growing season. They must not on any account be watered overhead, and this may be prevented by keeping a large pan filled with water, and large enough to dip them in. It is advisable to dip the plants in the water, because, owing to the peculiar nature of the soil, it does not soak through when watered in the ordinary way, and we should mention that rain-

water should always be used. Droseras are often spoifed by being confined to a close case, and placed in the shade. They thrive best in the warm rays of the sun, therefore they should be placed as near the glass as possible. It should be understood that the Droseras require keeping moist all the year round, even although the foliage dies down for some weeks.

The flowers of these interesting plants are generally large, and mostly of a pink or white colour, and the prettiness of the latter is combined with a fragrant odour. The following are the most easily grown species:—Prosera dichotoma, D. rubra, D. capensis, D. spathulata, and D. rotundifolia. T. O. [A page illustration of various species was given at p. 104, vol. iv., 1875, ED.]

THE GROSVENOR GALLERY.

THERE are fewer pictures of botanical and borticultural interest in the Grosvenor Gallery this year than usual. The same dearth holds good with the exhibition at the Royal Academy. We need hardly say however that there are some remarkable and admirable pictures in both collections.

Amongst the first pictures in the Grosvenor will be noticed three excellent portraits by L. Alma Tadema, and a large boldly treated landscape by R. Barrett Browning; these we pass, and notice in No. 21 a bold and dashing picture of " Scarlet Garden Poppies," by M. J. Muckley, painted with all the vigour and skill peculiar to this accomplished flower painter; No. 25, "May," a picture of red and white Hawthorn blossom, by the same artist, we think is somewhat less successful. The pictures of "The Bath," 28, J. R. Weguelin, and 38, "Aphrodite," by Philip 11. Calderon, R.A., are meritorious studies of the figure, but we do not like the unpatural blue colour and decorative treatment of the sea in the last. No. 40, "Leaves have their time to fall," David Murray, A.R.S.A., is a good representation of Birch trees, and probably painted direct from Nature, as the fungi amongst the dead leaves, Agaricus muscarius, are more common amongst Birch leaves than elsewhere in our woodlands. 45, Ten Virgins," J. M. Strudwick, is a figure subject that we do not like; it is obviously based on the mannerisms, without the knowledge and power, of E. Burne Jones. 60, "Meadows by the Avon," Alfred Parsons, is one of the best landscapes we have seen from the brush of this skilled, dashing, and facile landscape artist; this picture is especially true to Nature, and the perspective (well marked in the position of the advanciog figures) perfectly correct. 63 and 75 (the numbers were transposed on the pictures on the Press day), "Peaches and Blackberries" and "Haws," W. Hughes, are two carefully painted decorative pictures that we think are open to improvement in drawing: when a picture is de-corative in character it is not necessary to make any part contrary to Nature.

The picture of "King Cophetua and the Beggar Maid," by E. Burne Jones (60), is a large attraction by E. Burne Jones (69), is a large attractive containing life-size figures. This is perhaps work, containing life-size figures. This is perhaps the most important picture Mr. E. Burne Jones has ; it represents a king in armour on the lower steps of a throne, upon the upper part of which is sttting "the Beggar Maid." The picture is carefully and skilfully drawn, and is full of curious and well painted details. Opinions will vary as to the value of the work, but there can be no doubt of its general excellence. Like all works from the brush of E. Burne Jones, the subject is treated in a somewhat conventional and decorative manner. 104, "A Wood Nymph," E. Burne Jones, is even more decorative in its treatment than the last; no one can deny the beauty of the drawing and painting, but one can hardly imagine a Dryad to be so solid and melancholy-fooking - the face would answer for that of Atropos. Near this picture is a magnificent work by J. E. Millais, R.A., portrait of the Maquis of Lorne.

There are several most beautiful landscapes, as 187, "The Thames below Runnymede," and 201, "A Bed of Water Lilies," by Keeley Halswelle, A.R.S.A. In 222 Mrs. John Coffier has painted a skilfully drawn study of nude figures, comparable with 28 and 38. At 206 and 211 are two of the curious pictures for which the Grosvenor Gallery is famous; the first is termed "The Bridge of Life," by Watter Crane; the other, "Patience on a Monument Smiling at Grief," by R. Spenser Stanhope. Both display considerable

skill in composition and drawing, but both are marred by curious conventionalities.

In 265 W. Holman Hunt contributes an indifferent pottrait of Dante Gabriel Rossetti; the picture is of interest as showing the features of Rossetti and the style of portraiture belonging to Mr. W. H. Hunt. There are but few flower pictures worthy of special note in this year's "Grosvenor"; some are astounding for their badness. In 290 Mr. M. D. Mitchell exhibits a picture named "Dahlias," dull and lustreless; in 292 J. M. Jophing sends "York and Lancaster Rosses," with petals solid and thick, and, as we think, unnatural. 298, "Sweet Peas," as well as 376 and 377, "Clifton Lin," appear to be the juvenile productions of a very raw begioner. 305, "June Rosses," Mrs. R. E. Welby, is a good picture; and 322, "Rosses," Miss Maude Naffel, is an admirable work, in strong contrast with several very feeble attempts in the same room; the drawing is very accurate, and the painting of the leaves—in one place with the light shining through them—is very redictable, 372, "Chrysanthemums," Miss E. F. Jackson, is a well executed picture, as is 374, "Almond Blossoms," by Mrs. Cecil Lawson; the blossoms are considerably larger than Nature, and the attempt at the colour of Almond Blossom is a failure.

LAMBTON CASTLE.

A CONSIDERABLE addition has been made in the fruit department under glass at Lambton, in the shape of a lean-to orchard-house against the long wall supporting the terrace flower garden that fronts the range of large vineries, &c., and separating it from the fruit garden. This orchard-house, which has been built two years, is unheated, and is 325 feet long and 16 feet wide. It is in two equal divisions, separated by a small span-roofed structure in the centre, standing at right angles to the range and projecting somewhat, and which is kept gay with flowering and other plants, and contains a considerable number of Roses. The western division is principally occupied by Pears, some in pots and some planted out along the front and trained to wires stretched lengthways of the house, at a sufficient distance from the glass, alternate tree is confined to three shoots, the intervening ones having two each. A shoot is taken up immediately under each of the roof bars, which are 14 inches apart. These trees are ultimately intended to partially cover the roof; the selection, both of permanent trees, as well as those in pots, comprises all the well proved kinds. All have made good progress, and have set such quantities of fruit in most cases as to require much thinning. The size the fruit reaches under this system of cultivation may be judged from the weight which many of the leading sorts reached fast year, though the trees had only been one year in the house:—Pitmaston Duchess, 20 oz.; Souvenir du Congrès, 20 oz.; General Todtleben, 19 oz.; Williams' Bon Chrétien, 16 oz.; Brockworth Park, 18 oz.

A row of trees in 14 and 16-inch pots, consisting of Apples, Plums, and Cherries, runs the entire length on the side of the walk furthest from the back wall; these also have set a profusion of fruit. The back wall is planted with Plums, which are making satisfactory headway. Some of the Pears are on Quince stocks, others on the Pear. The corresponding half of the range is similarly filled with Apples, Pears, and Plums, with Peaches on the back walf. They are all in good condition, and many of the trees have set ten times the quantity of fruit they will he able to carry. The permanent trees planted in front will only be allowed to cover about three-fifths of the lower part of the roof, so as to give the Peaches and Plums on the back wall a chance. A shelf runs over the path the whole length, that holds about 500 Strawberries in pots. There is a narrow border running between the path and the back wall, planted with Carnations and other flowering plants that will have a chance of thriving until the trees get larger.

The construction of this long range deserves a word of notice. It is plain, but well and substantially built; the glass is wide, the bars, as already intimated, being some 14 inches apart, admitting a maximum of light; to every three ordinary bars a rafter is introduced, each of which is trussed, thus giving strength to the roof. The path is composed of cast iron grating in pieces not too large to be easily moved, and has the merit of being clean, all but imperishable, and has a nice appearance. The roof ventilation in each of the divisions, 162½ feet long, consists of a 2 feet wide continuous light, hinged at the top; it is in two pieces,

divided in the middle where the opening gear is placed. The opening and closing is effected by a flat iron sliding bar running the whole length under each light; to this are fixed at intervals stout iron rods attached to the bottom of the hinged lights. sliding movement of the bar is effected by a chain and wheeled screw, worked right or left, according as the light is to be opened or shut; the movement is quick, and so easy that a child could do it. The advantage this sliding arrangement has over the old revolving bar worked by leverage is, that the whole of the strain present with the various applications of the old method is got rid of, admitting of almost any possible length of light being raised at once. The front lights in the range are 21 feet deep, and are furnished with sliding bars similar to the top. In these houses Mr. Hunter has secured the same provision that has been the sheet-anchor of his success in fruit culture, Grapes especially-an unlimited supply of water, so laid on that it can be used with a minimum amount of labour. An inch pipe, with taps at short intervals, to which can be attached a hose-pipe, runs the whole length of

VINES .- The Vines in the principal range, which have produced such quantities of large bunches within the fast ten or a dozen years, have this winter had their inside roots lifted, and new borders made for them; they have been planted fourteen years, and as those who have followed the details that have appeared in the Gardeners' Chronicle of the treatment to which they have been subject are doubtless aware, for several years after they came into bearing a considerable portion of the extremities of their roots in the inside borders were annually shaken out and put in new soil -treatment which the size of the bunches and the collective weight of the crops they bore gave evidence of having agreed with them. But as they went on and filled the borders, 12 feet in width, this annual part renewal had to be given up. Conscious of the benefits of fresh soil Mr. Hunter has now renewed these borders. It may here be well to state that part of the outside border to these houses is the same size as the inside, the remainder a little narrower. The Vines are planted near the front wall, which was built so as to give the roots free egress to the outside border, and there is about balf the quantity in it that there is inside, where, when lifted, they were found as close as they could run in every direction. They have not been shortened, as is sometimes done when borders are renewed, but left entire.

In the first house at the eastern end of the range there is a mixed lot, consisting principally of Gros Colmar, Alicante, Lady Downe's, Barbarossa, and Raisin de Calabre; when I saw them at the latter end of April they were showing a grand crop, many of the bunches with enough in them to reach from 6 to 10 pounds. In the Muscat-house adjoining only half the border bas been made, the other part is to be done next winter; the show of fruit in this house is equally promising in every way. In the corresponding house to this, in the opposite half of the range, wherein is the Black Hamburgh Vine that bore the monster bunches, all the inside border has been remade, and, as in the others, without any sign of the Vine having suffered any check, the wood, foliage, and bunches being unexceptionable. The Vines in the other ranges are bearing heavy and promising crops. All are now grown on the long-shoot system, more or less according as the distance the rods are apart will permit of. In the houses in the upper ranges, where they are nearer together, as a matter of course, there is not room to run them so long as in the lower, where they are further apart.

PINES.—Of these Mr. Hunter has still a number of seedlings in the course of being proved; they are a fine lot of strong, stout-leaved plants, likely to carry big fruit. They are mostly the result of crosses, in which the Queen has been one of the parents, smooth Cayennes, and one or two of Mr. Hunter's seedlings being the others.

THE CONSERVATORY at Lambton is always unique in appearance from what one is accustomed to see. There are comparatively few climbers used, the space overhead being occupied by the immense examples of basket plants, and others still larger, mounted overhead on the strong iron arches that span the paths in many places. On these many thiogs are used that one would never expect to see in such positions, but which are nevertheless very effective; for instance, on the top of one of the four arches standing at the four

points of the compass over the path surrounding the nearly circular centre bed, in the cool division, was a Pimelea spectabilis, some 7 feet across, its branches hanging down so as to all but cover the pot. On the opposite side to this is a large and handsomely flowered specimen of Darwinia tulipifera, with a couple of dense bushy Azaleas occupying the corresponding two arches. The pots of these and other plants similarly used are plunged in wire baskets made to fit, and clothed with Selaginellas, Ivy-leaved Pelargoniums, smooth-leaved Begonias, Ferns, Ficus repens, and other things of a like description. The four plants above-named stand on the crown of the arches, with a smaller example of something of a drooping habit right and left of each on the spring of the arches.

In the central bed the plants are stood low and close, so as to cover the surface in a way that scarcely a pot is seen; they are relieved by taller examples standing well out of the carpet of verdure. On the opposite side of the path a similar arrangement exists, plenty of colour being secured by the presence of Azaleas, Roses, Deutzias, Cinerarias, Hoteias, Hyacinths, zonal Pelargoniums, Hydrangea Thomas Hogg, and the common variety; the former sort was very effective in the shape of tall, loose pyramids covered with flowers. The roof is thinly draped with the shoots of one or two climbers, that do not perceptibly lessen the light to the plants beneath. house is glazed low down all round, and is away from the influence of anything to interfere with the light. In the central division of the house the plants are disposed somewhat similarly, the arrangement being varied from time to time. The centre is occupied by a fine spreading Palm, with smaller plants round. All round next the outer wall runs a wide stone stage, which is now planted closely with Eucharis amazonica, the large deep green leaves of the plants showing that they like their situation; amongst these are placed a few tall coloured-leaved Dracænas, with their pots hidden by the leaves of the Eucharis. Fronting this is a mixed assortment of plants effectively placed. Spreading Ferns, such as Davallia Mooreana, and immense examples of the best Adiantums, are here arranged overhead; along with them were a couple of plants of Cypripedium insigne, nearly a yard in diameter; in this light position they thrive well, many of the scapes bearing two flowers each. A remarkable example of Platycerium alcicorne, in beautiful condition, not less than 6 feet across, is here suspended, and is one of the most telling plants in the place.

In the third division, on a much lower level than those noted, are two fine plants of Dicksonia antarctica with trunks 10 to 12 feet in height, and a Cyathea medullaris. They were originally planted out, but as usual with such plants when they have unlimited root-room, they threatened to outgrow the space at command. They have been taken up and put in tubs only some 25 inches in diameter, in which they are doing well, showing how little the plants resent all but disrooting. A few very large specimens are here mounted up overhead, including Latania borbonica, 14 feet across; and a pair of Kentias somewhat smaller, also a pair of Imantophyllums in 18-inch pots. The bright, healthy condition of the foliage in this, as in the other divisions of the house, shows how the plants enjoy the hose-pipe being freely used on them. T. B.

Foreign Correspondence.

GARDENING NOTES FROM A LIME SOIL ON THE GENOSSE RIVIERA.—On the Genoese Riviera winter and spring have passed away, and summer has arrived (May 5), as evidenced by the general blooming of Roses, as in England early in July. A retrospective glance on our horticultural history—or, at least, on some features of it—during the winter months may present interest as bearing on climate and soil.

The former is characterised in winter by long nights, with a rather low temperature, averaging from 40° to 45°, and by short days with a shade temperature averaging between 50° and 55°. The sky, however, five days out of six is clear, and the sun brilliant, consequently there is mostly during the day intense light and ardent sun-heat. The soil in the Mentone district is generally a limestone soil, formed by the break-up of secondary oolitic limestone, with very little vegetable humus. As a necessary result, unless

a soil is artificially made or provided, it is only the plants that grow naturally in a lime soil that do well; all others merely vegetate or die. On the other hand, the fact that a plant thrives and flourishes here is a proof that it is a lime-plant, and that it would probably thrive best elsewhere in a lime soil, natural or artificial.

Ivy .- There are several varieties of Ivy in the district, growing freely in the ravines and gullies, but none equal a large-leaved one which I brought from Algiers ten years ago. There I found it absolutely courting sunshine, growing in a blaze of light and sunshine with exuberant vitality. It nearly chokes the valley of the Chiffu, or Monkey Valley. The plant I brought home has propagated as freely as the common sorts, and one has nearly covered the side of a tower, 65 feet high, within ten years, upon the mortar and lime of which it no doubt partly exists. On a wall against which a number of nursery plants were growing there is a shoot, healthy and vigorous, which has been living in the full blaze of the southern sun for five years without roots. It remained attached to the wall when the parent plant was cut away, fully exposed to the south. I remember on one occasion, in Surrey, planting sixty Ivies against a wire fence, in a sandy soil devoid of lime. died but one, and on examining that one I found that some of its lower branchlets had attached themselves to an adjoining brick wall. Thus does the Ivy justify its claim to being a lime plant.

Cypripedium insigne .- Three winters ago I read somewhere that the Cypripedium insigne liked a lime soil; so I brought with me a patch as large as my hand, which was planted in a rockery without any particular care. It did very well, flowered freely all winter, and increased much in size; indeed, in two years, by division, we have got seventeen good plants, which have all done well this winter in the open air, in rockeries, in the lime soil of the country, without any particular care. They have been mostly in the shade, but some were planted in full sunshine. all remained in the ground last summer, taking their chance throughout the heat and drought, and we did not lose one. It is a great acquisition to my garden; and thus is verified the statement that this Orchid likes a lime soil. I presume it is a terrestrial Orchid in Nepaul, its Asiatic home.

Bougainvilleas. - I also brought from Algiers, ten years ago, a light crimson Bougainvillea, which they called Warscewiczii, saying that it came from Brazil. It has done very well with me. It has, indeed, become common all over this coast, as also in many localities, such as Malta, on the shores of the Mediter-It is infinitely more beautiful than the B. spectabilis which is grown and exhibited in England. Mr. Harry Veitch, who was here three years ago, told me that it was rare in the trade, but as I gave him a number of cuttings I should think that by this time he must be ready to supply it. I find no great difficulty in propagating it here from cuttings. It grows with extreme luxuriance provided it is well watered, and covers my walls and sheds with masses of its crimson-bract-flowered branches from Christmas to May. The date of flowering depends on the amount of sunshine it receives. I remember reading that in the Brazils they cover the roofs of the houses with this plant, and that it flowers gloriously, even when the roofs are of zinc. Following out this idea, I trained it over a tile-roof shed with complete success. To succeed so thoroughly in this district the Bougainvillea must be a lime-loving plant. The new wood is matured during the hot dry summer, but it flowers in cool sunny weather.

Linum trigynum. - This plant is one of my greatest triumphs. It grows luxuriantly in large bushes, many teet in diameter, and produces myriads of handsome yellow flowers nearly all the winter, from December to May. It requires little or no care, no watering in summer, and very little, if any, attention to soil or manure. I have bushes growing in heaps of stone and calcareous earth, in a deserted quarry, and flowering as freely as in the garden beds. It is quite a sight to behold; the large shrub is all but concealed by the handsome blossoms ever succeeding one another. I often wish I could show one at Kensington; I am sure I should get a prize. Singularly enough, my neighbour, Mr. Hanbury, cannot grow them at La Mortola as I do, although our vegetation is mostly the same. His soil, however, is not so decidedly calcareous as mine. This Linum must be a lime plant, as is the red Valerian which grows out of the crevices of our rocks, just as it does along the line

of railway in the chalk cuttings in Kept. Johnson gives its habitat as the East Indies; here it is supposed to come from Japan.

Aubrietia. - The Aubrietia's natural habitat is Greece and the Levant; so, as might be supposed, it does splendidly with me, although but little, if at all, cultivated on the coast. I brought a patch over, a few years ago, from my English garden, and have been surprised to see how vigorously it grows and flowers. It forms large trailing masses, and early in January is covered with a sheet of blue flowers which excite general admiration. It seeds freely, and the seeds sow themselves all round the spot where it grows. In summer it fades away and withers, like grass, to spring into vigorous life with the first rain. It is clearly accustomed to the climate and treatment it meets with in my garden-to be roasted and dried up in summer-and does not suffer therefrom, probably the reverse. I get different shades of blue on different plants from the same seed and under the same treatment, so that these different shades can scarcely be considered garden varieties, and depend probably on different degrees of sunshine.

Teucrium orientale.—This Germander is perhaps the most remarkable plant I have. It grows to be a large bush 6 or 8 feet high, many feet across, a mass of branches and blue flowers, anywhere, amongst stones, on the rocks, without being watered or manured, and attracts attention more by its vigour and health than by its beauty, for its leaves are small, of a whitish green, and its blue flowers insignificant, although numerous. It is most useful for filling up sunburnt corrers, and getting masses of foliage where scarcely anything else but Agaves and Cactures in general, or Aleppo Pines, would grow. I must make an exception, however, in favour of the—

Eriocephalus africanus, which shares with the Teucrium the power of growing and flourishing among the rocks, in the driest, most sunburnt, and most sterile regions. It flowers very freely in midwinter, producing sheets of small white flowers, the seeds of which are coveloped in wool, which justifies its name. It comes from the Cape of Good Hope, and the Teucrium from the Levant, both climates assimilating to that of the Genoese Riviera, mild in winter, dry and hot in summer—thence, no doubt, its great vigour and luxuriance with us. No doubt also it grows in a purely lime soil on calcareous rocks, or it never would thrive as it does here on our limestone rocks, and amongst the debris of a deserted quarry.

Bulbs .- The Narcissus does perfectly well in the lime soil, growing with great profusion, and reproducing itself in some of the Olive groves. Those that I import from Holland, if left in the ground, do not die, but form new bulbs, and after two or three years throw up spikes as fine as the first. I may say the same of Hyacinths if left in the ground undisturbed. This is explained by the fact that they are natives of the south of Europe, although it is rather remarkable, as in Holland they are grown in very different conditions. They are planted in very highly manured sandy soil, only a foot or two above water, that is, above the water level beneath the soil, as I was told at Haarlem last summer. There the bulbs are always taken up in spring and stowed away during the summer, so they really get the absolute rest which heat gives them in their native climate. Tulips, Crocuses, and Snowdrops flower once and then seem to die off. Evidently the limestone soil does not suit them; some Snowdrops planted in chestnut earth and sand went on flowering for several years in February, as at home, but they have gradually died out.

Amaryllizes do not flower with me in winter out-of-doors, not until advanced spring. They come from the Cape of Good Hope, but probably they flower there some time after the summer beat has commenced. With a little artificial beat, however, from some experiments I have made, I believe I shall easily get them to flower io mid-winter. The Maschevallis awaveolens, the Trachelospermum jasmiooides, the Gardenia, the Begonia jasmiooides, all do admirably out-of-doors, flourishing throughout the winter, but they do not flower until the end of May, when we are all gone. They clearly want a little heat to expedite their movements, which I am seriously thinking of giving them. They are all so lovely it is a pity to see the buds every year, and not the flowers. The Gardenia requires a light soil, the other three can do with the lime soil of the district, well manured. With this exception, all the plants I have named are a complete success here in the lime

soil. They are clearly suited to such a soil, require heat and rest in summer, and will flower with a cool temperature in winter. The charm of a winter garden in the South is, that when winter is over, and we get back to England, we begin again, as it were, and go over the same charming horticultural scenes, but under different auspices, agaio. Henry Bennet, M.D., Torre di Grimaldi, Mentone.

(To be continued.)

LATE TULIPS.

THERE are some localities where these very heautiful flowers are largely grown in cottage gardens, and delightful is it to drive through lanes skirted with pretty cottages in the gardens of which many thowers bloom richly and abundantly. The other day Mr. Ware, of Tottenham, exhibited blooms of many choice kinds in large numbers, thus showing that though as a florist's flower the Tulip has here in the South fallen into decadence, yet that as a decorative flower it is highly prized. What can be more beautiful than a mass of the superbly coloured Tulipa Gesneriana?-or what more interesting to the lover of pure refinement in flowers than a choice named sorts in which may be found all these peculiar attributes of form and markings, of which modern gardeners know so little? It may be true that the Tulip is becoming a fashionable decorative flower, but flowers that are contingent upon fashion for popularity may have but a fleeting existence. It is far better to learn that myriads of late Tulips are being grown in our country gardens for the delectation of those owning them, than it is to hear that myriads of flowers are being sent into the London market to flicker and then die. Not least valuable in these Tulips is the feature that the bulbs are so hardy, and in some old gardens they remain in the soil for years. That may not be the best form of cultivation, but it is undoubted evidence of robustness. For general uses we are not sure whether the rich coloured self forms are not better than are the most beautiful of flakes and bizarres. Still a few of these are acceptable, but variety in colour as well as in names is desirable. Happily, these good hardy Tulips may be purchased cheaply, and thus become everybody's flower.

NEW INVENTIONS.

A NEW METHOD OF GLAZING,-At the recent Building Trades Exhibition were to be seen examples of a new method of fixing the glass in the roofs of horticultural buildings intended for plant-growing purposes. Many ways of doing this have been tried but this may be accepted as the latest outcome of this almost universal desire to have an easily repaired, watertight roof, with the least use made of putty; and it seems to fulfil all reasonable conditions in this respect. The roofing bars (fig. 128) are made without any rabbet, but have a cap of wood, or zinc, covering the bar, and projected on each side about half an inch. The putty is placed under this cap, and the sheet of glass being then pushed up quite close, is kept in position with four cork cams-ordinary winebottle corks cut into discs of quarter inch in thickness will answer the purpose (see fig. 129), taking care, when nailing them to the bar with a small wire nail, that they are not pierced through their centre, but at some point a slight distance from it. By turning these round the necessary pressure is obtained to keep the glass close up to the putty strips. When the putty hardens the glass will adhere to it, and these pieces of cork can then be removed; but as they are not conspicuous, it would be quite as well to leave them. Perhaps some portion of the putty would ooze out under the pressure, and which it would be necessary to cut off, but this in glazing a house could be done from the inside as the work went on. The whole of the work of glazing can be, and is better done from the inside, and it does not seem essential to good work to perform it only in dry weather, as no water can affect the putty under the sheltering cap; it would only be necessary to keep the glass in a dry state. With the zinc capping both putty and wooden bar are sheltered from the weather, and in that way they must materially help to keep the house from decay for a longer period than is the case with merely painted woodwork. The sash or roof bars may be of iron, and may be fitted with a cap of copper or of zinc, and putty may be used as before or dispensed with, and the glass be kept in position by metallic cams instead of cork. Under the glass, metal guttering (zinc or copper) is fixed to the bars, in short overlapping lengths, for the purpose of catching any drip that may occur from rain being driven under the capping by the wind. For plant-houses that are not orchard-houses putty would be found the hetter means

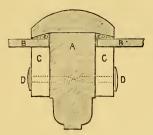


FIG. 128.-THE "DENNIS" SYSTEM OF GLAZING.

of fixing the glass, and then the narrow guttering would not be required. These methods, with various adaptations, were shown, fitting them for a great variety of uses besides garden structures. We do not think the system could be applied without some modifications to sliding sashes or movable ventilating lights, nor indeed to any part of a glass-house where the glass would be affected by slamming or jarring in the act of opening or shutting, as the panes must become loosened thereby. Mr. T. H. P. Dennis,

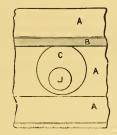


FIG. 129.-THE "DENNIS" SYSTEM OF GLAZING.

horticultural builder, of Chelmsford and Mansion House Buildings, is the pateotee and manufacturer.

THE "DENNIS" PATENT HOLDFAST LOCK FUR-NITURE.—The defects of the ordinary method of attaching door-handles by means of set screws dropped into holes drilled in the sides of the spindles which turn the latches, are too well known to every householder to need mention here as an excuse for directing the attention of our readers to another of Mr.

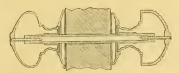


Fig. 130.—THE "DENNIS" PATENT HOLDFAST LOCK FURNITURE.

T. H. P. Dennis' inventions, which is one, we think, that will be welcomed by many more than can afford to indulge in his patent system of glazing. As will be seen by our illustration (fig. 130), instead of the side screw arrangement, Mr. Dennis adopts a longitudinal screw which passes through the middle of the knob into the spindle, which is tapped with a screw thread at each end. The knobs are also tapped in the centre of their outer end with the same screw thread as the spindle. The spindle is inserted in the

lock, and when the handle with the screw loose in it is adjusted the screw is turned down until the head is exactly on a level with it, and all is quite secure. It is a clever and valuable invention, which we shall certainly adopt ourselves, and the sooner the article comes into the market the better we shall be pleased.

The Henbageous Bonden.

WHAT IS THE DOUBLE NARCISSUS POETICUS? -Mr. Peter Barr lately asked me, Of what is the double N. poeticus the double? I replied that it is the double of the single N. poeticus, now in flower in nearly every garden, which he calls in his catalogue N. p. var. recurvus. Mr. Barr says, that whatever it is, it certainly is not this. Now N. poeticus changes from single to double, in gardens at least, as often as N. Pseudo-Narcissus and N. incomparabilis, so there are many who can tell us, if they will, whether it is the common form or not which undergoes this change. All I can say is, that both single and double N. poeticus abound in my garden; whether they pass from one to the other I am not certain, but I have carefully compared the growth of both, and assert that there are no significant or characteristic differences between the two. The leaves of the single form are a little weaker, and have a greater tendency to bend over from the middle, but leaves are a very fallacious criterion of variety in Daffodils. The most obvious difference to the inexperienced is in the length of the tube, which on the single form is cylindrical, and 14 inch long, exclusive of the capsule or seed-pod; but in the double is funnel-shaped, and often not more than half an inch long, but Mr. Barr must know very well, though all growers of Daffodils may not have observed it, that as a Daffodil begins to double the seed-pod begins to disappear, and the tube to shorten; and the more complete the doubling, the more complete is the suppression of the seed-pod, and the shorter the tube, compared with that of the normal form. In the varieties of N Pseudo-Narcissus in which the tube is always short, this difference is less conspicuous, but in many of the double forms of N. in-comparabilis there seems to be often no tube at all, the pedicel tapering up from the hase of the spathe to the base of the petals. In the double of the small Jonquil (N. jonquilla), the entire suppression of the normally long tube is very remarkable. I send one or two of these, also specimens of single, semi-double and double N. poeticus (var. recurvus) in illustration of what I have written. C. Wolley Dod, Edge Hall, Malpas, May 19.

[With this communication our correspondent obligingly sends illustrative specimens. To make the condition of things clearer we may remind the reader that the flower-tube, or "thalamus," is that portion between the perianth segment and the ovary. It bears the stamens at various heights within, according to the species, and from its upper edge proceed the flower-segments, the inner ones with their "corona" or outgrowth. Its lower portion encloses the ovary, which, indeed, is confluent with it. The thalamus, or flower-tube, is, in reality, nothing but the end of the flower-stalk, altered in character as above described. In the completely double flowers sent by our correspondent the thalamus is solid, not tubular -in other words, it retains its stalk-like character; the ovary is wanting, the perianth segments are increased in number, and the stamens are more or less petaloid in character. Hence, increased development of the outermost parts of the flower, and perverted development of the stamens, are counterbalanced by an arrest of development of the ovary-an illustration of what morphologists call organic compensation. Of course, we are now referring solely to Mr. Dod's specimens. In the big double flowers of the Telamonius section the ovary and ovules are not arrested in their development, and further, according to Mr. Brockbank, they ripen into seed-pod and seeds, as might be expected to happen, but which, so far, has been rarely observed, and never by ourselves, though it should be said we have never specially looked for them, ED.1

HERBACEOUS PLANTS AND OTHER PERENNIALS.

These, like all other trees and plants, were kept back by the weather, but have since come on with a rush, and many are now flowering, although sadly needing rain, or a more genial almosphere, which

with hot sun and the wind chiefly in the east, has been very arid for some time past, and even by night we get little dew. The subjects that seem to feel this state of things most are the double Pyrethrums, which look very distressed, if not kept watered, flagging down in their foliage and flower-stems as if they were dying, but with a good soaking they quickly revive, and right well do they pay for the labour, as with liquid manure applied the blooms come remarkably fine and make a grand display in the border. In cases where they are wanted for cutting for exhibition, or other special purposes, the best way is to grow the plants in rows or beds, so that they can be mulched, which is a great help in keeping them uniformly moist at the roots and maintaining them in a strong healthy condition. The same remarks apply to the lovely Spiræa palmata, which cannot endure drought, and should therefore be planted low, or have a ridge of soil drawn up round each, and manure spread within the enclosed space, as then what water is given the plants get and receive full benefit from it long after. The finest specimens I have seen are growing on wet half shady places, where they come on late and last a long time in perfection.

Hemerocallis flava is one of the most valuable of all herbaccous plants, as even thus early some of its beautiful rich yellow Lily-like blooms are open, and others will follow on for weeks yet to come. We have been using it for forcing, and a splendid thing it is for the purpose, as it responds readily to heat, and affords a colour that is scarce at all seasons. The way we manage is simply to dig clumps up, and, if too large, divide them to suit the pots, which check seems to do them no harm, as they flower almost as strong and well as others left undisturbed.

Another gem, though not strictly a berbaceous subject, is Daphne encorum, which does well in our light sandy soil, as we have several clumps ranging from a feet to a yard across, and a mass of blossom, which is so sweet as to scent the air for some way around. For banks, rockwork, or other clevated positions this Daphne is quite unsurpassed, and should be in every garden, where, in planting, it deserves a conspicuous place. Those who have failed with it will find the turfy parings of walks and road grit suit it, and by landing up among the branches layers root freely, and in that way stock may be increased to any extent. Lithospermum prostratum forms a splendid companion plant to the one last named, and requires the same kind of soil and situations, or sharp sandy peat, when it spreads and roots in a similar manner, and rivals the Gentian in the greath depth of blue of its flowers, which, though small, are exceedingly numerous.

Even more conspicuous are the Gentiana acaulis and Iberis gibraltarica, which form the finest of all spring beds, and though so strong in contrast, associate well and are very pleasing together. Anemone coronaria are all past shedding their petals and going to seed, but as they are so frost-proof and so early, they deserve a long rest, which they will soon take for themselves, and make their appearance again ere winter sets in. The most useful things now for cutting are the double white Narcissus, pure and sweet as a Gardeoia and quite as nice looking. Fity the plants will not force better, as in winter or spring such blooms would be of double value to what they are now. It is florentian rand germanica will soon be all aglow, and grand masses of them are when the collection is large, as they are gogeously beautiful, being nearly equal to Orchids in form, and of all shades of colour. Eich soil and a moist suny situation are the conditions for them, and when so favoured they are sure to do well. Paconies, both herbaccous and tree, have felt the effects of the sun; and are fast expanding their big flowers, which will be ablaze shortly and command admiration.

and are last expanding their log libers, which win be ablaze shortly and command admiration. Aquilegias, too, are popping open, and fine border plants they are, especially A. chrysaniha and A. cerculea, the best and most distinct of them all. Anchusa italica and A. capensis are also charming just now, the latter being one of the most desirable plants any one can have in a border, as the numerous blossoms are of the richest of blues. Sweet Scabious that have stood out all the winter are now blooming, and are big bushes that will soon make a fine show. Solomon's Seal, and its congener, Lity of the Valley, are likewise displaying their bells and delicate greenery together. J. S.

TILLANDSIA STREPTOPHYLLA. — A remarkable Bromeliad, native of Mexico and Honduras, with united strap-shaped leaves, twisted like a cork-screw, and beset with silvery scales. Bracts elongate, pink; flowers violet, in dense spikes. Figured in the Botanical Magazine, t. 6757 (May, 1884).

Orchid Notes and Cleanings.

NOTES FROM SUMMERVILLE, LIMERICK .- Aërides crispum var., the plant of which I send you a photograph, was grown at the coolest end of the East Indian-house, which, I believe, is the most suitable place for it, although it will do in the Cattleya-house in a manner no one need be ashamed of. The foliage and general appearance of the plants, however, show that they prefer the warmest house, being stronger and deeper in colour; in either case I have kept them near the glass, and moderately shaded, watering freely while growing, and less so during their season of rest, or rather, period of inactive growth, for it never seems to be thoroughly at rest. It must be occasionally sponged to remove dirt and scale, it being rather subject to a small white form of this pest, which clings most tenaciously to the leaves. The plant referred to is carrying seven spikes, one of them having 116 flowers on it, and two others, each with but a few flowers sbort of that number, the remaining four spikes varying from fifty to twenty flowers each. From the top of the pot to the top of the plant is 4 feet 9 inches, and it has three principal growths; each, however, is from the one stem.

Of Acrides Fieldingi we have a good variety,

carrying a spike of 135 flowers and buds; this variety may also be grown in the Cattleya-house, but the East Indian-house suits it best. Give it plenty of water while growing, and by no means allow it to become dry in winter. The flowers of Chysis bractescens at once remind one of a statue, so solid are they in appearance and colour of sepals and petals, being as near like a marble image as it is possible to describe; the lip has a yellow blotch, streaked with rich brown. I have one of these now with two spikes from one growth; the flowers, however, are not quite so large-31 inches-as where only one spike is produced from each growth. I think this species deserves to be more extensively grown than at present. Each plant here has or will flower in spikes varying from two to five flowers from each growth. They are imported pieces obtained in February of last year, and after starting were placed in baskets with peat and moss, and grown in the East Indian-house, and liberally supplied with water until growth was completed, when they were removed to the Mexican-house, and received only a minimum quantity of water; on commencing growth again they were placed in summer

Epidendrum bicornutum, a lovely species, is doing better here than it generally does. Last summer I received a plant of it which had made very small growth from its imported bulbs. Being in a basket, I hung it up over the water-tank at the warme:t end of the East Indian-house, and close to the roof ventilators, so that when air is admitted it passes freely over the plant, the current being, how-ever, broken by the blinds-Williams' patent Orchid shading-an admirable article for the purpose. I give the plant an abundance of water, and for root material sphagnum, peat, and charcoal. It is just opening a fair spike of its snowy-white flowers, excepting a few purple spots on the lip. Vanda Parishii, Marriottiana, a by no means common Orchid, is here represented by a plant carrying a spike of six flowers, the end bud not opening as yet, but still looking healthy. This seems to enjoy all the heat one can give it, and does best in a basket with sphagnum and crocks mixed through it. Dendrobium thyrsiflorum, with its large racemes of white and orange flowers, deserves a place in every collection, more particularly as, by having a few plants, they can be made to form a succession. I grow it in the warmest house, and rest it with others of the family in the Mexican-house, removing it to the hothouse as soon as the flower-nodes have pushed a little. It will last a fortnight in full beauty if removed to a cooler and drier atmosphere as soon as its flowers are fully developed. Cattleya citrina has been much admired by every one who has seen it. 1 grow it in the Odontoglossum-house, where it does remarkably well suspended from the roof on a piece of virgin cork, to which it is clinging most tenaciously, its roots creeping in all direction. We treat it liberally with water while growing, but give less afterwards. On the flower-spike becoming prominent I remove the plant to the Mexican-house, which causes the flowers to come larger, and brings the white edging on the lip out more clearly than when

allowed to open its flowers in the Odontoglossumhouse. The perfume of this Orchid is most delicious. The other day I saw a plant growing in a house with Pelargoniums, &c., a far more suitable place for it than a stove, in which it is yet occasionally to be found, so that any one with a glasshouse need not despair of growing this gem, and it takes up little room. E. Dumpter, Gr. to J. Fitzgerald Bannatyne, Esy., Summerville, Limerick.

REQUISITES IN ORCHID CULTURE.—M. Lucien Linden appropriately calls attention to three cardinal points in Orchid culture :—I, The use of rain-water; 2, The employment of shading only when the sun burns, and then the light should be allowed to filter through open canvas netting; 3, Abundance of air even in frosty weather, when M. Linden counsels the ventilators to be opened and heat to be raised in proportion.

ODONTOGLOSSUM HALLI,—A splendid variety with a large white lip, of this showy Odontoglot, is now in flower in Baron Ferdinand de Rothschild's collection at Waddesdon. The plant has seven spikes bearing 103 flowers, and is composed of eighteen leaf-bearing bulbs—a very fine specimen.

Cypelfedium Pubescens. — Last year, at one of the highly successful conversaziones which the Royal Horticultural Society held at Burlington House, in the rooms of the Linnean Society, Mr. Goldring exhibited blooms of this fine hardy species. In our columns (vol. xix., p. 785) a life-size engraving igiven, and a reference to this will show what a fine plant it is. Although not possessing the brighter colours of one of its allies, C. spectabile, the combination of yellow and brown is decidedly pleasing. The species forces well, too. In a wild state C. pubescens is frequent in the United States, where it affects bogs and low woods.

CYPRIFEDIUM CAUDATUM.—Although this is the generally recognised name in gardens it would be more correct, botanically, to include it in the genus Scleinjedium on account of the three-celled ovary. It is figured in Paxton's Flower Carden, i., 9, and has been in cultivation for over thirty years, yet it is sessed on seen in healthy vigorous growth than is desirable. This is probably owing to a less pliable constitution and less accommodating to circumstances than some of its congeners, which flower almost continually. Like the rest it is terrestrial in habit, and, being a native of the dripping climate of Ecuador, delights in librar supplies of water. If potted solely in living sphagnum moss it will give more satisfactory results than in the usual mixture of ingredients, the moss being very retentive of moisture. The extraordinary length of the petals giving rise to the specific name constitutes this species an extremely interesting and highly attractive subject.

ONCIDIUM TIGRINUM.—A free-growing and free-blooming species, of compact growth, with a moderate-sized branching raceme, and flowers of long duration, produced in autumn. The flowers are 2½ inches in their longest diameter, flat, oblong; sepals and petals narrow, oblong acute, yellowish, with cinnamon-brown bars; the lip 3-lobed, side lobes small, rounded; central lobe stalked, very large, cordate, transversely oblong. Native of Mexico. Orchid Album, 1, 137.

LÆLIA ALBIDA. — An autumn-flowering species, with terminal spikes of six to eight flowers, each about 2 inches across, flat, stellate; sepals and petals oblong or lanceolate, white; iip 3-lobed, side lobes erect, unfolded; central lobe tongue-shaped, rose-coloured. Native of Mexico. It requires bright light and abundance of water in the growing season. Orchid Album, t. 138.

ARUNDINA BAMBUSIFOLIA.—An Orchid with long reed-like slender stems, and long sessile lancedate leaves. Flowers in racemes or spikes at the end of the stem expanding successionally, each about 24 inches across, flat, with a projecting lip, broadly oblong; sepals lanceolate, petals ovate lanceolate, rosy, lip as long as the segments, convolute at the base, the distal portion flattish, with two rounded lobes, magenta, with orange or whitish stripes in the throat. Native of North-east India. Orchid Album, 1, 139.

CYMBIDIUM AFFINE.—An Assamese Orchid, with racemes of large white flowers, each about 23 inches across, segments oblong acute, lip arched, rather shorter than the segments, 3-lobed, side lobes concave, central lobe flattish, cordiform, white with purple spots. Orchid Album, t. 140. Mr. Williams recommends these plants to be as fully exposed to the light as possible, but shaded from the direct rays of the sun.

FRUITS UNDER GLASS.

PEACHES AND NECTARINES .- A buoyant condition of the atmosphere should be continually maintained in early houses in which the fruit is closely approaching maturity, and the fruit should be exposed to the full power of the sun, so that the highest degree of finish and flavour may be obtained. daily syringings with clean rain-water must be persevered with until the most forward fruits are fit to gather, and the borders at that time should have a sufficient watering to take the trees safely through the gathering period, and to prolong this and advance flavour the ventilators should be kept well opened both day and night, and a drier atmosphere be pre-Let the trees be looked over each day, and the ripe fruits removed and placed in a flat basket, well padded with wadding and tissue-paper. trees in the second house, which have now finished stoning their fruits, should have every encouragement afforded them to bring their crops to perfection. The cleanliness of their foliage should be insured by thorough daily syringings at six o'clock in the morning, and again at closing time; young laterals and terminal growths should be removed, while the permanent ones are carefully tied in, and the fruits exposed to the sun. The lack of substantial mulchings of short manure and adequate drenchings of tepid diluted liquid must not be permitted, neither must injurious insects be allowed to survive. Should brown-scale appear upon the young wood dislodge it at once with a small stiff brush saturated with a solu-tion of Gishurst Compound. Later houses should receive such treatment as will bring their fruits in at the required date; the ventilation should be attended to early before the sun runs up the temperature, and care taken in disbudding to secure a regular spread of young wood without crowding.

MELONS .- As early crops are gathered the plants should be removed, the woodwork of the pits cleansed, and the walls whitewashed to destroy any red-spider or other insects that may have taken up a lodgment there. The soil should also be removed and the upper portion of the beds, if composed of leaves or similar material, be turned and added to as required. A ridge of fresh compost should then be introduced to be in due time furnished with a set of young plants. Although it is far preserable to use maiden soil for each crop, the same soil may be made to do for two or more crops by turning over the ridges as soon as they are relieved of the old plants, well breaking up the compost, and removing the roots, moistening the mass through, and making all firm again in readiness for replanting. If the compost is much exhausted some decomposed manure mixed with it will be found beneficial, and top-dressings of horse-droppings as well as waterings with liquid manure will be of great assistance to the plants after the fruit is set. Some cultivators follow the system of taking two crops from the plants, and there is no difficulty in so doing, indeed it is advantageous where glass is limited, as two crops can be thus obtained from a given space a shorter time than could be otherwise accomplished, but the finest fruits are derived from young plants possessed of clean healthy foliage. Successional plants should have their secondary lateral growths well thinned-out before they lengthen and crowd the trellis, a moderately dry atmosphere with a warm circulation of air should be upheld during the time they are in blossom, and a high temperature especially when to be commanded from sun-heat, with liberal employ-ment of the syringe at closing time, should be provided whilst the fruits are swelling. The present is a suitable time for planting in frames which are unprovided with hot-water pipes, and these are usually available now after supplying crops of Potatos; plants raised under the influence of fire-heat for this purposes should be placed in their new quarters and inured to the change previous to being turned out of their pots, and night coverings with mats will be requisite for

VINES.—In situations that have not been for some time favoured with rain the condition of external borders with regard to moisture should be ascertained. It does not usually happen that these require to be artificially soaked with water so early in the season as the present time; nevertheless, with us this has been indispensable, owing to the lengthened dry state of the weather. When the berries in successional houses of Black Hamburghs show signs of colouring, the change of treatment essential to perfect this transition should be immediately brought into practice. Hastening the process by keeping a high moist temperature must not be attempted, as the deep bloom so much coveted is only procurable by the allowance of plenty of time. A balmy current of air constantly passing through the structure is of primary importance; the necessary atmospheric moisture should be created by early morning dampings, the Vines be still supported by timely waterings at their roots, and the production of young foliage should not be now checked. Any seedless berries of Muscats that may have been overlooked at the time of thinning should be removed carefully, for they will not swell to the full size, and the unevenness of berries detracts materially from the appearance of the bunches. Paramount amongst other duties now requiring attention is the thinning to be done in the succession houses, and to keep this work under requires both diligence and painstaking care. In dealing with Alicantes, Lady Downe's, Mrs. Pince's Black Muscat, and other varieties that have to haog after they are ripe through a lengthy period of variable weather, the importance of thinning, so that air can pass through the clusters and prevent moisture from condensing in their centres, should be borne in mind. As soon as the operation is completed see that the borders are remulched with good short manure. Early houses in which the top-dressings have become washed out and impoverished should also be replenished with like material. Thomas Coomber, The Hendre Gardens, Monmouth.

Plants and their Sulture.

FORCED PLANTS .- Among these useful aids to an early spring supply (both for affording an abundance of cut blooms and for use in the show-house or conservatory) there is hardly any plant more useful than the Deutzia gracilis when well managed. They can be retained in vigorous health for several years without even being repotted, provided they receive an average amount of attention in other ways that will be found conducive to their well-being. We have several large specimens which have not been repotted for the last eight years, and they have this season made a better growth even than usual, all of them having flowered most profusely previously during the early spring, with the exception of a few that we did not treat in the usual way last summer. For the sake of appearance we placed some in front of our large Camellias in pots, which being under the shade of some large Elms did not flower so well as usual, owing undoubtedly to the wood not being so well ripened.

When our plants have finished flowering we pick off all the flower-spikes and then encourage them to complete a good growth in the genial atmosphere of a vinery in its earlier stages of treatment. This we consider is an important item in their culture, as frequently after flowering they are discarded, as not being considered worthy of any special attention, even getting turned out into the keen cutting air and frosts of the spring months, there to take their chance. Under this treatment no flowers can be reasonably expected the following year. It may be urged that for want of room the plants cannot be accommodated to complete this after growth as we have just advised, but surely if they can be made to flower every season, instead of missing every other one, this could be managed, for it will be obvious that not nearly so many in number are required when they can be made to do duty every year.

When a liberal growth has been made, we gradually harden them off till they receive full exposure to sun and air. Ours have just passed from the vineries into a temporary erection that has to do duty as a greenhouse, and thence been removed to their summer quarters. Should any stock of this useful plant have been neglected thus far in the season, we advise them to be taken in hand at once, and as good a growth as possible be obtained whilst there is time to secure it. Any that are in a bad state of health will want attention at the root; by reducing the ball somewhat these would again go into the same sized pot, using a good fibrous loam with a little decomposed manure or leaf soil to encourage fresh root-action. All through

their active stages of growth the Deutzias will be benefited by occasional doses of liquid manure, even whilst the flower-spikes are heing developed. On no account allow them to suffer in the least when in flower, or this period of their beauty will be shortened thereby. They enjoy an almost complete immunity from insect pests, at least such is our experience-we never remember our stock to have been in the least affected with any. Some cultivators we are aware cut their plants hard back after flowering and thus endeavour to secure a good break of young shoots from the base; by this means, however, the plants do not increase in size so quickly, and we think it doubtful if there is any real advantage to be gained by following this mode of culture. Later on, in order to lessen the labour of watering during very hot weather, it will be found a good plan to plunge the pots from half to three-quarters of their depth in a bed of coal

The double blossomed Plum (Prunus sinensis alba flore-pleno) will succeed well under the same treatment as that accorded to the Deutzia, whilst we have every reason to believe (although we have not proved it from experience) that the comparatively new subject for forcing, the Staphylea colchica, would be amenable to the same course of culture. Of such subjects as Andromeda floribunda, Kalmia latifolia, and the hardy Rhododendrons, one season's rest will be found essential; we would therefore advise that they be turned out of pots into a bed of well prepared and suitable soil as soon as possible. That useful Lilac, Charles X., should also be turned out of pots, receiving at the same time a moderately good pruning, which would keep the plants compact, and be conducive to a good growth another season. Under the same treatment the Gueldres Rose (Viburnum Opulus) would also succeed, and be made to do good service again after a season's rest from flowering. Clumps of imported Lilies of the Valley that have been forced should be broken up, and each crown dibbled in separately on a bed of well prepared soil; after another year's growth the same could be turned to a good account for early forcing if desired. Clumps of Hoteia (Spiræa) japonica would be all the better if planted in the open soil for a similar rest; division of the largest should be resorted to, or they will be of unwieldy size another year. Both Dielytra spectabilis and Helleborus niger should be similarly treated if they have done duty this year io pots; a somewhat more open position would, however, suit them best. By disposing of the majority of hardy forced plants in this manner a considerable amount of labour will be saved, as well as being beneficial to the plants in the long run.

Solanum capsicastrum of the improved types should also be planted out at once to secure an early growth that will perfect a good crop of berries before the advent of the autumn frosts. The stock of Bouvardias when well hardened off may also with advantage be planted out for the summer, unless every attention can be insured for their well-being under pot culture. All the plants of Richardia æthiopica would decidedly be better off in the open ground than in pots, breaking up the larger ones unless extra sized plants are

When large plants of Salvias are wanted for the conservatory the same culture will insure the desired end with a minimum of labour, but for neat, compact plants pot culture will be the better plan to follow. Schicostylis coccinea should be turned out into rich soil, if not already done, previously increasing the stock by division if the same is deficient in quantity. It must not, of course, be assumed that no attention at all will be required for any or all of these several genera of plants (that we have advised to be thus treated) with respect to watering. A certain amount of water will be necessary during hot weather, but the unrestricted root-action will materially aid in sustaining the plants. Tames Hudton, The Gardens, Gunners/ury House, Adon.

PASSIFLORA RACEMOSA.—Amongst the brightest coloured stove creepers for the walls or rafters must be reckoned the above named Passiflora, often called P. princeps; the length of the inflorescence varies according to age and vigour, the difference being especially marked in young plants, and those possessing an extra amount of vigour. Like all the genus, it should be planted out in a not too limited border, if its true characteristics are to be seen.

APPOINTMENTS FOR THE ENSUING WEEK.

TUESDAY, May 27

TUESDAY, May 27

TUESDAY, May 27

WEDNESDAY, May 28

THURSDAY, May 28

THURSDAY, May 29

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M R. WILLIAM THOMSON, of the Tweed Vineyard, returns to the charge, when he asks, in a pamphlet before us, "Is OUR CLIMATE DETERIORATING?" Our readers will remember that this subject occupied much attention a few years ago, and that the late Mr. MACNAB, Mr. D. T. FISH, and others, discussed the subject at considerable length in our columns. Among the gardeners the balance was in favour of an affirmative reply to the above question. The meteorologists concluded that they had no sufficient evidence, and so the matter stood, and we venture to think still stands. We heartily agree with Mr. THOM-SON, that for the practical purposes of the gardener, the effects of climate on vegetation are much more to the point than the records of the thermometer. The thermometer is an inanimate column of spirit or mercury, affected indeed by changes of temperature -expanding by heat, contracting in its absence, but itself substantially unchanged. The plant is a living organism, composite in its structure, varied in its composition, never at rest (except under special conditions, which we need not refer to here), always at work, doing one sort of work at one place, fulfilling some other function elsewhere. It is helped, or it is hindered in its work by the same agencies as those which influence the thermometer, but in addition it is influenced by many circumstances, such as stage of growth, competition, situation, insect-agency, and injuries which have no effect on the thermometer. But while this is so, we demur to the statement that "the evidence afforded by the effects of climate on vegetation is more reliable than observations dependent on human instrumentality, however accurate," It would be so could we disentangle the complicated web of plant life, and say for certain what influences this particular thread of the web, what affects that one, and precisely what results are to be attributed to the combined action of the

The very simplicity of the thermometer and the abstract character of its indications show that the evidence it affords, so far as it goes, is and must be more reliable than that which is the outcome of the tangled complex we call life, But then it does not go far, and it takes note of one set of conditions only, and in so far Mr. THOMSON is right. For Mr. THOMSON "the produce itself is the only sure test, all other things being equal." Yes, but there is the difficulty: how can we equalise all other things? The thermometer does do it for us to a certain extent, but as we have shown only partially; and as for the other things we see no equality about them-they seem so extremely unstable that it is exceedingly difficult to come to any reliable conclusion. The physiologist in the laboratory may indeed contrive to isolate a plant and place it under comparatively uniform conditions, while it is made to tell its tale as to the effect of heat or cold, or what not, but in the garden or in the field such uniformity of conditions is unattainable. Mr. THOMSON brings forward evidence from various gardeners of repute, which tends to show-what is indeed sufficiently evident-that of late years crops of most kind have been bad, but, so far as we see, there is nothing to justify the large inference of any permanent deterioration, but merely of fluctuation. the winter we have just passed through, where about London, for instance, snow has scarcely once been seen, with those of 1879-1880, 1880-1881. Shall we, therefore, draw the inference that we passed through a neo-glacial epoch a year or two ago, and are now enjoying a climate like that of the Miocene period, or like that of the South of France at the present day? Obviously the answer would be in the negative; and so, without disputing the facts set forth by Mr. THOMSON-and which, indeed, may be taken as in the main beyond dispute-we may well hesitate before we infer from them that our climate has undergone, or is undergoing, deterioration, as distinct from fluctuation. Before we could accept such a view we should have to eliminate all other possible causes for the deficiency or inferiority of our crops.

Take fruit culture on walls, for instance. We think it can hardly be said, take the country through, that anything like so much attention and care is paid to wall trees as in the days of our forefathers. Doubtless those who hold that the climate is deteriorating will seize upon this in support of their case, but while allowing due weight to this point we would suggest that other causes might be found in the great extension of culture under glass, where the gardener is to a large extent independent of climate; to the multiplicity of duties now cast on the gardener, the constant demand for cut flowers and table decorations; all these matters take up time and labour, which used to be expended outdoors. Now-a-days it pays better to import products from more favoured climes, or cultivate under glass, and outdoor fruit crops suffer proportionately. But that this need not be the case is shown in cases where, as at Ditton Park, an amount of care is bestowed on the wall trees equal to what was applied in olden times. We mention these matters, not by any means as absolutely controverting Mr. THOMSON'S statements and opinions, but merely as elements in the problem, which must be duly considered before we can arrive at any con-clusion worth having. The recollections of individual gardeners as to the amount, and specially as to the character of the produce, unsupported by any more definite evidence, are, indeed, entitled to respect; but they will not contribute to the settlement of the question, unless backed up by trustworthy statistics and controlled by the elimination of other than climatal causes.

We cannot put pen to paper on this subject without expressing our regret that the information collected under the auspices of the Royal Horticultural Society as to the effects of the two severe winters we lately passed through remains still unpublished. If nothing else can be done, at least a mere list of plants injured at various stations would be useful. As it is, one of the greatest opportunities of the kind has been lost, and the advocates of the deterioration of our climate have lost what would have been for them a well filled armoury of facts.

We may conclude these remarks by appending some valuable information, derived from the Marquis of SALISBURY, as to the "vineyard" at Hatfield, of which we gave illustrations some years ago :—

"The Vines at the vineyard at Hatfield were planted in 160-11. As the vineyard was 5 acres in extent, and 30,000 Vines were planted, it may be concluded that they were standards. The Vines were a present from the wife of the French Ambassador to Sir Robest CECIL.

"It is probable that this was one of the latest vineyards planted in England. There is no record of the time when it was abandoned. Vineyards in England are mentioned as early as A.D. 280, and there are thirty-eight nettries of vineries in the Doomsday Book (compiled 850 years ago). CAMDEN says, in his Britannies 'It may seem to be the slothfulness of the people more than the indisposition of the air, that this nation yieldeth not wine at this day. The vineyards

probably declined gradually with the growth of comnerce, which enabled better wine to be got from France than could be produced at home. (The overthrow of the monasteries gave the finishing blow to home production of wine.)

"PARKINSON, writing of vineyards in 1627, says: 'The former vineyards in England have long since been destroyed, and the knowledge how to order a vineyard has entirely perished with them.'

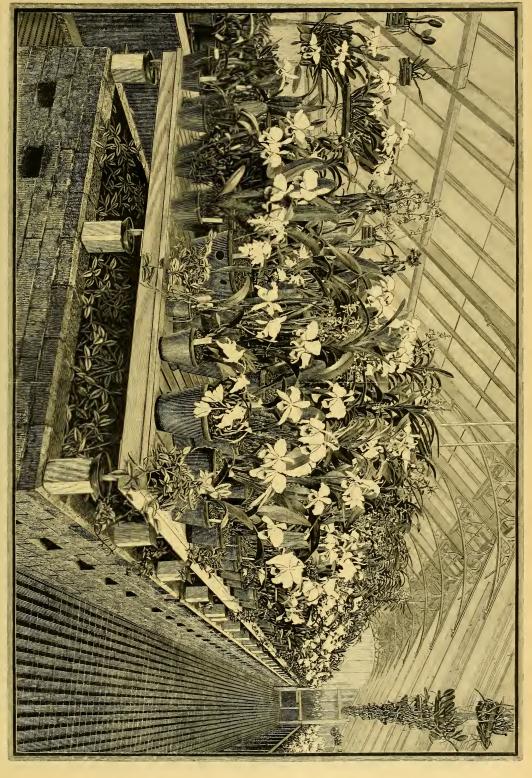
"AUSTIN, writing in 1663, gives as a reason why it is fruitless labour to strive in these days to make a good vineyard in England—"That the years are not so hot in Englund as formerly."

- Mr. LEE'S CATTLEVA HOUSE -- Our illustration (fig. 131), from a photograph taken for us by Messrs. Bedford, Lemere & Co. just before the end of the C. Trianæ season, gives a view of Mr. WILLIAM LEE's famous Cattleya-house, and will serve to give an idea of the excellent quality and fine condition of its occupants. Allowance must, however, he made for the limited field which the camera covers compared with that which the eye takes in, and the consequent difficulty of introducing anything but a glimpse of the beauties displayed along the whole length of this vast and well-appointed structure. With respect to the excellence of the plants, and the extraordinary varieties to be found here, little need be said, as their reputation is well known; and the fact that ever since its completion last year, in addition to receiving the already existing fine collection, the Downside Cattleya-house has been open to admit every other worthy variety, should pronounce it to be of the first merit. Among the many rare things in flower at the time our picture was taken were fine plants of C. Trianæ alba, C. T. Dodgsoni, C. T. Osmani, C. T. Normani, C. T. Backhonsiana. Osmani, C. T. Normani, C. T. Backhonsiana, C. T. Russelliana, and the famed 250 guineas C. T. Leeana. Among the Cattleyas will be seen the earliest of the Vandas. The collection of these is very complete at Downside, where every obtainable good variety is grown. The Vandas are grown with the Cattleyas all the year round, and nothing could he better than their healthy condition and the freeness with which they produce their flowers, which begin before the C. Trianæs are over, and continue to accompany the C. Mendelii and C. Mossiæ throughout this season and late into the summer; indeed, the different species of Cattleya, Lælia, and Vanda contained in this house and its two lobbies seem so to work in with each other that a constant and varied display of bloom is kept up all the year round without the aid of plants grown in other houses being called in. At the present time the C. Mendelii, C. Mossice varieties, the Vandas, &c., are producing as fine a display as that given by the C. Trianæs. Seeing that Mr. LEE has so admirably planned his Cattleya-house, we again give its dimensions, which are 100 feet long, 21 feet 6 inches wide, and 12 feet 6 inches high to ridge. Top ventilation from end to end; bottom ventilators 3 feet long and 9 inches wide, placed 6 feet 6 inches apart; and there is also at each eave of the roof, where the glass comes on the wall-plate, a quarter of an inch of air on day and night, summer and winter-the edge of the first sheet of glass being fixed with this aperture between it and the wall-plate, an arrangement which always ensures a pure air in the house. The walks are 3 feet 9 inches wide, and paved with Staffordshire blue brick, the grooves in which keep the walks comfortable even when abundance of water is used. Indeed, in this and all the other houses at Downside, the object seems to be to make them comfortable and healthy, both for the plants and their admirers.

—— WOBURN ABBEV.—The Duke of BEDFORD has given permission for the Abbey Gardens and Sculpture Gallery at Woburn, and the Park Farm, to be open to members of the Royal Agricultural Society and their friends who may wish to see the various objects of interest there, after inspecting the Woburn experiments on the occasion of the annual excursion organised by the Society, which will take place on Thursday, June 5.

— THE HON. AND REV. J. T. BOSCAWEN asks us to state that he will be at the Show-ground, Maidstone, all next week, and that he will be obliged by his correspondents addressing him there.

— ROYAL HORTICULTURAL SOCIETY.—At the last meeting of the Floral Committee Mr. CHARLES KERSHAW, Sleadsyke Nurscries, Brighouse, was



awarded a First-class Certificate for a coloured form of the common Sycamore, mention of which was inadvertently omitted in our report.

PICKLED PEACHES,—The Revue Horticole recommends the young Peaches removed at thinning time to be put into vinegar and pickled like Gherkins. Our contemporary is usually sober in his praises, but he emphasises the pickle as excellent.

— Instruction in Market Gardening.—
The Préfet of the Seine has appointed M. Duvillard,
market gardener, of Arcueil, to give public instruction in the principles and art of market gardening,
for which it appears M. Duvillard has special
qualifications, not the least of which is an excellent
establishment where the various branches of the art
are carried on. A little information of this character
in our country districts would be very desirable,

THE JARDIN DES PLANTES, — The Revue
Horticole announces the appointment of M. LOURY as
superintendent of the glass-houses, in the place of M.
HOULLET, resigned,

— MOUNTING DRIED PLANTS. — Dr. J. H. OVSTER, in the Botanical Casette, recommends the following cement, in place of gum or glue, for mounting plants:—Bisulphuret of carbon, 4 oz.; crude indiarubber sufficient to make of the proper thickness, It is always ready for use. We imagine the difficulty for many people would be to get the materials.

- TOBACCO JUICE OR TOBACCO WATER is now very generally recommended for mixing with other articles for washing fruit trees, Roses, &c., for the destruction of insects and blight. Inquiries are often made as to bow and where this juice can be procured under the name of the London Tobacco juice, very few knowing that a grant from the Honourable Board of Customs was allowed to Messrs. Corry & Soper, of Shad Thames, London. S.E., in the year 1866 for the purpose of extracting the juice from leaf Tobacco for horticultural purposes eotirely free of duty, thereby enabling the public to get a strong article containing about 40 oz. of lea Tobacco to every gallon for the sum of 2s, 6d., being a great saving on the ordinary Tobacco-water obtained from the Tobacco manufacturers, as it may be diluted with eight to ten parts of water with the best results, thereby effecting a great saving not only in cost but in carriage. We believe Messrs. CORRY & SOPER are the only makers of this article in London, and it may be obtained through the seed trade generally.

— LABELS.—Among the numerons substances recommended for labels, we do not remember to have heard before of meerscham. M. HEDIARD, however, at a recent meeting of the Central Horticultural Society of France, spoke favourably of it. M. DUCHARTER, at the same meeting, advocated the use of scraps of ivory on which the name of the plant is to be written with a quill pen dipped in a solution of nitrate of silver. The inscription can be removed if necessary by scraping with glass.

— THE BLUE GUM TREE IN IRELAND,—A question having arisen as to the hardiness of Eucalyptus globulus in Ireland, enquiries have been made on the subject, and we learn that on Lord MAURICE FITZCERALD's estate at Johostown Castle, Co. Wexford, the recent hard winters have killed them off, although they had attained 60 feet in height, and had been planted thirteen years. Lord MAURICE FITZCERALD has a good many young plants from last year's seed, but is doubtful if they will survive any hard winters that may be experienced in the future.

COTTAGERS' AND ARTIZANS' EXHIBITION AT SOUTH KENSINGTON—We find that the exhibition of collections of cottagers' produce by societies, in order to illustrate the culture of a district, is in danger of being considerably restricted, by reason of the fact that collections of fruit must be shown with vegetables. Apart from the fact, that in many cases there will be in all probability a scarcity of fruit, there are not a few districts in which allotment gardens are necessarily limited in extent—not exceeding 20 rods—and it is against the regulations in some instances to plant fruit trees. In cases where there is no such regulation, those who cultivate prefer to grow ground crops, and eschew planting of trees, confining themselves to a few bush fruits. There are acres of allotment gardens about the country on which it would be difficult to

find a standard or bush tree of Apple, Pear, Plum, or Cherry. One locality near London, where vegetables are finely grown on the allotment gardens, will be excluded from competition in consequence of fruit being required. It is too late to make any authoritative announcement, but it is to be feared that, fruit being indispensable according to the conditions of the schedule, the competition will be restricted in con-It would be well if Mr. BARRON were sequence. authorised to make some definite declaration as to what is implied in the term "kinds." Is it to be understood in the sense of variety or not? Because the term is differently understood in some localities from what it is in others, there is much need that an authoritative declaration be made. It is a nice point to leave to the decision of judges, though there is no doubt but that the men who will be called upon to make the awards will put a liberal interpretation on the schedule. But in such a peculiar competition as this, the fewer ambiguities there are to exercise the minds of exhibitors the better.

OX-EYED DAISIES,-In the neighbourhood of Maidenhead the steep embankments on the Great Western Railway are white with the manifold blossoms of the white ox-eyed Daisy (C, lencanthemum). It has spread itself along the sides of the embankment for miles, and the wonder is that in such an open sunny spot the plants are not roasted up during summer. In the fields, and especially in some parts of Kent, the yellow Corn Marigold (G. segetum) is throwing up large numbers of bright golden-yellow flowers, where they contrast with scarlet Poppies and the blue Centaurea Cyanus. It is worthy a place in our gardens, for it is invaluable for cutting from. It is recorded that at one time this became so troublesome a weed in Denmark that a law was passed inflicting a penalty on any farmer who neglected to eradicate it from his cornfields. It does not appear to be plentiful enough in this country to become a nuisance to the agriculturist, and in all probability the fact that it is being made a garden plant sets persons to work to collect seeds, and this must tend to circumscribe the growth of the plant. The single form of Chrysanthemum coronarium is an excellent companion to this,

- TRADE CATALOGUES. - It is against our rule, for obvious reasons, to notice trade catalogues in any other way than by a simple acknowledgment of their receipt, but now and again we feel obliged to break the rule in question in favour of a catalogue which appears to us to be that and something more, and such an one is now before -a catalogue of Ferns cultivated for sale by Messrs. W. & J. BIRKENHEAD, of Sale, near Manchester. It is a small quarto of 100 pages, profusely and admirably illustrated, and much to be commended both for its orthography and typography, which are excellent. The Ferns are arranged alphabetically in three groups-stove, greenhouse, and hardy, with the native country and average height of each, and at the end several pages are occupied by valuable advice on the culture and management of these interesting plants. It is indeed something more than a mere trade list, and deserves hearty commendation.

- NOMENCLATURE OF VARIETIES - Some time since we had occasion to call attention to the diversities and incongruities of practice, arising from the admixture of adjectives of different genders in composite names (p. 373). M. ALPHONSE DE CAN-DOLLE was good enough also to give an expression of opinion on the subject. M. DE CANDOLLE pointed out that, in general, authors of repute have made the varietal name conform to the gender of the generic name, thus-Thymus Serpyllum, B. montanus. Where the abbreviation "var." or the word "varietas" are employed, there, says M. DE CANDOLLE, it seems most correct to make the adjective feminine. Having the convenience of gardeners (not that of philologists) in mind, we suggested that in all cases the varietal name should be feminine, whether the word "varietas" be expressed or merely understood. In some comments on this article in the American Journal of Science, Dr. ASA GRAY points out that LINNÆUS, as a rule, made the gender of the varietal name follow that of the generic, neuter if neuter, feminioe if feminine, and so on, thus :- Viburnum opulus. 8. roseum, or, to take an example used in our former note, Narcissus Bulbocodium monophyllus. Dr. GRAY, from an oversight, makes us attribute to M. DE CANDOLLE words that he did not use-a passage which he quotes in inverted commas is made to read

as if it were the opinion of M. DE CANDOLLE, which it really is not, as the reader may see on referring to the page where M. DE CANDOLLE's opinion is given quite separately, but it will be seen that it, in so far, coincides withour own view—that the feminine termination should be used when the word "var." is employed. Dr. GRAY proceeds to say that if our proposal of making the varietal name feminine in all cases [where there was no objection to the practice] were to be adopted, specific names and subspecific names would have to be made feminine also. Why not? We would have plant names, of whatever grade, feminine, provided there were no grammatical or other reason to the contrary. Where a neuter or masculine form is an indication of a bit of history, as it so frequently is, there, of course, we would religiously preserve it in its original form; but in the case of newly-formed names, and more especially of those which fill our horticultural catalogues, we believe that our proposition would tend to simplification, and obviate doubts.

THE HEALTH EXHIBITION .- As exhibitors of models in wax and other materials of our most esteemed varieties of vegetables, salad plants, Pulse, roots, and Curcurbits, the palm should certainly be awarded to Messrs. SUTTON & SONS, of Reading. Their display is not only the most varied and extensive, but is remarkable for the generally faithful reproduction of the objects dealt with, and therefore must form a trustworthy guide to amateurs and gardeners desirous of making selections of these products of the garden and the field. We see here, at a glance, the different sorts of Peas, Beans, Lettuces, Beet, Radish, &c., modelled when the respective items are just at that stage of growth that best adapts them to be gathered for use; roots, such as Potatos, Beet, Parsnips, Turnips, as fully developed, but not overmature; whilst roots and other purely farm productions are represented in their fullest development, Collections of seeds, and seed-bearing grasses and cereals properly so-called, occupy the upright sides of the stand, whilst the wax models are arranged in convenient horizontally placed glass cases round the sides and ends; and the position of the exhibit is directly facing the visitor on entering from the Exhibition Road. To the left of this stand Messrs. WEBB & Sons, Wordsley, have a large collection of vegetable seeds, heads of grasses, Rye, Wheat, Barley, and Oats, in considerable variety; Clovers, Peas, and other kinds of farm and garden seeds; fine samples of the Peas Kinver Marrow, Electric Light, New Triumph, and Wordsley Wonder. Not far removed from this case is that of Messrs. WHEELER & Son, of Gloucester. This is one of the more interesting collections, as the exhibitors have classified the grasses according to their adaptability to various soil formations. Thus, for chalk, we bave Anthoxanthum odoratum, Poa pratensis, Lolium perenne, Cynosurus cristatus, Avena flavescens, Festuca ovina. London Clay or Eocene: Lolium perenne, L. Devonianum, Dactylis glomerata. and so on through carboniferous or limestone soils and Oxford clays. Garden vegetable seeds, farm seeds, and samples of appetising-looking ensilage Berkeley, &c., complete the items shown. Messrs. JAMES CARTER & Co., of High Holborn, are also well represented. In their cases we find seeds arranged according to their uses, but without regard to soil or climate; pasturage and culioary vegetable seeds, those of plants suitable as bee feeders, and of textile plants in great variety, medicinal and fruit We noticed seeds of Cinchona, seeds and stones, Manioca, Betel, Diospyros embryopteris, Cardamons, Colocynth, Nux Vomica, Kola and Brazil nuts—the latter being entire, and not as we are accustomed to see them exposed for sale, in size near that of a cricket ball. Many sorts of cattle feeding cake, samples of ensilage from Clover and Rye, and likewise from Spergula arvensis, some plants of the last named being shown in growth; flour made from various seeds, such as Wheat, Millet, Buckwheat, Peas, Lentils, &c.; and from widely separated landsas New Zealand, Russia, Hungary, and the United States-nuts, berries, Hops, and seeds of many coniferous trees also find a place in this instructive and well arranged collection.

— THE HEALTH ENHIBITION. — We inadvertently stated in our last number that the planting in the middle walk in the show was is in the hands of Messrs. WATERER & CO., of Bagshot, instead of Mr. ANTHONY WATERER, of Knap Hill, Woking.

- IXIA CRATEROIDES. - This undoubtedly is one of the most beautiful of the larger group of varieties, and it is a conspicuous feature at Gunnersbury Park just now. Grewn in pots, a few bulbs in each, and subjected to cool treatment, the specimens are covered with strong bearing fine bunches of rich bright rosycrimson flowers, making it a decorative plant of great beauty. Mr. ROBERTS must be commended for the prominence he has this season given to Cape and other bulbs. On the south front of one of his houses in the kitchen garden he has a raised bed 30 inches or so in width, with a brick fronting 3 feet in height. On the top of this is a bed of good soil, a foot in depth, and in it Mr. ROBERTS planted early in February lines of Gladiolus Colvillei albus, Sparaxis, Ixias, and Freesias. All have made a strong growth, and this should presently be a very charming bed indeed. Dry as the weather is, the development of the plants is good, and helped by occasional waterings they stand the drought without injury. One interesting feature always present at Gunnersbury is, that Mr. ROBERTS always has some novelties in flower that one does not meet with in ordinary gardens,

— VEGETABLE PRODUCTS IN SWITZERLAND,—
From a report of the Horticultural Department of the
receot Zurich Exhibition, by M. E. MERTENS, we
learn that the approximate annual value of the horticultural products in Switzerland is as follows:—

| France, | France, | France, | France, | Tables |

- OPENING AND CLOSING OF FLOWERS. -M. DUCHARTRE, in a number of the Bulletin of the Botanical Society of France (1883), p. 66, which has only recently reached us, sums up the results of some observations on Crocus flowers by saying that the expansion of these flowers, whether cut or still remaining attached to the plant, is promoted by increase of temperature, and their closing by diminution of temperature, independently of any action of light. The change may be produced by a variation of 4-5 C. in from thirty to sixty minutes, and the phenomena may in general be repeated several times in the same flower by alternate exposure to relatively high or low temperature. M. DUCHARTRE suggests that the placing the closed flowers in a higher temperature induces evaporation from the outer epidermal cells of the perianth segments and consequent shrinkage, in consequence of which the segments curve outwardly and the flower opens. When the expanded flowers are removed into a cooler temperature evaporation diminishes, the turgidity of the outer cells is restored, and the segments close up.

- Loss of "Leaders" in the Spruce .-M. MER, in a communication to the Botanical Society of France, Feb. 9, 1883, explains the tendency of the Spruce, grown in the edge of plantations, to lose their leaders on the following grounds :- The leaves on the leader shoots, whether primary or secondary, receive the light tangentially to their surface, and hence at a disadvantage, as it has been shown that the starch-producing power is exercised most fully when the leaves are exposed to direct light. Hence, if the leading shoot be overshadowed by neighbouring branches, starch is formed in small quantities, and the leader is in consequence enfeebled, the diminished activity of the leaves prevents the supply of sufficient water, and the leaves consequently dry up, and ultimately the shoot itself perishes.

—— HYBRID NARCISSUS.—M. L'ABBÉ MAGNAN cites, in the Bulletin of the French Botanical Society (June 9, 1883), a wild hybrid between N. juncifolius and N. Tazetta, the latter being the seed parent. The foliage is intermediate in character between that of the two reputed parents. The flowers have the colour of those of N. juncifolius and the size of those of N. Tazetta. M. MAGNAN goes into particulars in support of the correctness of his views.

— WEEDS AND WORK. — Those pestilent enemies of garden proprietors, weeds, are the best friends of the garden labourer. Just now we find the

latter earnestly anxious that weeds should grow, and, pests as they are to the former, even he thinks growing weeds less an evil than no growth whatever, Throughout our market garden districts the absence of weeds, consequent upon the long-continued lack of rain, is causing a dearth of labour, and in all directions men and women have been released from daily toil-a fate that may seem pleasant enough but for the fact that they, too, are released from receiving their weekly pay. We have heard employers say that they do not mind weeds growing, because other things grow too. That is looking at the matter in an excellent and philosophical spirit. Such a growing time is rather favourable to the labourer, because often then his employer's necessity is his opportunity. Just now the employer has it all his own way, and if the labourer does not pray for rain, that the weeds may grow, it is doubtless because he thinks rain and weeds past praying for. Many employers, we fear, in regarding the absence of weeds, are apt to think that the hoe, one of the most useful labour implements in gardens, has no further purpose to serve, and that it may as well hang and rust. That is a grave error, not only from a cultural point of view, but also from The hoe is a first-rate cultivator, and the labourer's. its free use amongst crops, even if there be no weeds to kill, will be productive of great good in freeing and aërating the surface of the soil, and thus promoting growth in the crops. The soil which in the severest drought has its surface kept loose and frequently stirred, will always have a most moist base. Both in the interests of good cultivation and of the wageless labourer, we commend that fact to the attention of

--- CABBAGES,-Spring Cabbages have always been esteemed as favoured and acceptable vegetables. It is true they follow upon that flower of the Brassica family-good late Broccolis; but on the other hand the Cabbage has its spring season pretty much to itself, and in green stuffs our choice is that of Hobson's -Cabbage or nothing. We find just now a good breadth of spring Cabbage of the highest value. White and purple Broccolis are gone; so, too, are all other of the winter greens, and even the winter Spinach has been dug or ploughed in to make room for late Potatos, so that Cabbages and winter Onions -the latter by no means a substitute for Broccolisare the chief garden and field products. Cauliflowers are not in, though blessed indeed is the gardener, private or otherwise, who has a goodly and an early planted breadth of these almost ready for cutting, Seakale and Asparagus are vegetables for the select, but not for the million, and but for spring Cabbages the million would just now be greenless. Even these Cabbages, however, are not just now all that could be desired, for they have been too long wanting rain, and wear a bluish aspect. Cabbages have had their integrity severely tested this year also, and any tendency to bolt has been helped rather than retarded. We fear that this tendency thus hastily to make the running is due more to bad selection than to weather, because [there are myriads of plants that have withstood the temptation bravely. Bad would it be for us if they had not. In spite of assumed new kinds it is open to doubt whether we have made with Cabbages any great stride during recent years. There were plenty of beautiful spring Cabbages a generation since, and we have no more now. Still it is some-thing if we think we have advanced, as our self-love is satisfied.

— THE LUDLOW ROSE SHOW is announced to be held on Tuesday, July 8.

— DATURA SANGUINEA. — Formerly botanists were wont to divide the genus Datura into several, and this species was included amongst the Brugmansias on account of its shrubby or tree-like habit and pendulous flowers, with the ealyx splitting on one side, and resembling a spathe. A magnificent specimen, now in lull flowering order in the conservatory at Kew (No. 4), is a sight in itself well worth a visit to see. It is permanently planted out in a border, and receives no particular treatment, except a hard cutting back towards the end of the season, when flowering is over, in order to keep it within reasonable bounds, and induce it to form strong young wood, on which alone the handsome scalet flowers are produced. Cultivated in pots the flowering season can be regulated in a great measure by the time of pruning back, and introducing to a stove temperature in order to

start it; but flowers will not be so freely and abundantly produced as when planted out. There is a painting of this species, No. 161, in the "North" Gallery at Kew.

- THE PARCELS POST .- The postal authorities again direct attention to the necessity of everything sent through their hands being securely packed. Fruit, especially, should be packed securely in tin boxes with tight-fitting lids, and in such a manner that the juice may not exude to the damage of other things sent by the mails. In the case of eggs, the authorities recommend the following method of packing :- To use a tin box with well-fitting lid; to wrap each egg separately with a sufficiency of old news-paper, or other soft material; to place the eggs on end, one close to the other, and to fill up the interstices and the box with newspaper, cotton waste, sawdust, bran, or chaff, so as to prevent the eggs from striking together, or against the sides or top of the box in which they are contained; finally, to write prominently on the address portion of the outer wrapper or label the words, "Eggs-with care."

— THE ORCHID MARKET.—At the sale of Sir WILLIAM MARKET's collection of Orchids, held this week at STEVENS' Rooms, the highest prices realised were for Cattleya exoniensis, 34 gs. and 38 gs.; Dendrobium nobile nobilissinum, 7½ gs.; Vanda teres aurora, £10; Cypripedium Stonei, 19 gs.; Cattleya gigas, 14 gs.; Odontoglossum crispum Dennianum, 14½ gs.; Cattleya labiata, 9 gs.; C. Dowiana, £6 to and 7 gs.; and Lælia purpurata, £9.

— CLEMATIS JACKMANNI ALBA,—A form asserted to be a cross between C. Jackmannix and C. Fortunei, with pinnate (not ternate) foliage and large white flowers, flushed with a bluish shade and produced on the young wood. It was raised by Mr. NOBLE, of Bagshot, and is figured in the March number of the Florist and Pomologist.

- THE WEATHER.-General remarks on the temperature, raiofall, and duration of bright sunshine, for agricultural and sanitary purposes, during the week ending May 19, 1884, issued by the Meteorological Office, 116, Victoria Street, London, S.W.: The weather has been rather dull in Ireland, Scotland, and the north-west of England, with frequent showers, but elsewhere the sky has been clearer and the weather generally dry. The temperature has been a little below the mean in the western and extreme northern parts of the kingdom, as well as in the Channel Islands, but from 1° to 3° above it in the east of Scotland and over eastern, central, and southern England. The maxima, which were registered on the 16th in most districts, but on the following day in the south east of England, varied from 59° in "Scotland, N.," and 60° in "Scotland, W.," to 74° in "England, S.," and 75° in the "Midland Counties." The micima, with few exceptions, were recorded on the 19th, and ranged from 32° in "England, N.W.," and "Ireland, N.," and 33° in the "Midland Counties" and "England, S.W.," to 40° in "England, S.," and 46° in the "Channel Islands. The rainfall has been more than the mean in Scotland, the greater part of Ireland, and the north-west of England, but less elsewhere. Bright sunshine has been less prevalent than during last week in most places, the percentages of possible duration varying from 22 in "Ireland, N.," to 42 in "Eggland, N.E.," and "England, S.W." Depressions observed:

—Barometric pressure has continued highest and —Barometric pressure has continued highest and comparatively steady over France, while over our islands the barometer has again been influenced by depressions moving in a north-easterly direction outside of, or over, our extreme north-west and northern coasts. Southerly to westerly winds have consequently prevailed over the United Kingdom, and, though moderate in the east and south-east, have blown freshly or strongly in the west and north, at times reaching the force of a slight gale. At the close of the period the barometer had become highest on our western and south-western coasts, and the wind over our islands light in force and variable in direc-

— GARDENING APPOINTMENTS, — Mr. LEWIS JORDAN, formerly Gardener at Coleby Hall, Lincoln, as Gardener to J. TEMPLETON MORGAN, Esq., Erampton Park, Huntingdon.—Mr. H. Balley, for the last two years Orchid Foreman at The Poles, Ware, as Gardener to W. L. BARCLAY, Esq., The Briers, Reigate.—Mr. WILLIAM HALL, lately Gardener at Deighton Grove, York, as Gardener to C. PERKINS, Esq., Kirkley Hall, Northumberland.

THE INTERNATIONAL EXHIBITION AT ST. PETERSBURG.

THE International Exhibition of the Imperial Society of Horticulture, open from May 17 to 28, is being held in the Manège Michel, a large building formerly used for the parade of Guards, and situated a short distance off the Nevsky Prospect. The interior of the building is oblong, about 300 paces long, and about 66 in breadth, and upon this unpromising dead level and rigidly restricted space has been formed a scene which for effectiveness and splendour must surpass all expectation. From the Botanic Garden and from the Imperial Gardens at Gatschina have been brought a number of fine specimens, including many magnificent Palms and Cycads, which form in themselves an exhibition. The building in proportion is not lofty, and by skilful disposition of the plants a happy appearance of breadth has been secured, while it is at the same time completely furnished. The one misfortune is a slight insufficiency of light, which is admitted only by side windows. The arrangement has been planned and carried out by Dr. Regel, the general Director, and he has succeeded well in his evident aim to produce a natural effect, and to avoid all staginess. We can but say that the result entirely repays the pains and trouble that has been taken.

The principal entrance, at the end of the building, opens upon an elevated platform, a kind of transverse promenade, prettily screened from the grand display by an ornamental colonnade, covered with Ivy, and from this position we get an idea of the general The walls are entirely screened from view by flanks of fine-foliaged and flowering plants; between the windows Spruce Firs and other tall plants reach to the ceiling, and a walk gracefully curved in conformity with the shape of the central groups gives free circulation around the building, while between the groups there is free communication from side to side. The fine specimens and principal groups are shown to advantage by undulations of the floor, in imitation ol a naturally favoured garden. Descending from the entrance platform we reach the first large group on the lowest level, the next is on higher ground and includes a pond, of irregular outline in rugged rock, with a fountain. Further on the principal walk on the left is carried by a bridge over a rocky ravine which leads to the relreshment department. This bridge is formed of Birch timber with its natural bark, and the effect is good. Rocks are cleverly imitated on a basis of wood by means of Russian mats; they are laid in the form desired, and then covered with plaster, which is coloured in imitation of Nature.

Passing the bridge we come into view of an English garden at the further end, which slopes to a rocky background at considerable elevation. Through the centre of it and under a bridge we pass to a department for implements, pottery, and artificial flowers with many other miscellaneous exhibits. The English garden is tastefully laid out, though its use is purposely to display the plants exhibited. A rivulet bordered with Arum Lilies, and crossed by a bridge, is introduced with very good effect. From the bridge which crosses the ravine leading to the implement and miscellaneous department we have a fine view of the entire scene, and it has a charmingly tropical aspect, enlivened by the passing and repassing of the groups of visitors. The exhibits repose, it were, in groves of fine Palms and Cycads, formed for their reception by the liberality of the great establishments we have already mentioned. Everywhere beneath the plants the ground is surfaced with moss, and tubs necessarily exposed are decorated with sheets of Birch bark. The great groups are outlined with strips of thin wood, painted green, and within are the subordinate groups of the collections

exhibited.
Judging the exhibits practically occupied the whole of the 16th. The members of the jury to the number of nearly 200 assembled under the presidency of II. E. General Greig, and the business of the day was commenced by a religious service, followed by a benediction upon the entire exhibition. General Greig then expressed thanks to the jurymen and exhibitors for their attendance and exhibits, and proceeded to explain the order of the day. The jurymen were divided into sixteen sections, each of which lected a president and secretary. On Saturday, the 17th, in the afternoon, the Exhibition was opened in full ceremonial by the Emperor and Empress, who were attended by a throng of Ambassadors, Ministers, Generals, and Court digoitaries, all in full notiform, and bearing their decorations. There were

present the Grand Duke Vladimir, the Grand Duke Nicolas, a patron of the Society, and a number of distinguished ladies.

Our report of the exhibits must be deferred, but we may instance in particular a remarkable collection of hardy Orchids, exhibited from the Botanic Garden, to the number of about thirty species, in flower—the finest we have seen since the time of the fine collection of the Comte de Paris at Twickenham. Then there is a splendid collection of new plants, from the Compagnie Continentale d'Horticulture of Ghent, which we will have occasion to note in detail. There is complete absence of Foglish exhibitors.

In the evening the first meeting of the Congress took place, in the Hôtel de Ville, and after an address by H. E. General Greig, the Vice-Presidents and Secretaries were elected, and arrangements were made for the future sectional and general meetings. (From our Special Correspondent.)

· Special Corresponding

Home Correspondence.

British Ferns and their Varieties. — Would Mr. Stansfield kindly give us, as time permits, a description of the various varieties of British Ferns? I am well aware that this would be a laborious task, but to Mr. Stansfield, who is at home with the subject, it would be less difficult than to any other of your correspondents. To many others, as well as myself, I have reason to believe that the above would be a subject of special interest. What is most wanted is a description of the better and more distinct varieties, so that their identification may become simple to the amateur. A. D. W.

The Fruit Crops.—After getting towards the end of April without any frost of consequence, we had reason to think the fruit crop was sale, but unfortunately such has not turned out to be the case, as the thermometer went down to 22° during the last week of the month, and the cold has been fatal to nearly all blossoms, away from the protection of walls, then open, and to fruit that was set. The effect, though feared, could not be seen then, but it can now, and is only too visible, as Pears on pyramids are falling in bunches without leaving one behind, although all sorts are not hit alike, as some have a sprinkling, and Louise Bonne has weathered through, and retains a considerable quantity. It is doubtful, however, if they will swell, as, though they look fresh at present, they show frost-bite by their irregular shape, and when so injured they generally crack, and have hard woody knots under the skin. Cherries and Plums on standards are all killed, and greatly damaged on walls, as these, like the Pears, are deformed, and it is a great chance if they get through the stoning, as no doubt the kernels are injured. Morellos do not appear to have taken any harm, and as they opened during the few hot days we had, they had set thickly, and are now looking fresh, healthy, and well. Gooseberries, though in nearly full leaf, felt the frost much, and the bushes in consequence are severely thinned, the ground being covered with fallen fruit, and a good deal of that left on is blistered, and eats hard after cooking. Currants of the red and white kinds are also hurt, and are dropping from the bunches, but, so far as can be judged at they have escaped that will be something, as, though the crop was plentiful last year, they have lead to the red and white kinds are also hurt, and are dropping from the bunches, but, so far as can be judged that will be something, as, though the crop was plentiful last year, they have leaven by during and bold. Teaches have shelter the flowers look strong and bold. Teaches have shelter the flowers

The Double-flowered Gorse (Ulex europæus fore-pleno).—This is at present one of the most ornamental and conspicuous plants in our nursety borders. For planting on aid portions of extensive rockwork it has few equals, the flowers, which completely hide the foliage, being in full sunshine beautiful beyond description. A. D. Webter.

Doubling of Daffodils.—The note of "P. B.," on p. 642, is hard to interpret. Assuming that the word "abscissus" is meant for "Telamonius" [It should have been, as our correspondent surmises, Telamonius plenus. Ep.], I fail to see how a little conference, at which Mr. Brockbank could show us the ripe seeds in the capsule of the N. Telamonius plenus, would advance our knowledge of the way in which single Daffodils become double. But if "P. B." really means to suggest that those who have found single Daffodils turn double shall be summoned to London to give evidence before a sort of Council of

Five because he, "P. B.," chooses to disbelieve their word, he greatly mistakes the English character, unless he intends to get an Act of Parliament passed giving inquisitorial powers against all who dare to assert so unorthodox a doctrine as that single Daffodils can be doubled. There is notbing on which an Englishman is more sensitive than about having his word doubted when he makes a statement of a simple fact which he knows to be true. It is very kind of some who care little about the matter to have come forward to say what they have done, and it is ungracious either to meet their statements with a "cross-examination before a conference—not the kind of lent tormentum which seems to me likely to elicit further formation. I am artaid it would effectually deter much voluntary evidence which more caulious advances might render available. C. Wolley Dod, Edge Hall, May 18. [It is requisite to point out, for clearness sake, that the single Daffodil, N. Pseudo-Narcissus, is said under cultivation to become the large Florence Daffodil or N. Telamonius plenus, and this latter is asserted to produce ripe seed. Ed.]

British Orchids.—I send for your inspection a flower-spike of the early purple Orchis (O. mascula) just to give you some idea of what this plant is like when well grown in good, damp, calcareous loam. Clumps containing, say, from a dozen to twenty of these plants, and all bearing spikes similar to that sent, are a grand sight, and for rockwork embellishment can favourably compare with any plant, native or exotic. If some of the ten-guinea Orchids sold at Stevens' had flowers equal to the enclosed their value would, I have no doubt, be doubled. The Brown Man Orchis (O. fusca), another handsome and rare native plant, is now in full blow, and, as you will see from the enclosed flowers, it is a species well worthy of the little trouble requiring to be expended on its cultivation. It succeeds best in strong chalky loam, and in a partially sheltered situation. A. D. Webster.

Effect of Frost.—The instance quoted by "A.D.," p. 650, is a striking illustration of the fact, that radiation is always greatest the nearer we approach to the surface of the ground; this is also easily proved by taking observations from a thermometer laid flat on the ground, and one suspended in the air a few feet above it. It is also well known that frost is generally more severe in valleys than on the tops of hills, &c., and this accounts for the young fruit on Gooseberry bushes being killed by the late frost at Stamford, while here, about 2 miles away and 80 to 100 feet greater elevation, we have a good crop. A curious instance of the uncertainty of frost in its effects was pointed out to me a few days since by Mr. Seth, at Grimsthorpe Castle; a batch of Hoteia japonica, growing behind a north wall out of reach of the sun was unhurt, while another batch growing on a west border was very badly affected. W. H. Divers, Burgaley.

Hale's Early Peach,—On Saturday, the 17th inst., we picked two fruits of the above-named Peach, one of which weighed $6\frac{1}{2}$ oz. They were the produce of a shoot or two of Hale's Early that arose from a few buds of that variety which we budded on a tree of A'Bee Peach in our early-house two years since. The fruit of A'Bee will not be ripe for another three weeks at least, as you will see from the one sent herewith Is not this rather a curious circumstance? I could understand a large branch—say one-third of a tree of another variety to maintain its natural earliness, but for a shoot not more than 2 feet long to do so, to me seems worth mentioning. The other Peaches in the same house as Hale's Early are, besides A'Bee, Early Rivers, Gorses Mignonne, and Violette Hātive Nectarine. None of them will be ripe for another three weeks at least. C. [A marked instance of the well known fact that buds of one tree worked on another, almost invariably, but not absolutely, retain their own individual characteristics. Eb.]

Long-Potted Lily Bulbs.—If there are any of your readers who may have potted their Lilies, say last October or November, or their imported stock, which generally arrives from Japan about the first week in December, and if either sorts, or a portion of them, have not formed stems, they may like to know there may still be hopes of success. To-day, going over a cold frame of some of the more tender kinds, I was rather surprised to find one imported L. auratum and one L. eximium, potted at the time mentioned, quite sound, and with a potful of roots, but no stem, they will be useful for succession. IV. J. Murphy,

The Doubling of Primroses.—I send herewith three flowers taken from one plant of common yellow Primrose which is from seed and grown for two years in our borders in nichly manured soil. They illustrate the doubling of flowers in a very remarkable manner. No. t has a flattened stalk, as if two were joined together, ten distinct ribs to the calyx, ten petals, two pistils and probably double the proper number of stamens—an exact double, or twin flower in one, and beauty. In No. 2 there is a more complete doubling, the thickened stalk being round and the two pistils united into one, the petals in two rows approaching the centre. No. 3 is triple, baving a three-ribbed stalk, a three-sized calyx all joined at the ovary, three distinct tubes and rows of petals, each corolla with its pistil and stamens complete, but all arising from one ovary. A stage or two further would bring us to the double yellow Frimrose. It will be observed there is no conversion of stamens and pistils into petals, but a doubling and tripling of each, from a single ovary. The process of doubling appears to me the same as in the Daffolis. Wm. Brockbank.

Peculiar Growth of a Portugal Laurel.—The anoexed illustration (fig. 132) represents a curious and uncommon growth of the Portugal Laurel, in which one of the lower branches entered the ground at a distance of 6 feet from the main stem and formed a tree which is now nearly equal in size with the original. The junction-branch is of equal diameter throughout—about 2 inches—and springs from the main stem at a distance of 4 feet from the ground. Both trees are over 20 feet in height, and grow close to one of the drives in the park here. A. D. Wehster, Penrhyn Castle, North Wales.

Tuberous Solanums.—Will Mr. Baker, whose very interesting remarks on Potatos all must have

It is a fact that in many features the American Potatos have shown in foliage and character of tuber marked divergences from our own older kinds, but there has always been found in them a lack of that mealiness and flavour found in our English sorts. Still farther, they have not shown themselves capable of resisting disease. Their chief good qualities are quickness in maturing and heavy cropping. It would thus seem that the species Fendler, which Mr. Baker mentions, is a form of S. tuberosum, and possessed no disease-resisting properties. Now that we have in some degree by cross-breeding blended the English and American varieties of garden Fotatos into one breed, we have found more disease-resisting power than formerly prevailed, and the best features of each are united. It thus happens that we have now the very finest and best strains of garden Potatos ever seen. I have grave doubts whether with our present means we can well improve upon what we have. Those who have made use of the American blood at the first found a new and most valuable parentage, but those who, coming later, will employ as parents only the products of these international crosses will but interbreed without creating any novel forms or producing any exceptionally robust strains. If, however, we could intercross our present descendants of S. tuberosum with the species Maglia or Commersoni, assuming such crosses to be practicable, there is no telling what results may produce. The experiment quoted by Mr. Baker as having been carried out early in the century by Mr. T. A. Knight, is interesting in so far as it shows that early Potatos are now, viz., fruitless. Still it is preferable, having



FIG. 132.—PECULIAR GROWTH OF A PORTUGAL LAUREL.

read with pleasure, kindly say where the species be names as specially suitable for cultivation in this climate, S. Maglia and S. Commersoni, cao be obtained? It would be useful to learo, also, something as to their habits of growth and probable most suitable forms or methods of culture. These species are doubtless interesting denizens of a botanic garden, but in the hands of practical cultivators they may become something more, and with careful culture and intererossing may give us a totally new family of Potatos. Certainly we have little reason to find fault with our existing garden family of this splendid esculent, except for the fact that it is so liable to disease. That, perhaps, is bad enough to nearly outweigh many virtues. Our present race of Potatos came early and late; they will keep good till Potatos come in again; they are wondrously prolific, and generally of first-class quality indeed, here, in Old England, we can boast of having the best Potatos in the world. If the Peronospora would let us alone we should have nothing to complain of, and certainly it has been very lenient in its effects during the past two years, so that we have had immense crops, and if the coming summer should go on as it bas begun, we shall have a big crop of Potatos again this year, and little disease. Still, these crops are the abundant products of exceptionally favourable seasons, and any year may see the return of a cold, wet, sunless summer, and with that a terrible outbreak of the disease. Then would come a big cry out for disease-resisting kinds, the which, if found in the products of new species, would be hailed with acclamation. Some years since a noted American asier of Potatos wrote to Mr. R. Feon that he believed the indigenous S. Fendleri to be one of the parents of the once popular American strain of garden Potatos.

regard to the large increase of kinds since Mr. Knight's time, that not a few early ones may be found that are bloomers and fruiters. If his experiment applied to the Ashleaf Kidney, it shows that it is very ancient, and farther, that its habit is now as it was then. Still it is very obvious that almost similar results might be obtained in any kiod that refused to produce bloom by gently removing the soil from the base of the plant, and picking off all tubers as they formed. None the less Mr. Knight's theory, pleasing one as it may seem, is rather upset by the fact that not any early kinds, but many late ones also, are bloomless and fruitless, even though robust. Thus, though International, a very robust kind, will produce bloom-buds, it never sets flowers or produces fruit. On the other hand, its own brother, Woodstock Kidney, which is not less robust and a good cropper, blooms and berries most abundantly. Schoolmaster and Magnum Bonum rarely set their blooms, whilst many weaker growers and good croppers will do so freely. Growers regard free berried kinds as nuisances rather than as blessings; still there is no actual proof that berries, or apples as they are called, are produced at the expense of the root crop. It is a received assumption, but remains yet to be proved. I would add that foliage gives little clue as to parentage, for one seed-hall, the product of a cross, will give in its progeny the most diversified leafage.

Who is an Amateur?—What is Trading?—The first question you deal with on p. 580 of your issue for May 3, and few reasonable men, or men gifted with the power to reason, will differ from you in your assumption, "that a cultivator who neither grows

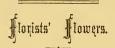
plants nor trades in them for gain—one, in fact, who, as a rule, loses by their culture—is undoubtedly an amateur," but as you go on to detail you get amongst thorns; and close with the suggestion, that the terms might be ahandoned were "classes made for the smaller growers from which the larger ones were excluded." No one again, I assume, can disagree with smaller growers from which the larger ones were ex-cluded." No one again, I assume, can disagree with your proposition, that "the clearest notion of an amateur is of one who, having some other vocation for means of livelihood, takes to the cultivation of flowers as a recreation and means of enjoyment." Your expression of respect for the "noble army of horticultural amateurs," and your assurance "that the trader also holds the body in high esteem, as the very back-bone of true horticulture in this country," will trader also holds the body in high esteem, as the very back-bone of true horticulture in this country," will also meet with general assent. But there are times, as the recent controversy has served to demonstrate, when irritating contentions may be set up, on plausible if insufficient grounds. Then in vexation of spirit we incline to seek refuge in some other path—but it will be well before we abandon a well beaten track, carefully to survey the proposed new course, Assuming, then, classes shall be made for the growers of larger and smaller stocks respectively. will that Assuming, then, classes shall be made for the growers of larger and smaller stocks respectively, will that method be free of difficulty? What shall be the limit of the smaller class? and how shall we determine the extent and condition of the stock grown on the date of exhibition? Let me try to illustrate this difficulty. An exhibition is fixed for the average date of a given area, within that area are growers of stocks varying in extent from 1000 plants to 300. But the sites whereon the plants are grown, and the conveniences and skill of the several cultivators affect not only the character, but the period of the bloom in a the character but the period of the bloom in a high degree. A, with a smaller stock, occupies a site, and has conveniences which enable him to mass his whole force on a given point (the date of exhibition); whilst B, with a larger number of plants, from cir-cumstances he cannot control has not more then cannot whole force on a given point (the date of exhibition); whist B, with a larger number of plants, from circumstances he cannot control, has not more than one-third of his stock in bloom at that time. How long in such circumstances would such an arrangement stand? And yet another question. How long, with competition tied and bound with such restrictions, would the specimens produced be illustrative of the higbest attainable merit? For we have ever to remember, whatever Little Pedliogton may suggest or desire, exhibitions are not designed for the exaltation of individuals or classes, but for the development, and determination by comparison, of horticultural skill, and the advantage of the many. The more I have thought over the subject, and the more my experience has been enlarged, the more I have been impressed with the wisdom of the maxim, when applied to specific exhibitions, of "Few classes and many prizes in each class," Let this be fairly realised in practice, oa as to give prizes to six-sevenths of the metriorious exhibits, and though there will be complaint of the weedy incapable, every generous competitor will be satisfied. We have not, however, as yet arrived at a solution of the questions, Who is an amateur? and What is trading? In the remarks I addressed to the special meeting of the National Auricula Society (Southern section), on the 22d ult., in the defence of my status as an amateur, I stated as my opinion that the line of demarcation between the amateur and dealer was to be found in the fact that the deeler, as his profession suggested, legitimately opinion that the line of demarcation between the amateur and dealer was to be found in the fact that the dealer, as his profession suggested, legitimately sought profit, whilst the amateur did not; the one not only reared plants but bought and sold them as a means of profit, whilst the amateur obtained no return, save as it might be his productions attained marked public favour. And on this ground I shall be prepared to take my stand. Then, what is trading? Practically as technically, we know this is buying and selling. Do these growers of certain specialities in the wide field of horrowleve hus in the reading and selling. Do these growers of certain specialities in the wide field of horticulture buy, in the trading sense of the term, the subjects due to their cultural skill? Is the seed I obtain from my Carnations and Picotees to be described as the result of purchase? And, going another step, it when a novel and desirable result has been attained from that seed I may not distribute the progeny to my brother lovers of the tribe other than progeny to my brother lovers of the tribe other than by the hands of a professional dealers, how long will there remain amateurs or professional dealers in the land? "Oh, but," rejoins one of that class of critics whose knowledge of affairs and views of life are about as limited as the boundaries of their parish, "you publish a catalogue, and that makes you a dealer." Verily I do publish a list as I have fortunate occasion. publish a catalogue, and that makes you a deart-verily I do publish a list as I have fortunate occasion. So also, if I may dare to cite so august an example, does Her Most Gracious Majesty, when her man of business notifies a periodical sale of yearling stock on her home farm. Will that suffice, or shall I go farther? Only that I fear to trespass unduly upon your space I could write much more, and if the why and because of my distributing my seedlings person-ally were published, I should have no cause to fear the verdict of the public. In conclusion, permit me to say, Little Pedlington notwithstanding, I will suffer no restraint to be imposed upon my right to dispose of my productions in the form I may find most convenient—nor any interference with my right to interchange with my brother growers, whether of advice or counsel, or the objects of our care; and in this determination I know I shall have the support of

every amateur interested. E. S. Dodwell, Oxford, May 19.

The Use and Abuse of the Incognito.—

Apropos of the paragraph by "K.," in your issue of the 10th inst., p. 618—a virtual repetition of a paragraph by "Old Exhibitor" in the Journal of Morticulture for May 1—affecting to recite a resolution of the National Rose Society on the subject of what an amateur may do—or not do—and asserting, "The decision of the above aamed Society, as many of your readers will remember, was that any person who printed or published a list of plants and circulated such list, or advertised it in any way, with the view of disposing of such plants was, de fact, a dealer or trader in them, and could not be regarded as an amateur." I beg you will allow me to say I have been in communication with Mr. Mawley, one of the Hon. Secretaries of the Rose Society, and with gentlemen of the committee, and have warrant for stating that, in the terms quoted, no such resolution has been before the committee, and that the character of the resolution and the division of the committee on the resolution and the division of the committee on the resolution and the division of the committee on the resolution and the division of plants, or of any specific condition. E. S. Dedweell, Oxford.

Pricking-out,—We often see this commendable operation of successful gardening done in a very shipshod way, especially by young men, and when we think how delicate are the roots of all young seedling plants, it is but small wonder that so many plants have crumpled-up roots and stunted growth at planting time. Most of the old fathers of the craft were believers in "pricking-out," but they did it carefully, keeping for the purpose certain portions of south, north, or west borders for the special purpose. Strong manures were all eschewed, as favouring unequal growth in the bed, and also as being positively dangerous for very young plants, the best materials for reviving a spent bed being sifted leaf-mould, or good sifted loam from a pasture. The beds having been bastard trenched in the late autumn, received this dressing when pricking-out had to be attended to, and not previously, the soil being levelled roughly, the additional leaf-mould or loam given, and then dug over with a spade to not more than 4 inches in depth. The soil was then lightly trodden over and evenly raked, finally slightly patted with the spade, and it was ready for anything. Seedling plants of Cauliflowers, Lettuces, Cabbages, Broccolis, Celery, are all of them the better for being pricked off. Supposing these to have been raised in warmth or under handglasses under the protecting south wail, the plaots must have stood too thickly, and must soon become drawn, so they must be pricked off, as being far too small to take care of themselves in the quarters or the borders. When plaots are from 1½ inch to 2½ inches high they are big enough to be taken in hand. The beds are best 4 feet wide, or even less, then all the work can be done from the alleys, and there is no more treading on the bed, which has a spoiling effect on the soil, that hinders the free growth of thes high they are big enough to be taken in hand. The beds are best 4 feet wide, or even less, then all the work can be done from the alleys, and there is no more treading on the bed, which



THE AMARYLLIS.—The flowering season is now practically over, although in a large collection a few plants, principally seedlings, will continue to produce flowers all through the season, or at least up to the end of August, when the plants ought to be at rest. At present the whole collection of flowering bulbs, whether of seedlings or named varieties, is about starting to make their second growth, and it is needless to say that, unless they make a clean, healthy, and strong growth now, they will not flower successfully ext spring. A small species of thrips seems to attack them in hot weather; it establishes itself in the centre of the plants just as it does in Orchids. It is easy enough to destroy the pest by fumigating with tobacco smoke. This should be done on three nights at

intervals of about four days; but we find it necessary to study the weather a little, and select if possible a calm night. It is a good plan to plunge the pots overhead in the bark bed, if there is convenience for doing so; if not, the plants will make their growth in any stove temperature, or on the shelves in a vinery. In either case they require shading at this season, as they are injured by exposure to the sun. The seeds will soon be ready for sowing; probably they are ripe in some cases. We sow them as soon as they are gathered, either in a hotbed or, what is better, in a heated bed in the forcing-house. As soon as the plants are well up they may be pricked out into 5 or 6-ioch pots, a dozen plants in a pot. It is not a good practice to be continually syringing Amaryllids; but they are benefited by an occasional syringing overhead, on the evenings or afternoons of fine hot days. If a house can be set apart for their culture, the temperature should be about 65° at night.

CHRYSANTHEMUMS .- It is easy enough to neglect the plants at this season of the year, when the bedding-out is in full swing, with plenty of work in every direction claiming daily attention, but getting the specimen plants into their flowering-pots is too important to be overlooked. This ought now to be should be potted early in June. We had not sufficient room under glass for our plants, and found it necessary to turn them out-of-doors; the cold frosty winds set in almost immediately, and checked their growth very considerably. The right thing to do is to mix up the potting soil about mid-winter and to place it in some corner of an outhouse or shed. If this is not possible, some shutters should be placed over it, to throw off the rains. Perhaps the majority of cultivators mix up their soil as they want it. In that case we would advise four barrowloads of good loam, one of decayed stable manure, one of leafmould, to be added to half a peck of crushed bones, and as much pounded oyster-shells; this will make a good compost for them, and will produce a vigorous growth and satisfactory bloom. When the hot, dry weather sets in aphis will probably appear on the young growths. Tobacco-powder is the best thing to destroy them, and by far the best way to apply it is to take the shoots in one hand, draw the leaves together a little, and with the other hand shake the powder over it with a pepper-box. Apply water rather sparingly to the roots after repotting; when the roots have run well into the new soil water may be applied more freely.

PRIMULAS .- P. Sieboldii .- The numerous varieties of this fine species must be treated as greenhouse "florists' flowers." They are not only interesting plants in the greenhouse during the month of April, but they are extremely beautiful. When the plants are placed in the greenhouse or conservatory at a considerable distance from the glass the leaf-stalks get very much drawn up, which tends to weaken the plants and also makes them more liable to be attacked by red-spider, which is sure to establish itself on the under-sides of the leaves. It can be kept down by syringing; we have placed the plants together in the Auricula-house, where they are freely watered and partially shaded from the sun; our endeavour being to keep the leaves in a healthy green condition as long as we can. The plants would also do well if placed in a cold frame behind a north wall. Primula sinensis in the form of named varieties should now be propagated. The double varieties are such useful and lasting winter-flowering plants that they ought to hold an honoured place in every garden. They are easily propagated if the plants are allowed to get rather dry at the roots and are freely supplied with light and air before taking the cuttings off. Each cutting should be taken off with as long a stem as possible, and be put in separately in fine sandy soil. I have propagated a good stock quickly by plunging the pots containing the cuttings in a bed in a hothouse, enclosing them in a handglass as well; but there is no doubt that the more slow process of a very gentle bottom-heat in an ordinary hotbed produces the most satisfactory plants. Here also the cuttings should be covered over with handglasses. Our seeds of the best single varieties were sown early in May, and they are now coming up. The difficulty of obtaining seeds from the best varieties seems to be greater every year. The packets are dearer, and contain fewer seeds; this is the inevitable result of high breeding, and no blame can be laid upon the

dealer, who has to supply the wants of the public at a fair profit to himself. The few plants we do get up are very precious, and require great care to bring them up to the flowering stage. They should be pricked out in light soil as soon as they are ready.

FUCHSIAS,-These useful plants are easy enough to grow if people will but give them ordinary attention, but this they do not seem to get in the majority of cases. The Cinerarias are nearly over, and as the hot weather sets in the Calceolarias soon begin to hang out signals of distress, we must therefore have Fuchsias and Pelargoniums to take their place; both are now showing for bloom. The Fuchsias were started in one of the vineries, and have now been removed to the greenhouse. Cuttings put in six weeks ago have now formed rooted plants, and will be grown on in pits to succeed those plants that were started early. We flower them in 5 and 6-iach pots during the months of July, August, and September. The plants are, of course, carefully potted and trained to form neat specimens thickly covered with coral drops. The plants are liable to be attacked both with red-spider and greenfly, but fumigating and syringing must be resorted to in good They also require rich turfy loam, with some crushed bones added to it to grow in. Besides the numerous fine varieties of the florist's type, the distinct and free flowering variety, Lord Beaconsfield, distributed by Messrs. Laing & Co., of Forest Hill, and Mrs. Rundle, sent out by Messrs. Cannell, of Swanley, are most useful decorative plants.

THE ABUTILONS.—These are now, thanks to Mr. George, of Putner, well within the charmed circle of what we designate florists' flowers; they are a class of plants that are not held in universal esteem, and truth compels me to say that until the last year or two I did not care to grow them. Tall, lanky plants with few flowers were the rule; now we have compact plants I foot or 18 inches high, clothed with foliage to the pots, the branches thickly draped with their large brightly coloured, well-formed flowers, They are the easiest grown of greenhouse plants. Cuttings put in during the month of August are now such flowering plants as I have described, while spring propagated plants are growing on freely to keep up a succession of bloom through the summer. J. Douglas.

DOUBLE PRIMROSES, &c .- From Messrs. James Cocker & Sons, Aberdeen, there has come to us lately a truly beautiful lot of double Primroses and other charming spring flowers, the fine fresh blooms showing how admirably the climate of Aberdeen suits them, and, still farther, how beautiful they may be in the North when here, in the not too sunny South, ours are long past blooming. Of the Primroses, No. 1 shows the Double White, as commonly grown, in fine form; and No. 2, labelled "Double Peach," seems identical with what we have hitherto known as the Double Blush-it is a white, prettily tioted with lilac. No. 3, called the Old Double White, is a smallish flower, densely petalled, evidently lacking vigour. No. 4 is the true Old Double Yellow, and not Sulphur, which Messrs. Cocker have named it. This early sulphur is not in the collection, and is very distinct, having smooth, glossy foliage and pale creamy flowers. This double yellow before us has large dented leaves, and the flowers are very fine. No. 5 is a moderate sample of the recently named Cloth of Gold. It has, perhaps, a little more colour than No. 4, but hardly seems a more durable variety. No. 6, Double Red, is to us a new and distinctive kind, flowers large, and double, in colour reddish-lilac. It looks like a red sport from the white, is 'pretty, though not striking, and not to be confounded with another kind we have here in the South, the old Scotch Red, which is of a much deeper hue of colour. No. 7 gives us the true form, as recognised here, of the old Double Purple, a beautiful kind, the flowers really maroon-violet, and having white specks on the petals. No. 9 is our beautiful favourite the old Double Crimson, so rich its clothing of velvety maroon-crimson; and No. 8 the pretty rosy-purple semi-double Arthur Dumollin or platypetala plena. No. 10, a new variety, not named, is of a sulphury-buff, fine, and not of good quality.
We should hardly find space for such an inferior kiod. No. 11 is our favourite Double Lilac, so universally grown. No. 12, Croussi flore-plena, is a large loose kind, rather coarse, and of a reddish-mauve hue; and No. 13 is the beautiful kind we

know as crimson-purple, but which here is called "purple" only. It is of a reddish-purple hue, won-derfully free, and often blooms in trusses like a Polyanthus. No. 14 is a truss of the ancient double crimson Polyanthus, called sometimes King Theodore; and No. 15 is another double Polyanthus, the flowers of the purple of the polyanthus and the polyanthus are the polyanthus. No. 15 is another double Polyanthus, the flowers of which open badly, and are of a reddish ground, much flaked and edged with yellow; we should prefer to allow this kind to remain as oow, uonamed. No. 16 is not, as marked, Jackanapes, but the true old Jack-in-the-Green, of which now there are many better forms from seed. No. 17 is a remarkably striking and good shaped Polyanthus, of an intense maroon-black colour, but wanting a lemon eye to make it perfect, otherwise it is a beautiful variety, the name of which is not known—perhaps it never has been named. No. 20 is the double black Auricula Othello; and No. 21 the sweet-sented double yellow Auricula, called in the South Yellow Prioce. Figally, No. 18 is a fine flowered Primula, apparently pubsesens; and 19 is a finely flowered form of P, elliata purpurea.

Reports of Şocieties.

Edinburgh Botanical: May 8.—The Society met in the class-room, Royal Betanic Gardens, Mr. W. Be boyd, President, in the chair. The Treasurer read the annual report, which stated that the income for the past year had been [185] 111, 112, and the expenditure [121, 124, 54], thus leaving a balance of [60] 171, 64, to the credit of the Society. Professor blockson then read

Mr. Symington Grieve, in a paper on "Some Statistics regarding the Topographical Botany of Scotland," said he had gone over some 20,000 or 30,000 plants in Scotland, given by Mr. H. C. Watson in his latest edition of Topographical Botany. He then gave statistics as to each of the forty Watsonian "vice counties" in Scotland, and described a number of plants in each district to show the present state of botanical knowledge with regard to field botany. In making several suggestions as to perfecting the knowledge of the distribution of plants in Scotland, he said that a camp might be formed, supplied with tents and other apparatus, and members of the Society sent out to those parts of Scotland out hitherto worked by botanists.

Mr. R. Bullen cave in his report on the temperature.

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Mr. R. Bullen gave in his report on the temperature, regetation, &c., as recorded in the garden of the Royal Botanic Institution of Giasgow, April, 1884. The highest day temperature registered was 58°, on the 3d and 4th, the lowest 42°, on the 23d. The highest meant remains a strength of the month. A dry seed-sowing time is always accepted as a good omen, alke for the gardener and farmer; this was especially desirable this season, owing to the water-soaked condition of the soil. We have had a longer succession of dry weather, accompanied by the proverbial east wind, than usually talls to be recorded, and which has had the effect of not only retarding the germination of many seeds, but of materially checking the development of early leafing trees and shrubs, and giving the buds of Juter kinds a dormant look. Recently transplanted her baceous plants look pitiable, and the artificial watering of such looks much like love's labour loss. A short but heavy halistorm passed over here to-day, the 30h.

Mr. R. Lindsay gave in his report on "Vegetation at

Mr. R. Lindsay gave in his report on "Vegetation at the Royal Botanic Garden for April, 1884," Through-out the month of April there were generally low night temperatures, with bright sunshine during the day. The

The following were amongst the plants in flower ex-bibited from the garden:—

Acemone Robiusoulaua Androsace coronopifolia Cotyledon Bollei Darlingtonia californica Doronicum Draytoneose Erysimum rupestre Erica hyberuica coccioea Erythronium giganteum Hutchinsia alpina , petreaa

Hutchnosia appua
, petreza
lberis Tenoreaa
Muscari armeniacum
Muscari armeniacum
Menziesia empetriformis
Narcissus Bulbocodium
', conspicuus
', conspicuus
', Gralesii
', juncifolius
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Primula acaulis (do

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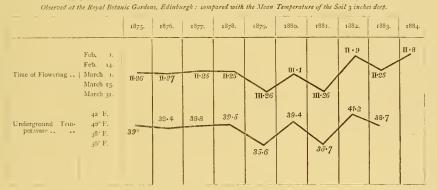
ties)
, capitata
, mollis
, mulettiana
, involucrata
, rosea grandiflora
Gentiana verna
Saxifraga MacNabiana
, virginiensis
Statice iocaoa
Silene acaulis Silene acaulis
Scilla lilio-hyaciothus
Lychnis lapponica
Reseda odorata fi.-pl.
Scilla amœna
Petrocallis pyrenaica
Veronica diosmælolia
Sarracenia flava
Trillium grandiflorum

Primula ciliatia (many varie-

The President exhibited cut flowers of Primula Sie-boldi, varieties of several fine species of Narcissus. I, Milne, Esq., Kevock Tower, Lasswade, sent sprays of Lanrustions in fine fruit. From Mr. Campbelli, Ledaig, Argyleshire, came cut flowers of various plants from the

Reading Horticultural: May 15,—While some borticultural societies have deteriorated during the past few years the Society of Reading has entered upon a prosperons career, which is shown from the fact that it has a good subscription list, and a handsome reserve fund, and that this year it has not only been able to augment many of its leading prizes, but has also added 3d prizes to many classes. In addition, with unusual promptitude, the prize-money is paid on the afteroon of the show day, so that it is no wonder that not only do local exhibitors give their best assistance to the committee, but some of metropolitan reputation are attracted

ANNUAL AVERAGES OF THE TIME OF FLOWERING OF FORTY PLANTS,



a note by Professor John Clehnd, Glasgow, on the death of Professor Allen Thomson, formerly a member of the Society; after which the President read a communication on a variation of Asplenium germanicum. He noticed several stations where this and A. septentrionale were found together, but never A. ruta nutraria. He also exhibited a fine specimen of Pinguicula alpina in flower.

Mr. Wr. C. Crawford read a paper on "Phytophenological Observation, the Budding and Flowering of Plants, the Ripening of Fruits and the like, in Relation to Climate and Weather," The number of such observations regularly made is immense, and an attempt is being made in Germany to co-ordinate them and give them a scientific value. With this aim phenological maps have been recently issued, showing by contour lines places where vegetation is equally advanced, similar to isothermal lines. These phenological maps have been recently issued, showing by contour lines places where vegetation is equally advanced, the former do not seem to show much that may not be inferred from the latter. Attention was then directed to some very careful researches of Professor Hoffmann, of Giessen, on the flowering of plants, in which he noallyses the phenomenon into its separate factors, such as the mean temperature of the sir, sunshine, rainfall, temperature of the soil, &c., and shows that the most important of these is underground temperature, the other factors going largely to make it up. Graphic curves of averages of the times of flowering of forty plants regularly observed at the Royal Botanic Gardens during the years were exhibited, and alongside these was shown a curve of the average temperature of the soil during the same period; the two curves were seen to run exactly parallel. These considerations lead to the conclusion that as long as no more careful methods are followed than a present, such as methods of taking large averages from selected plants, observations and records of the annual progress of vegetable and the professor of the conclusion and pr

cold easterly or north-easterly drying winds which prevailed almost cootinuously throughout the month, and the absence of anything like drenching rain, together with a succession of frosty nights at the end of the month, seriously retarded vegetation. The transfer of the seriously recorded vegetation. The transfer of the seriously reading occurred on the 1st, 28°; 2 rsrs, 27°; 293, 27°; 25th, 27°; 28th, 28°; called vegetation where the most severe month of the season. The following are the aggregate amounts of frost registered during each month:—October, 3°; November, 2°; December, 3°; January, 20°; February, 24°; March, 29°; April, 37°. Total amount for season, 153°. Owing to the advanced condition of vegetation the low temperatures of April have done great injury to fruit trees and bushes in many parts of the country; much more damage, however, appears to have been sustained in the South than in the North. Almost the only plants damaged in the garden are Astilbe and Dielytra; young leaves of Horse Chestnut and Roses are also slightly damaged. cold easterly or north-easterly drying winds which pre-

and Koses are also signify damaged.

During the month the rock garden was very attractive, owing to the numerous alpine and herbaceous plants in flower; 103 species and varieties came into bloom for the month, as against 108 for the same month last year, making a total of 225 since January 1, as compared with 210 for the same period last year. The most conspicuous plants which flowered were:—

Andromeda tetragona Anemone Robinsoniana Menziesia empetriformis Narcissus rupicola Primula rosea , cortusoides Rhodora canadensis Podophyllum Emodi Leucojum æstivum Erythronium giganteum

Aubrietia Headersoai Bryanthus erectus Hutchinsia alpina Rhododendron chamæristus Tussilago alpina Pyrus Maulei Trillium grandiflorum Primula Sieboldi Tulipa pulchella Arenaria balearica Arenaria balearica Trollius americaous Phlox aristata Rhododeodron glaucum Helonias bullata Iberis Tenoreana Alyssum saxatile Corbularia Graelsii Arnebia echioides

to the Reading shows. This was conclusively shown on the occasion of the spring show within the Abbey ruins on the 15th inst.; the permanent site within the Abbey ruins, with its grassy shoes and winding gravelled walks, perhaps unequalled in the provinces as the place for a show, was full to repletion, and with contributions generally of a very satisfactory character. There was an abundance of flowering plants, as there should be at a spring show, but with imposing touches of foliage to diversify the arrangement, which was as usual in the hands of Mr. W. Phippen, and remarkably well done. As is generally the case, the band was stationed in the Forbury Gardens, through which the many visitors passed to the Abbey ruins, and these were charmingly gay with the hues of spring flowers.

these were charmingly gay with the hues of spring flowers.

Taking flowering plants as the leading features, while some were very good, the Gloxinias were superlatively fine; the six specinens shown by Mr. Baskett, gr. to W. J. Palmer, Esq., Reading, were extra large in size, splendidly grown, and abundantly flowered—and such flowers too! They descreted a money prize far beyond what was allotted to them in the schedule. Mr. Farey, gr. to C. Stephens, Esq., Reading, was a good 2d. Calcolarias were, as they usually are here, numerous and very good; rice specimens of good size, clean, and grandly flowered. Here also Messrs. Baskett and Farey took 1st and 2d places. Roses in pots were a good feature, Mr. J. F. Mould, nurseryman, Pewsey, being 1st with a very good lot; Mr. Tranter, Upper Assenden, being 2d. Mr. Lockie, The Gardens, Oakley Court, Windsor, had the best four; Mr. Easkett being 2d. Fuchsias were better than we generally see them here; and it may perhaps be stated in extensation of their moderate character, that it is early in the season for them. Mr. Summer, gr. to J. H. Millard, Esq., Reading, was 1st, with a style of plant that showed off the specimens to the best advantage, Azaleas—small in size but carefully grown and flowered—lit up the show with bright colours: the best six came from Mr. Lockie, being in 8-inch pots and very uniform. The leading varieties were Warrior, Lady Scott, Model, Eclatante

and Mdlle. Verschaffelt; I. Armitage, gr. to W. Clarke, Esq., Reading, came in a good 2d; and Mr. Baskett 3d. Messrs. Lockie and Mortiuner, gr. to Major Storer, Purley Park, were severally 1st and 2d with four specimens, and they were deserving of high praise. In Mr. Lockie's group Roi d'Hollande, grandily coloured; Keine des Pays Bas and Duchesse Adelaide de Nassau were the best. Pelargoniums were, as usaul, ever effective, especially the nine in 8 inch pots shown by Mr. Ashby, who is the champion grower of the district. The plants were even, foliage perfect, clean, and admirably flowered, the varieties old but well adapted for the purpose—Crimson King very bright and striking. No fancy varieties were forthcoming: unfortunately the cultivation of these appears to be abandoned in this district where they were formerly so well swas staged every fine group of hardy Rhododendrons was staged every fine group of hardy Rhododendrons was staged every fine group of hardy Rhododendrons was staged in the show.

The class for twelve stove and greenhouse plants in flower brought two renowned competitors, viz., Mr. Janes, nurseryman, Lower Norwood, and Mr. E. Tudgey, Waltham Cross, but the former was well ahead, having good examples of Anthurium Andreanum, with fourteen large spathes, and this specimen appeared to be an object of great interest to the visitors; a huge Erica cavendishiana, E. Lindleyana, very good; Clerodendron Balfourianum, &c., Mr. Tudgey had a very fine Erica Cavendishiana, a good E. ventricosa, Clerodendron Balfourianum, and two others. Mr. Mortimer was a good 2d, having a very fine example of Tabernemontana coronaria, but scarcely class, of the proper store of the store of the proper store

All. James coming 2d with a capital example of Erica depressa.

At the south end of the tent was a very fine group of foliaged and flowering plants arranged for effect, filing a large space, and shown by Mr. W. Less, gr. to Mrs. Marsland, The Wilderness, Reading. This, though Marsland, The Wilderness, Reading. This, though the most attractive feater of the propulsion of the most attractive feater of the most award of the highest value was made to it.

Orchids made a charming feature, and here Mr. James was 1st with three plants, having a fine Odontoglossum excillarium with more than three dozen flowers [Lefia purpurata, finely bloomed; and a good piece of Dendrobium nobile. Mr. Mortimer came in 2d with Dendrobium the most propulsion of
flowers each; Mr. James was 2d, with a fine piece of Cattleya Mendelli.

Some fine specimens of foliage plants were staged, though they were generally in company with small and weak specimens. Thus it was that Mr. Mortimer came in 1st with six capital specimens, staging in fine condition Pandanus Veitchii, Croton majesticus, and C. Weismanni, both in fine condition; alocasia Thibautian, with some splendid leaves; a fine piece of A. metallica, and Yucca alolfolia variegata. Mr. Tudgey was placed 2d, having two huge Cycads, a Pritchardia pacifica, and some small stuff. Mr. James came in 2d.

Ferns were admirably shown; indeed, it may be said that good examples of these are a standing feature of the Reading exhibitions. The best group of fifteen exotic Ferns and Mosses, which is a class new to the schedule, came from Mr. Mortimer, all being temarkably good, Adiantums being a strong point. Mr. Mapo, gr. to Miss Moore, Reading, came in next, with a smaller lot. The groups of six were finely shown, and here flow. The groups of six were finely shown, and here flow. Mr. Baskett was 1st with four Ferns, and four fine-foliage plants also. Some good Palms were shown by Messrs. James and Tudgey in the class for three plants.

Cut flowers comprised Roses, stove and greenhouse.

shown by Messrs. James and raugey in the class to three plants.

Cut flowers comprised Roses, stove and greenhouse, and hardy cut flowers, Pausies, &c. All were very pretty, but they contained uothing requiring special mention. A Certificate of Merit was awarded to Mr. Read, gr. to T. Wilder, Esq., Purley Hall, for a very fine strain of double German Wallflower.

Table Accordations, though put quite so numerous as

fine strain of double terman Wallflower.

Table decorations, though not quite so numerous as usual, were yet very good. Miss Phippen was the only exhibitor of three vases, done, as usual, in her best style; and in the class for two vases of wild flowers Miss Cole was 1st, Miss Phillips 2d, and Miss Stransom 3d. These were very pretty indeed. Mr. Phippen had the best bridal bouquet, and also the best three button-balos.

holes.

In the class for the large group of plants Mr. Phippen was 1st, and Mr. James 2d, but they were not up to the usual Reading form. In the class for the smaller group there was a very brisk competition, Messrs. Woolford, Hatch, and Summer taking the leading prizes in the order of their uames. A disposition to overcrowd was observed in most of them.

Some good black Grapes were shown by Mr. Howe, gr. to Sir R. Sutton, Benham Park; Messrs, Ashby, and Baskett. In the class for white Grapes, Foster's Seedling was shown, Mr. Ashby being 1st, and Mr. Baskett

2d. Mr. Mortimer had the best dish of Strawberries, showing Sir I. Paxton in fine condition; and Mr. Howe had an excellent dish of White Marseilles Figs.

Of vegetables there was an excellent display for the season. In this department the chief interest centred on some special prizes given by Messrs. Sutton & Sons for Potatos and Cucumbers. Among the latter Purley Park Hero was finely shown by Mr. Mortimer, as perfect a Cucumber as one could well desire to see; Challenger and Royal Wonder came in 2d and 3d. In the class for new kidney Potatos, Sutton's Ashleaf and Sutton's Ringuleader were severally 1st and 2d; in that for round Potatos, Early Market and First and Best were in good form.

form.

Mr. C. Turner sent from Slough a valuable collection of Pelargoniums, Carnations, cut Roses, and alpine Auriculas, to which a special award was made. First-class Certificates of Merits were awarded to Tree Carnations Mrs. Maclaren, Hector, Rults, Ruby, and Mr. Llewelyn; and to alpine Auriculas Mrs. Ball, Homer, and Eclipse. The same award was made to the Excelsior Lawn Mower, shown by the Chadborn and Caldwell Company, Upper Thames Street, E.C.

Royal Botanic Society: May 21.—This, the first large exhibition held this season, brought together an unusually large number of well-grown, and, in some instances, magnificent plants. Worthy of especial commendation were the Clematises of Messrs, G. Jackman & Son, of Woking, the Orchids by well known cultivators of these favourite plants, Messrs, W. Paul & Son's Roses, and the fine Indian Azaleas of Mr. C. Turner, Mr. Cypher, and others. These were the centres of attraction, but the show, as a whole, was admitted by the habitars of these gatherings to be the best that has been witnessed for some years past.

STOVE AND GREENHOUSE PLANTS.—The nurserymen's competition for the best twelve stove and greenhouse plants was a well-contested one, rst, Mr. J. Cypher, of Cheltenham, with Ixora Williamsii, a well-proportioned plant; Anthurium Scherzeriaaum and the variety Cypheri, Darwinia ulipifera, Erica Cavendishiana, Clerodendron Balfourianum, Pimelea Hendersoni, Drncophyllum gracile, well flowered; and some Azalea indica in fine bloom. 2d, Mr. H. James, Castle Nursery, Lower Norwood, who had good plants of Erica Liudleyana, Anthurium Scherzeriaaum, and Azalea Ingrami, beautifully bloomed; 3d, Messrs, T. Jackson & Son, of Kingston. In this collection were to be noticed a well flowered Rhododendron Dalbousianum, and several Ericas.

flowered Rhododendrou Dalbousiauum, and several Ericas.
For ten stove and greenhouse plants, competed for by amateurs.—rst, Mr. W. Chapman, gr. to J. Spode, Esq., Hawkesyard Park, Rugely, in whose collection were excellent Ixoras, Aphelexis macrantha grandiflora, Tremandra verticillata, and Darwinia tulipifera, a grand example, and which was adjudged the winner of the Veitch Memorial Prize and \(\frac{1}{2} \); ed, Mr. C. Rann, gr. to \(\frac{1}{2} \) W. Verten, Esq., Handcross Park, Crawley, who staged a beautiful Anthurium Scherzerianum; a fine specimen of Tetrathea cricoides, and a most noticeable well-flowered example of Cytissus Everestianus; 3d, Mr. J. Child, gr. to G. Bull, Esq., Garbrand Hall, Ewell. For six stove and greenhouse plants (anateurs).—rst, Mr. W. Chapman, with plants, conspicuous amongst which were Erica Cavendishiana, Aphelexis macrantha, and Aerophyllus venosum. In the class for nurserymen, complements.—rst, Mr. J. Cypher, in whose lot were excellent examples of Bougainvilles glabra, Francisces eximin, and Erica depressa; 2d, Mr. I. F. Mould, Pewsey, Wilts, who had good plants generally: especially to be noticed were Ixora Regina, Pirnelea Hendersoni, and Boronia pinnata; 3d, Mr. Tudgey, nurseryman, Waltham Cross.

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pinnata; 3d. Mr. Tudgey, nurseryman, Waltham Cross-ORCHIDS,—The premier prize for twelve Ortchids was worthily awarded to Mr. J. Powell, gr. to W. E. Brymer, Esq., M.P., Ilsington House, Dorchester, whose beautifully bloomed lot of generally large-sized plants attracted great attention from the visitors. A Cattleya Skinneri of a brightness of colour rarely seen, and whose diameter was quiteg feet, literally smothered with large perfect flowers. Dendrobium tobile was even larger, Calauthe verattfolia had eleven tall spikes, Dendrobium putchellum full of its semi-translucent rosy flowers, and, which is so rarely seen, doing well; Odonieglossum citrosnum, Thuma Marshalli, Dendrobium Falconeri, a Lycaste Skinneri with a dozen blooms, and a Dendrobium Jenkensi composed the cit. Catt., gr. to W. Cobb, Esq. Silverdale Lodge, Sydenham, who had fine plants of Oncidium Marshalliananum, Dendrobium thyrsiflorum, a plant of Cypripedium caudatum with twenty bloomed Cattleya Mossie, and C. Mendelli; an enormous Cymbidium Lowii, with six very large spikes; a particularly large and brightly coloured Odonioglossum vexillarium. In this competition a Silver Medal was taken by Mr. C. I. Salter, gr. to J. Souubgate, Esq., Selborne, Streatham This was a much admired collection, containing as it did, some capitally grown and flowered specimens, namely, a Vauda Denisonii, with a dozen blooms; a This was a much admired collection, contraining, as it did, some capitally grown and flowered specimens, namely, a Vanda Denisoui, with a dozen blooms; a Dendrobium thrysiforum, with four massive spikes; a Dendrobium thrysiforum, eirosmum, carrying seven large and strong spikes; Dendrobium lamesianum, very full of flower; an O. vexillarium, brightly coloured and of unusual dimensions; and several Cattleyas and Masdevallias. A Silver Medal was awarfaed to Mr. James Douglas, gr. to F. Whitbourne, Esq., Great Gearies, Ilford, for a dozen containing well bloomed examples of Odontoglossum Roezlii album, Cypripedium villosunt, Dendrobium Farmeri, the bright Epidendrum vitellinum majus, Cattleya Mossize (from La Guayra), beautifully

flowered, carrying eighteen large blooms. A Large Bronze Medal was awarded to Mr. J. Child for a good dozen plants, which included a fine Brassia maculata, Dendrobium Farmeri, Leela purpurata pallida, Vanda suavis, a fine-leaved, large plant; ind a Dendrobium uobile, covered with bloom, and which measured a yard in diameter. 3d, Mr. H. Heims, gr. to F. A. Philbrick, Esq., Q.C., Öldfield, Bickley, who had an immense example of Sobralia macrantha splendida, which, luckly, had opened its evanescent blooms in the nick of time; also a pretty piece of Ondidum concolor.

had opened its evanescent blooms in the nick of time; also a pretty piece of Oncidium concolor.

In the nurserymen's competition with twelve exotic Orchids—Mr. H. James was 1st; his exhibit contained good examples of Cattleya Mendelli, Cypripedium barbatum grande, Odontoglossom vexillarium, Dendroblium obbile, Aerickes Fieldingi grandis; 2d, Mr. Jas. Cypher, who had excellently flowered plants ot Dendroblium thrysiflorum, D. noble, and D. Wardianum; 3d, Messrs. T. Jackson & Son, Kingston.

ROSES.—In the nurseymen's competition for the best nine Roses in pots, Messrs. Paul & Son, The Old Nurseries, Cheshunt, were 1st, with big well-bloomed plants, the best of which were Chas, Lawson, Céline Forestier, Madame Victor Verdier, Madame & St. Joseph, and Cheshunt Hybrid. In the competition for the best twenty Roses in pots, rst.—Mr. C. Turner, Slough, whose Camille Bernardin, Innocenta Pirola, Céline Forestier, were very nice plants. ad, Messrs. Paul & Sou, The Old Nurseries, Cheshunt.

AZALEAS,—In the class for six greenhouse Azaleas, amateurs—1st, Mr. J. Child, with pretty plants of Magnet (a cherry-red) Keine des Pays bas, Model, Concinnum, a good rosy-purple, Duc de Brabant, and Barclayana. 3d, Mr. G. Wheeler gr. to Lady Louisa Goldsmith, St. John's Lodge, Regent's Park. In the nurserymen's class for the best six Azaleas—1st, Mr. C. Turner, who bad magnificent plants of Duc de Nassau, Chelsoni, Comtesse de Flandres, Reine des Fleurs, Madame Cananart d'Hamale; 2d, Mr. J. Cypher, with fine Cedo Nulli and Hercules. In the open competition for the best twelve greenhouse Azaleas in not less than six varieties—1st, Mr. C. Turner, with Apollo, Jean Vervaner, Mrs. Turner, Roi d'Hollande, Roi Leopold, Cordon Eleu, Mons, Thibaut, and others; d., Mr. H. Eason, gr. to B. Noaks, Esq., Hope Cottage, Highgate; 3d, Mr. H. James. For the best six Azaleas shown by amateurs, 1st, Mr. J. Child, Garbrand Hall; 2d, Mr. Wheeler; 3d, Mr. H. Eason.

CAPE HEATHS were in all cases well shown—none over-large or unwieldy, and all beautifully bloomed. In the open class for the best six Ericas, 1st, Mr. E. Tudgey, Exote Nursery, Waltham Cross, who staged E. Cavendishiana, E. cocinea minor, E. eximia superba, E. affinis, E. tricolor, &c.; 2d, Messrs, Jackson & Son; 3d. Mr. Cypher.

In the PELARGONIUM competion, although the fashion of the day has relegated them to a low position, there were some excellent plants exhibited by well-known growers. The amateur competition for the best six show sorts, placed 1st, Mr. F. J. Hill, gr. to H. Little, Esq.; 2d, Mr. J. Wiggins, gr. to W. Clay, Esq.; 3d, Mr. Griffin, gr., Gothic Lodge, Sydenham.

The nurseryneo's competition for the best six show Pelargoniums resulted in Mr. Turner being placed 1st, Mr. Cypber 2d, and Mr. J. Odell 3d; and in the open class for six fancy Pelargoniums Mr. Turuer 1st, Mr. J. Hill 2d, Mr. Wiggins 3d.

Hill 2d, Mr. Wiggins 3d.

Botanical Certificates.—To the New Plant and Bulb Company, for Acer palmatum roscum and A. palmatum aureum. To Messrs. R. Ker & Son, Liverpool, for Ficus elastica albo-variegata, a plant of a yard high, the mature foliage showing the ereamy variegation, and a boxful of recently struck plants, showing the fainter markings on young leaves. To Messrs, sander & Co., St. Alban's, for Odontoglossum elegans superbissima, a very fine form with beautiful markings and extra large. To Mr. C. J. Salter, gr. to J. Southgate, Esq., Selborne House, Streatham, for Cattleya Mendelli marginata, having the lip, which is highly coloured, margined with rosy-criason. To Mr. H. James, Caste Nursery, Lower Norwood, for Odontoglossum mulus and O. polyxanthum. To Mr. Jas. Cypher, purseryman, Chelenham, for a fine variety of Anthurium Scherzeriasum, named Cypherij, a flower larger than that of the type; and Cypripedium Rôbelenii. To Mr. B. S. Williams, of Upper Holloway, for Cypripedium ciliolare.

larger than that of the type; and Cypripedium Robelenii. To Mr. B. S. Williams, of Upper Holloway, for Cypripedium ciliolare.

Floral Certificates were granted for the following plants:—To Mr. J. Hill, gr. to H. Little, Esq. Hillingwish and the control of the third that the control of the c

—plants that were in most instances fully 5 feet high and proportionately broad. They were full of large symmetrical bloom, and were greatly admired for their beauty. The sorts were Madame van Houtte, Princess of Wales, Wm. Kennet, Impératrice Eugénie, Duchess of Edinburgh, Fairy Queeo, Purpurea elegans, Duke of Norfolk, Patens floribunda, Blue Gem, Mrs. Hope, and a few others rather less distinct.

The EXOTIC FERNS shown by amateurs were particularly happy examples of useful proportioned plants that any one possessing an ordinary sixed house cangrow. 1st, I. Douglas, in whose lot were admirable examples of Adiantum concinnum latum, Dicksonia antarctica, D, fitorosa, and D. squarrosa; 2d, Mr. G. Wheeler, with smaller plants; 3d, Mr. R. Butler, gr. to H. H. Gibbs, Esq., St. Dunstan's, Regent's Park, who had a very nice piece of that handsome Fern, Microlepis hirta cristata.

very nice piece of that handsome Fern, Microlepis harta cristata.

Fine-foliage plants were rather abundantly shown—a good feature where, as in the case of shows in a tent, relief is desirable, on account of the amount of bright colour prevailing amongst the flowering portion. For the best six.—1st, Mr. C. Rann, with fine Areca sapida, Cycads, Isatania borbonica, Croton undulatus, &c.; 2d, Mr. G. Wheeler; 3d, Mr. R. Butler, In the nurserymen's competition with an equal number.—1st, Mr. Cypher, with fine plants, chiefly of Kentias, Cycads, and a Dasylirion actorichum. For the best twenty-four Gloxinias in pots.—1st, Mr. H. Eason, whose plants were above the ordinary size, of erect habit, and having good foliage; 2d, Mr. C. Rann, for rather smaller plants, also creet in habit.

Mr. Douglas took the prize for alpine plants, which

were above the ordinary size, of erect most, and naving good foliage; ed, Mr. C. Rann, for rather smaller plants, also erect in habit.

Mr. Douglas took the prize for alpine plants, which having been placed by the management in a hot sunny corner, were nearly roasted by the afternoon. Messrs. Cross & Steer, nurserymen, Salisbury, showed their new perpetual flowering Fink, Louisa Ashburton Mr. Hooper, Vine Nurseries, Widcombie and their new perpetual flowering Fink, Louisa Ashburton Mr. a collection of the welkeded; leasts, and the steer of the welkeded; leasts, and the steer of the welkeded; leasts, and the steer of the welkeded and the steer of the welkeded; leasts, and the strain of Mimulus, named Queent's Prize, and also Pansy blooms; and Mr. Wiggins a seedling Pelagonium of a new type. A large Bronze Medal was awarded of Mr. D. White, gr. to Mrs. Farnel Watson, Redded of Mr. D. White, gr. to Mrs. Farnel Watson, Redded of Mr. D. White, gr. to Mrs. Farnel Watson, Redded and of a bright hue generally. A collection of plants, consisting of both stove and greenhouse varieties of the most varied description, were shown by Capt. Halford Thompson, Claremont, Exeter, as having been grown in moss, with possibly extra help from manure in some form. The plants were fairly healthy in appearance, but were sadly deficient in bloom, and we think it will be found difficult to give them the necessary rest, as moss so not easily kept in a medium wet or dry condition—it is either too wet or too dry. If this difficulty can be got over, the system would be useful for window gardeners in towns, who do not find it either cheap or easy to get proper mould. The exhibitor was awarded a Bronze Medal.

Miscellaneous Plants were largely shown, Mr. B. S. Williams, Victoria Nurseries, Upper Holloway, contributing a large collection of Ortchids that were nicely show off by a free intermixture of Adiantums, small Palms, Cyperus, and Mosses. The plants were not of a large size, but there were many rarties, and others difficult of culture or seldom seen, such as Cyprighting of the Cyperus, and Mosses. The plants were mot of a large size, but there were many rarties, and others difficult of culture or seldom seen, such as Cyprighting of the Cyperus, C. Swannaum, and C. selligerum, C. ciliolare, Masdevallia Chelsoni, M. Harryana Iliacina, and M. Veitchii grandifiori Arierise and Continguation of the Cyperus ocellata, a great number of Odontoglossum-house; Calanthe Dominiana, Cattleya Walkeriana, Ceologya ocellata, a great number of Odontoglossums and Ocidiums, including O. nigratum, a rare species; I Trichopilia crispa, and the Dalkeith variety of Vanda tricolor. The exhibitor was awarded a Small Silver plit Medal. Messrs. I Sander & Co., St. Albans, sent a varied and interest importation. These had been grown culties a hardily as greenhouse plants, were beautifully bloomed, the spikes being pumerous and strong, and the markings and perfect form of most of them were remarkable in no small degree. A Small Silver Medal was awarded them. Messrs. Carter & Co. received a Bronze Medal for herbaceous Calceolarias, and Messrs. Ker & Son a Silver Medal for a wonderfully good assortment of Crotons. Mr. Stevens, nurseryman, Putney, exhibited some pretty Abutilons. A collection of plants, mostly of the greenhouse section, was shown by Messrs. Culturk & Son, which was effectively arranged with Ferns, Selaginellas, Palms, and Dracensa. A Small Silver Medal was awarded. Messrs. Laing & Co., Forest Hill, obtained a Silver Medal for a wonderfully good assortment of Crotons. Mr. Stevens, on the strength of the decision of plants in the group. A small silver Medal was awarded. Senal Silver Medal for a swarder of the substance of the fir MISCELLANEOUS PLANTS were largely shown, Mr. theless are rarely met with in the competing groups at

thetess are rately me.

Rose compelitions.

The Veitch Memorial Prize of a Medal and £5 for the best Orchid went to Mr. J. Powell, gr. to W. E. Brymer, Esq., M.P., Ilsington House, Dorchester, for his splendidly flowered Cattleya Skinneri.

Notices of Books.

The Student's Guide to Systematic Botany, &c. By Robert Bentley, F.L.S. (London: Churchill,)

This is designed as a "convenient and handy little volume for use abroad and at home by medical, pharmaceutical and other students, who are desirous of obtaining a good practical knowledge of some of the more important British natural orders and medicinal plants, and also as a foundation for further study." It comprises chapters on classification, nomenclature, and the method of describing plants, together with a brief account of certain selected natural orders, but without any note of any medicinal or economic properties that the plants may have. The book is avowedly drawn up with a view to the examination room; but it is only suited for the more elementary examinations.

Köhlers' Medizinal Pflanzen .- The fifth part of this publication is before us. It consists of a series of well executed, fully coloured plates, with botanical analyses of the plants used in medicine. The text is in German. Fortunately the plates appeal to people of all nationalities. We can recommend them strongly as excellent, and so inexpensive that four well executed and well coloured plates can be had for is., to say nothing of the text.

PUBLICATIONS RECEIVED .- Contributions to the Flora of Queensland; by P. O. Shanessy. (London: Reede & Co.)—Etude générale du genre Pommier et particulièrement des Pommiers microcarpes ou Pom-miers d'ornement, &c.; pat E. A. Carriète. (Paris : Libraire Agricole.)—Bulletin de la Société d'horticulture de la Cole d'Or. (Dijon.)-A Treatise on Olive Culture; by Ellwood Cooper. (San Francisco: Cubery & Co.)—Botanical Names for English Readers; by R. H. Alcock. (Manchester: Heywood.)-Bulletin de l'Association pour la Protection des Plantes. (Geneva : Carey.)

SAND-BINDING PLANTS IN INDIA.

In a report on the sand-binding plants found near Madras which Dr. Bidie has furnished to the Government Revenue Department some interesting facts are stated. "The utilisation of indigenous plants to bind the sands of this coast," Dr. Bidie says, "was apparently first attempted in 1849 on the suggestion of Colonel Worster, R.A., to protect the beach road from sand. Subsequently Dr. Cleghorn devoted attention to the subject, the immediate object then in view being to consolidate the shifting sands thrown up by the sea near Sir A. Cotton's groynes, which still exist along the beach opposite the city of Madras. The chief plants employed on both these occasions were the Goat's font Creeper (Ipomæa pes-capræ), and the spiny pink-like grass Spinifex squarrosus,"

In referring to the measures that have been adopted in Europe and America for the reclamation of coast lands Dr. Bidie points out that the planting of such plants was enforced by law on the beaches of Long Island as early as 1758, and in France, where successful and extensive operations have been carried on since 1780. In the South of France the first step towards arresting the progress of the sand is to erect a barrier to the drift, the usual form being composed of palings or hoards about 4 feet high, and the sharpened ends driven into the sand. Each board is from 5 to 6 inches wide and 11 inch thick. An inch space is left between the boards, so that as the sand drifts it is piled up in front of the boards, and passing also through the spaces is deposited behind. The boards soon become buried in the heap of sand which is collected around them, when they are raised without disturbing the heap. When the paling is first erected a space on the windward side eight times wider than its height is planted with sand-binding plants, those used in France being chiefly Arundo arenaria, a Triticum, Cakile maritima, and a Salsola. The dune thus secured rises higher and higher, and the plants as they are huried struggle upwards and bind the drifted heap with a network of roots. The dunes in France increase in height at the rate of about a foot a year, and the top is sometimes covered with

Dr. Bidie says :- "The chief local plants instrumental in thus arresting and consolidating sand are those mentioned by Dr. Cleghorn-viz., squarrosus, Ipomæa pes-capræ, Launæa pinnatifida (formerly Microrhypeus sarmentosus); and to these may be added Cyperus arenaria and other Cyperaceæ, and Tridax procumbens. The locality which these plants frequent is that of the loose shifting sands, The most common species found in these localities are Canavalia obtusifolia, Hydrophyllax maritima, Sesamma prostratum, Pupalia orbiculata and Crinum sp.

Immediately behind the dunes the flora is somewhat more extensive, the chief plants found in that zone being Polycarpa corymbosa, "Alissicarpus vaginalis, Phaseolus trilobus, Desmodium gangeticum, *D. triflorum, *Indigofera enneaphylla, Mollugo stricta, *Spermacoce articularis, *Iledyotis Heynei, Ipomæa pes-tigridis, I. tridentata, Lippia nodiflora, Asystasia coromandeliana, Pedalium rumex, *Leucas diffusa (?), *Chamissoa aspera, *Ærua Monsonia, Chenopodium indicum, Salicornia indica, *Cyperus Chenopoduthi micuum, Sancerina indica, Sperus castaneus, *C. bulbosus, *C. distans, *Filmbristylis ferruguinea, *Kylliogia triceps, Isolepis gracilis, Trachyosus muricatus, Aristida setacea, Eleusioe ægyptiaca, Chloris barbata, Perotis latifolia, Imperata arundinacea. Shrubs and trees also begin to appear at this zone, amongst which may be noted Carissa carandas, Ehretia arenaria, Pandanus odoratissimus, Phoenx farinifera, Borassus flabelliformis, Anacardium occidentale, Solanum Jacquinii, Psidium pytiferum, Jasminum angustitolium, Memecylon tinctorum, Calotropis gigantea, Hoya viridiflora, Tylophora asthmatica, and Hemi-desmus indicus. Pandanus odoratissimus is particularly useful when it is desirable to raise the saod-drift in large heaps, and at the same time to afford shelter from the sea breezes. The Caiophyllum inophyl-lum also thrives well when planted in such situations, and so does Pheoix sylvestris. If there is a backwater or canal, Aviannia tomen-tosa will be found most useful for consolidating the bank and catching the drift, as a dense miniature thicket of shoots springs up wherever the roots extend and catches débris of all kinds as well as sand If the water is fresh the tall grass, Saccharum spontaneum, also becomes a most valuable protecting agent from the moving sand. Other trees which thrive well near the coast, and which might be used for planting up reclaimed tracts of sand, are Eugenia jambolana, Albizzia Lebbek, Sapindus emarginatus, Thespesia populnea, Paritium tiliaceum, Cordia myxa, Pongamia glabra, Odina Wodier, Mangifera indica, Feronia elephantum, Mimusops hex-andra, Dalbergia paniculata, Acacia planifrons, Acacia latrosum, Pithecolobium dulce, Ficus indica, F. tsila, and Casuarina muricata. "Extensive plantations of this last-named tree exist for many miles along the coast north and south of Madras, and these have greatly improved the appearance of what was before a sun-beaten, sandy waste. There can be no doubt also that the plantations have rendered the fields behind them more valuable for affording shelter, and in some cases have permitted land to be brought under cultivation which would otherwise have remained in a waste state. The Casuarina is a very hardy plant near the sea, and will grow down to high-water mark even amongst loose sand. The secret of its flourishing in such situations is due to the fact that the subsoil water is always near the surface, and that the sand, although apparently barren, is generally largely mixed with decayed organic matter. When the trees in a Casuarina plantation are left unpruned they throw out decumbent horizontal branches, which develope roots and thus fix the sand. If the trees are cut these rooting branches, when left intact, throw up shoots, and thus the forest is naturally renewed. In the shade of an established Casuarina plantation the ground is littered with the minute twigs shed by the trees, and this top-dressing, if left undisturbed, shortly decays and fructifies the soil. The plants which grow in the shade of Casuarioas when not too dense are marked thus * in the foregoing list."

Dr. Bidie says that the importance of the Casuarina in the reclamation of waste sandy tracts on the coast can hardly be over-estimated.

ÆTHIONEMA CORDIFOLIUM .- A woody perennial, with the habit of Iberis, with linear spatulate leaves and close oblong heads of rosy-lilac flowers. Native of Lebanon. Gartenflora, t. 1150,

The Meather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON,
FOR THE WEEK ENDING WEONESONY, MAY 21, 1884.

MONTH AND DAY.	BARO	METER.	2	Гемг	ERAT	TURE AIR.	OF	due fi Gla Tab	grome- al De- tions com isher's les 6tb ition.	Wino.	ب
	Mean Reading Reduced to 32° Fahr.	Departure from Average of 18 years.	Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 50 years.	Dew Point.	Degree of Humdity. Sat. = 100.	Average Direction.	RAINFALL
May	In.	În.									In.
15	29.92	+0.18	60.5	47.0	13 5	53 · a	+ 1.1	46.8	79	w.	0.0
16	29.85	+ 0.11	6g.a	52.0	17 0	59.1	+ 6,8	53-4	82	w.	a.o
17	29.62	- 0.II	75.5	51.0	24 5	61 4	+ 8.6	47.4	60	5.	0.0
18	29.68						0.3	₄6.8	8o {	S.W. : S.S.W.	0.0
10	29.73				15.5			44.2	72	N.E. :	0.0
20									69{	E.N.E. S.: W.S.W	0.0
	30,02	+0.38						43.2			
		+051	69.6	41.1	28.5	55 4	+ 1.5	43-9	65	S.	0.0
21	30.25										

May 15.—Fine, dull day and oight,

10.—Dull morning, foe and bright afternoon. Fice night,

12.—Very fine bright day and night,

13.—Slight raie in early morning, dull day and night,

10.—Dull day and night,

20.—Fire and bright at times, dull mostly. Fine clear night,

21.—Very fine bright day and night.

LONDON: Atmospheric Pressure.—During the week ending May 17, the reading of the barometer at the level of the sea decreased from 30.18 inches at the beginning of the week to 29.93 inches by 3 P.M. on beginning of the week to 29.93 inches by 3 P.M. on the 12th, increased to 30.03 inches by 9 A.M. on the 13th, decreased to 29.85 inches by 9 A.M. on the 13th, decreased to 30.47 inches by 9 A.M. on the 15th, decreased to 30.07 inches by 3 P.M., increased to 30.09 inches by midoight on the same day, and was 29.75 inches by the end of the week. The mean reading of the barometer for the week at the level of the sea was 29.98 inches, being 0.06 inch higher than last week, and 0.06 inch above the

at the level of the sea was 29 98 inches, being 0.06 inch higher than last week, and 0.06 inch above the average of the week.

Temperature. — The highest temperature in the shade in the week was 80°,5, on the 11th; the highest on the 15th was 60°,5. The mean of the seven high day temperatures was 70°,0.

The lowest temperature was 40°, on the 14th; to the 15th the lowest temperature was 52°. The mean of the seven low night temperature was 49°,3.

The greatest range of temperature in one day was 32°,5, on the 11th; the smallest was 13°,5, on the 15th. The mean of the seven daily ranges was 21°.6.

The mean of the seven daily ranges was 21°.6.

The mean of the seven daily ranges was 21°.6.

The mean temperatures were—on the 11th 64°.4.:

The mean temperatures were—on the 11th, 64°.4; on the 12th, 63°; on the 13th, 57°.3; on the 13th, 63°; on the 13th, 59°.1; and on the 17th, 61°.4; and these were all above their averages by 13°.2; 11°.9, 6°.2, 2°.3, 1°.1, 6°.8, and 8°.6 perspectively.

8°.6 respectively.

The highest reading of a thermometer with blackened bulb in vacuo placed in the full rays of the sun was 142°.5, on the 12th. The mean of the seven readings was 117°.8.

The lowest reading of a thermometer with its bulb placed on grass was 36°,5, on the 11th. The mean of the seven readings was 4t°.2.

Rain.—Rain fell on two days to the amount of 0.32 inch, of which 0.30 inch fell on the 12th.

ENGLAND: Temperature.—During the week ending May 17 the highest temperatures were \$3^\circ, of at Backheath, 80° at Cambridge; the highest at Plymouth was 66° , of at Truro 68° , and at Brighton 70° . The general mean was 76° .3.

The lowest temperatures in the week were 40° at Truro and Bolton, 41° at Cambridge; the lowest at Brighton, Blackheath, and Preston, 46° . The general mean was 43° .5.

The greatest ranges were 39° at Cambridge, 38° .9 at Bradford, 37° at Hull; the smallest ranges were 22° .6 at Plymouth, 24° at Brighton, and 28° at Truro. The general mean was 32° .8.

The mean of the seven high day temperatures was highest at Cambridge, 72° .1, at Blackheath 70° .9, at Nottingham 69° .5; and was lowest at Truro and Sunderland, 61° , at Plymouth 61° .1. The general mean was 65° .4. ENGLAND: Temperature .- During the week ending

The mean of the seven low night temperatures was highest at Brighton, 49°.6, at Blackheath 49°.3, at Preston 49°.1; and was lowest at Bolton, 45°.4, at Wolverhampton 45°.5, and at Bristol 46°.6. The general mean was 47°.7.

The mean daily range was greatest at Cambridge, 25°.3, at Nottingham 22°.4, at Blackheath 21°.6; and was least at Plymouth, 12°.2, at Trura and Sunderland 13°. The general mean was 17°.7.

derland 13°. The general mean was 17°.7.

The niean temperature was highest at Blackheath, 58°.8, at Cambridge 57°.8, at Nottingham 56°.6; and was lowest at Bolton, 52°.3, at Bristol 52°.6, at Truro 52°.7. The general mean was 54°.0.

Kain.—The largest fall was 1.15 inch, at Bolton, 0.79 inch at Preston, 0.60 inch at Liverpool; the smallest fall was 0.04 inch, at Cambridge, 0.09 inch at Brighton, 0.12 inch at Plymouth. The general mean fall was 0.34 inch. mean fall was 0.34 inch.

SCOTLAND: Temperature.—During the week ending May 17, the highest temperature was 71°, at Glasgow; at Dundee the highest was 63°.4. The general mean was 67°.7.

The lowest temperature in the week was 36°, Perth; at Leith the lowest temperature was 30, at The general mean was 33°.9.

The mean temperature was highest at Leith, 54°.1;

and lowest at Greenock, 51°.7. The general mean was 52°.8. was 5.2.0.

Rain. — The largest fall was 2.22 inches, at Greenock; and the smallest fall was 0.18 inch at Edinburgh. The general mean fall was 0.74 inch.

JAMES GLAISHER, F.R.S.

Answers to Correspondents.

. MR. CRANSTON,—An incorrect announcement in our last issue has, we are sorry to find, occasioned much unnecessary pain and inconvenience. It appears that the fatal accident alluded to befel a brother of the famous Rose grover, who was not connected with the nursery establishment, although it was accused it he information which reached us. it was so stated in the information which reached us.

CATTLEYA MOSSIÆ: J. IV. A very good variety of Cattleya Mossiæ, but certainly not the var. reticulata.

Cattleya Mossace, off tertainly not the var, retuclinata, Flusious on Dracenas, &c.: T. G. "The little black scale" is a harmless fungus named Filobolus crystallinus. The fungus is very minute, and grows on dung and similar material, often in great abundance. At a certain period of growth, each fungus elastically shoots one of these growths into the air; they are sporangia, or spore-cases, and being sticky, they fix on glass, rafters, pots, &c., alike—sometimes on gardeners' faces as they are looking over plants.

INDIAN CORN: H. S., Belfast. Sow the seeds at once in light rich soil, and in strong heat. When the NOIAN CORN: H. S., Bellast. Sow the seeds at once in light rich soil, and in strong heat. When the young plants are large enough, plant them in rows; or, better still, in groups of three or five, in hills about 4 feet apart. The soil must be rich, deep, well tilled, and well drained. If you only want to cut the plant green, for fodder, you may sow at once in the open ground. ground.

MEDICINAL HERBS: L. M. Yes, undoubtedly many of our wild plants have medicinal properties, but in practice it is cheaper and more convenient to make use of the drugs imported wholesale from climates with more heat and sun than we are blessed with, and where in consequence the medicinal ingredients are more perfectly and abundantly formed than they would be here. We advise you, if you are neither a botanist nor a doctor, not to meddle with herbs, for many are poisonous

NAME OF FRUIT: H. 7. C. Apple: Northern Greening.

NAME OF FRUIT: H. 7. C. Apple: Northern Greening.

NAMES OF PLANTS: Dublin. If a greenhouse plant, Celsia cretica; if hardy, a Verbascum. Why send such wretched materials? — W. O'B. Antennaria dioica. — O. P. 1, Blechnum sp.; 2, Geranium quercifolium; 3. Veronica salicifolia; 4, Calceolaria var.; 5, Asplenium Trichomanes. — W. M. B. Sedum spectablic. — H. 7. R. Vanda Bensoni, Masdevalla nycterina, Gongora quinquenervis vitellina, and Dendro bium primulnum. — Invorn. 1, Cupressus Lawsonicy of Third Control of the Specimens. — C. M. Owen. Gaultheria fragrantissima, C. M. Owen. Gaultheria fragrantissima, var. hispida. — J. Miller. Miltonia Warseewiczii, often called in gardens Oncidium fuscatum, or Odontoglossum crispum (Alexandre). H. 7. C. A pretty variety of Cattleya Mossica, and three varieties of Odontoglossum crispum (Alexandre). H. 7. C. A pretty variety of Cattleya Mossica, and three varieties of Odontoglossum crispum (Alexandre) of a very good strain. — D. D. 1, Asperula odorata, not wild; 2, Elecoharis palustris; 3, Equisetum hyenale; 4, Cares silvinica; 5, Lychnis vespertina; 6, Rumev acctosella. — A. O. C. 1, Yellow Turban Ramnculus; 2, a British Orchis, not in a condition for identification. — J. Williams. 1, Prunus Padus; 2, the Dovaston Vev; 3, Taxodium sempervicens; 4, luniperus sinensis; 5, Thuiopsis borealis; 6, Roblina Sendacacia. — M. Maxvedl. 1t, probably Cotonenised; 3, Libocedma decurrens, often, but erroneously, called Thuia gigantea. called Thuia gigantea.

NOTICE TO LEAVE: Dublin. If you are paid weekly, one week's notice to leave is all that is given or required.

PEACHES DROPPING OFF: G. H. The fruits will drop off during the stoning period, but only to a small extent, if properly managed. Unsuspected dryness at the roots was probably the cause in your case, but we have no means of judging exactly.

ROSES: An Old Subscriber. The bark has been eaten by a weevil (Otiorhynchus or Curculio). They feed at night, and must be searched for then.

by a weevil (Ottorhynchus or Curculio). They feed at night, and must be searched for then.

NRES: A. C. R. The warty excrescences on the underside of your Vine leaves will not do much barm if you give the Vines more air. The temperature of the house has been kept too high, and the atmosphere too moist.—R. S. B. The leaves look as if the plants were subjected to a high night temperature, and deficient ventilation at all times. They are thin and flabby, although of great size, and, as a consequence of the treatment, have fallen a prey to thrips, redspider, and other insect pests. Give more air night and day; and if you could bring fermenting stablemanure into the house, sprinkle the house floor with guano-water, you would then obtain bardier foliage and fruitful wood for another year. There is no Phyllosera present.—R. R. W. I am well acquainted with leaves in the state of the Vine leaves sent, but I have never been able to see either fungus or insect. It is assails that one or other may start the allment, but it is sailed that one or other may start the allment, but it is sailed that one or other may start the allment, but it is sailed that one or other may start the allment, but first, which is the state of the Vine leaves, who can be produce the injury; they are hyenes, who can be produced the injury; they are hyenes, who can be treated to the state of the vine leaves the content of the produce the injury; they are hyenes, who can be treated and puttid, without the cause being apparent. W. G. S. INES—AERIAL ROOTS: Amaleur. It is not easy to

putnd, without the cause being apparent. W. G. S. VINES—ABRAIA ROOTS: Amatur. It is not easy to say why the Lady Downe's should produce aerial roots, and not any other Vines in the same house, unless it be that its natural roots are not in such a thriving condition as they might be. They are unsightly, but will do no harm to the cane, and may be cut off when the Vines are pruned in the winter.—T. Griffin. In your case the production of the acrial roots is easily accounted for by the lowness of the house, which is conducive to a close moist atmosphere. Your plan of encouraging the roots to grow in bundles of moss, kept moist, must be of some advantage to the pot Vines, but in the case of Vines planted out we should regard the practice with dislavour, and for more reasons than one. more reasons than one.

CATALOGUES RECEIVED.

DEANE & Co., 46, King William Street, London Bridge, E.C.—Garden Furniture, Horticultural Implements,

&c.

B. S. WILLIAMS, Upper Holloway, London, N. — New and General Plant Catalogue.

E. P. DIXON, 57, Queen Street, Hull—New and Choice

E. P. DIXON, 57, Queen Street, Hull—New and Choice Plants.
W. & J. BIRKENHEAD, Sale, near Manchester — Hardy and Exotic Ferns.
VELDHUIJZEN VAN ZANTEN & NIEUWERF, Beverwijk, near Haarlem—Dutch Flower Roots.
THOMAS IMRIE & NONS, Ayr, N.B.—Stove, Green-Bouse, and Bedding Plants, &c.
Eedding Plants.
Legding Plants.
VORTE & RICHARD, Zeits Holland, Blardy and Evotic

VOUTE & RICHARD, Zeist, Holland-Hardy and Exotic

COMMUNICATIONS RECEIVED.—II. R. I.—I. A.—I. M. H.—F. P. B.—G. P.—W. J. M.—W. F.—T. S. C.—J. B.—CH. H. R.—R. D.—C. M. O.—H. G. C.—G. H.—O. P.—W. F. M.—M. M.—D. D.—J. C.—W. J. H.—G. M.—S. W.—W. B.—A. G.—C. W. D.—E. M.—W. W. C.—C. E. B.—L. M.—C. K.—W. H. F.

Markets.

COVENT GARDEN, May 22.

HEAVY supplies of all classes of goods still arriving, with no improvement in demand excepting at lowest values. James Webber, Wholesale Apple Market.

FAUIT .- AVERAGE WHOLESALE PRICES.

Apples, ½-sieve . . 3 o - 50
Grapes (new), per
b. . . . 2 o - 40
Lemons, per case. 1 0 o - 14
Compos, per case. 2 o - 2 o - 60
Lemons, per case. 2 o - 2 o - 60
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Lemons, per case. 8 o - 60
Le

VEGETABLES.—AVERAGE RETAIL PRICES.

VEGETAELES.—AVERA
Artichokes, Globs, d. s. d., per doz.

10 5 o — Jerusalem bush, 4 o — Asparagus, English,
per 100 ... 20 5 0 — Spanish, bundle 1 6 — Spanish, bundle 1 0 — Spa

POTATOS.—Kent Magnums, 80s. to 100s. per too; do., Reger 80s. to 100s.; Champions, 50s. 10 6ss.—New: Jers Kidneys, 16s. per cwt.; Lisbon, 10s.; Malta, 10s. to 12s

687

THE ONLY GOLD MEDAL EVER OFFERED IN ENGLAND.

PLANTS IN POTS .- AVERAGE WHOLESALE PRICES.

PLANTS IN POTS.—AVERAGE WHOLESALE PEICES.

Aralia Sieboldi, don.12 o-4d o Arbor-vitz (golden), per dozen. . . . 6 o-18 o per dozen. . . . 6 o-18 o heliotrope, doz. . . . 6 o-12 o Hydrange, per dozen. . 9 o-18 o Heliotrope, doz. . . 6 o-12 o Hydrange, per dozen. 2 o-10 o Carconaterm. doz... 30 o-50 o viridis, per doz... 10 o-10 o Feirage availus, por doz. 6 o-12 o Pracezoa term. doz... 30 o-60 o viridis, per doz. 10 o-18 o Evergrecos, in var., per doze o . . . 10 o-12 o Feirage availus, por doze o Feirage availus, por doze o . . . 10 o-12 o Feirage abilitation (how 10 o-14 o Feirage abilitation, per doze o . . . 6 o-12 o Grusse, per doze o . . . 2 o-10 o Fucibilis, per doz. . 0 o-12 o Sprizage planta, doz. 8 o-13 o Sprizage planta, doz. 8 o-13 o Sprizage planta, doz. 8 o-13 o Cur Folwers.

THE

CUT FLOWERS .- AVERAGE WHOLESALE PRICES.

CUT FLOWERS.—AVERA
Abutilon, 12 bunches 2 o - 4 o
Anemoose, 12 bun... 2 o - 4 o
Anemoose, 12 bun... 2 o - 4 o
Arum Liles, 12 bins... 3 o - 6 o
Bite Bells, 12 bun... 0 6 - 1 o
Bite Bells, 12 bun... 0 6 - 1 o
Calcobaria, 12 sprays 1 o - 1 6
Carnellias, per bun. 0 9 - 1 o
Cardender, 12 bins... 1 o - 3 o
Eucharis, per doz... 1 o - 6 o
Eucharis, per doz... 1 o - 6 o
Enches 1 o - 6 o CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

Abution, 19 bunches 2 of 0.

Allowing 10 bunches 2 of 0.

Arum Lilies, 12 bun. 3 o - 6 o

Arum Lilies, 12 bun. 3 o - 6 o

Arum Lilies, 12 bun. 3 o - 6 o

Blue Bells, 12 bun. 6 o - 10

Blue Bells, 12 bun. 6 o - 10

Blue Bells, 12 bun. 1 o - 16

Blue Bells, 12 bun. 2 o - 4 o

Camellias, per dor. 1 o - 10

Camellias, per dor. 1

SEEDS,

SEEDS,

LONDON: May 21.—The season being over, the trade or farm seeds has assumed the extreme quietude which is usual during the sunmer months. Quotations in consequence show no variation. There is some small inquiry for Mustard and Rape seed. The sale for Canary, Millet, and Hemp seeds is at present restricted. Feeding Linseed continues very quiet. Blue boiling Peas and Haricot Beans are steady in value. John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.

CORN.

At Mark Lane on Monday English red Wheat was 1s. under the previous Monday, white Wheat showing no quotable change. Australian Wheat sold at a similar decline, and foreign Wheats were easier. Barley ruled steady, and good stout qualities tended rather against the buyer. Old Beans were unchanged, as also were Peas and Leutlis, Maize was 3d. to 6d. dearer than on Peas and Lentils. Maize was gd. to 6d. dearer than on Monday se'nnight, and on Oats a similar advance was quoted.—On Wednesday the enquiry for Wheat or flour was extremely dull, and business was too small to test quistations, which were nominal, but the tendency was against holders. Barley ruled very firm. Maize since Monday advanced 6d., and Oats have sustained a similar advance.—Average prices of corn for the week ending May 17:—Wheat, 375. rod.; Barley, 395. od.; Oats, 215. For the corresponding period lastyear:—Wheat, 437. 4d.; Barley, 305. 8d.; Oats, 225. 9d.

CATTLE.

CATTLE.

At the Metropolitan Market on Monday, with lighter supplies than on the previous Monday, the beast market was firmer, the large number known to be at Deptford tended to check the rise. Of sheep and lambs there were 1000 less than on Monday se'nnight, and for both better prices were obtained by 2d, to 3d, per lb. Quotations:—Beasts, 4s, to 5s, and 5s, 2d, to 5s, 6d, calves, 5s, to 6s, 8d, i sheep, 5s, to 5s, 6d, and 5s, 8d, to 6s, i calves, 5s, to 6s, 8d, is beep, 5s, to 5s, 6d, and 5s, 8d, to 6s, i and 5s, 8d, to 6s, i and 5s, 8d, to 6s, i calves, 5s, 5s, 8d, to 8s, 2d, Tbursday's trade was quiet. Both beasts and sheep moved off slowly at about Monday's prices. Other stock dull.

HAY.

HAY.

At Tuesday's Whitechapel Market supplies were large, and trade dull. Quotations:—Frime old Clover, 55. to 165.; inferior, 65. to 175.; prime second cut, 25. to 165.; inferior, 65. to 175.; prime second cut, 26. to 165.; and straw, 28. to 195.; per load.—On Thursday there was a fair supply, and trade was quiet.—Cumberland Market quotations:—Superior meadow hay, 84. to 94s.; inferior, 65s. to 74s.; superior Clover, 105s. to 11s.; inferior, 65s. to 90s.; and straw, 32s. to 37s. per load.

POTATOS.

POTATOS.

The average prices during the week were as follows:
—Magnum Bonums, 70s. to 1055.; Victorias, 60s. to
80s.; Champions, 55s. to 70s.; reds, 40s. per 10n; new,
14s. to 15s. per ewt.—The imports into London lawek were:—13s6 baskets 74 packages from St. Nazaire,
7179 packages 135 boxes 59 cases Malta, 43 cases Bordeaux, 1220 bags Hamburg, 348 cases Cadiz, and 741 cases Lisbon.

Government Stock .- Consols closed on Monday at roris to notify for delivery, and notify to roll for delivery, and as on honour the second. The shadow is figure were rorist to roll for delivery, and as on Monday for the account. The closing prices of Wednesday and Trorist for receiving to rorist to rorist for delivery, and rorist to rorist to rorist for delivery, and rorist to rorist for the account.

The Poster Also JAMES OF THE PARTY IN CIRIL R. P. L. O. WILLIAM M. C. T. D. T. D. W. T. D. W. T. D. W. T. D. T.

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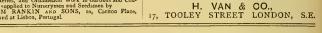
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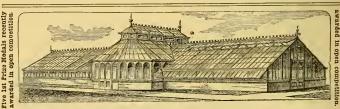
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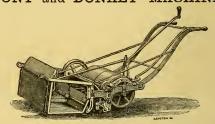
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LEEDS FLORAL and HORTICULTURAL EXHIBITION, JUNE 25, 26 and 27. Schedules on application to G. BUSH, Secretary. G. BUSH, Secretary.

HULL BOTANIC GARDE HORTICULTURAL EXHIBITION, JULY 2, 3, and 4. Schedules and particulars of

PHILIP MAC MAHON, Curator and Secretary. Botanic Gardens, Hull.

BEDFORD and BEDFORDSHIRE HORTICULTURAL SOCIETY.
FIRST SHOW at Beford, JULY 16. FRIZES offered for ROSES open to all England. Schedules of Prizes with Forms of Entry to be obtained of Stonelegh, Bedford.

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Friday Next.

Priday Next.

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MESSRS. PROTHEROE AND MORRIS
will include in their SALE at their Central Sale Rooms,
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Messrs. Hugh Low & Co., a quantity of ORCHIDS collect
in the territory of the North Borneo Company, comprising
CELOGYNES, AERIDES, PHALENOPISIS, DENDROBIUMS, including the race D. T&BACHERIA.
On view morning of Sale, and Caulingues had.

Maidstone.

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MESSRS. PROTHEROE AND MORRIS beg to announce that they will SELL by AUCTION, in the Horticultural Tent at the Bath and West of England Showyard, Maidstone, on SATURDAY NEXT, June 7, at 20 'Clock, several fine Exhibits, consisting of choice STOVE and GREENHOUSE PLANTS; also a large assortment of valuable Established ORCHIDS in flower. Further particulars may be obtained in the Tent on the day of Sale.

The Sale will offer ac unsually good opportunity to Plact Growers to secure highly-cultivated specimens and rare and choice ORCHIDS at moderate prices. No Catalogue will be

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of well grown STOVE and GREENHOUSE PLANTS, comprising 2000 double white Primulas, 500 crimson Cloves,
Eucharis, 500 Glovinias, 1500 Chrysanthenums of the best
varieties, 300 and Primulas, 1500 crimson Cloves,
Eucharis, 500 Glovinias, 1500 Chrysanthenums of the best
varieties, 300 and Primulas, 1500 crimson Cloves,
Eucharis, 500 Glovinias, 1500 Chrysanthenums of the best
other plants.

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Possession of the whole may be had on completion of the
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Wednesday Next.-(Sale No. 6667.) Wednesday Next.—(Sale No. 6667.)

SPECIAL SALE of ORCHIDS in Flower and Bud,

MR. J. C. STEVENS will SELL by

Covent Garden, W.C., on WEDNESDAY NEXT, June 4,

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FLOWERING ORCHIDS, on the COLLECTION of

FLOWERING ORCHIDS, on the County of C regalis, M. Bull's blood var., glossum sceptrum, &c. On view morning of Sale, and Catalogues had.

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Harryaoa lutea

,, ,, atrosangunea ,, ,, atrosangunea ,, ,, Bull's-blood ,, rosea Odontoglossum Audersonia-num

Læina Williamsii
, elegaus
,, aceps Dawsoni
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South Hackney, E., in the County of Middlesex, Greengroers,
who died on or about the sizt July, 1880, are on or before the
23d JUKE, 1898, to end in property of the Creditors,
Rood Laee, London, E.C., Solicitor of the Defendant,
FREDERICK FENTON, the Administrator of the Deceased,
their Christian and Surnames, Addresses, and Descriptions, the
full particulars of their Claims, a statement of their Accounts,
free Defendant, Property of the County
default thereof they will be peremptorly excluded from the
benefit of the said Order. Every Creditor holding any Security
is to produce the same before Mr. Justice Pearson, at his
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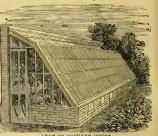


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Pentstemon, very choice mised 1 Plootee, splendid double, mixed 2 s. 6d. and 5 Primm'ose, brilliant hybrids, mixed 1 s. 6d. and 2 Primula, Chiswick Red, splendid 2 Primula, alba maguifica, very fine 2 Primula, Daniels' choicest mixed 1 s. 6d. and 2 Primula, Daniels' choicest mixed 1 s. 6d. and 2

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seventeen years."

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Sweet William, Daniels' Prire
Wallflower, double German, mixed
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Wallflower, single, bload-red.

Wallflower, single, bload-red.

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THE

Gardeners' Chronicle.

SATURDAY, MAY 31, 1884.

MY FLOWER GARDEN IN THE DECCAN.

URING the whole of my life I have been an amateur floriculturist, and in whatever tropical climate my lines have been cast there I have managed, under more or less disadvantages, to raise a few flowers, differing from or superior to those growing around. But, strange as it may appear, the place where I obtained the greatest success and had the most charming and perfect varieties of blooms was at Secunderabad, in the Nizam's territory in the Deccan of India, and where I had to contend against difficulties unknown before. True that for four months of the year the temperature of the station was cool and moist, but for the remaining eight either the periodical rains swamped, or the scorching hot winds and sun dried up every atom of delicate vegetation. Then again the soil was the poorest of the poor -sand, or rather pulverised granitic rock, being its chief component, and the labour available was the least expert I had hitherto had the misfortune to deal with. Your Indian mahleesuch being the name of the native gardeneris, as a rule, an ignorant coolie, knowing little of the practice and less of the principles of his occupation, which he only follows, as it is his caste-caste, the bogie despot of the East. Moreover, he is a gentleman who scorns to be taught, strive you ever so much to teach him.

But before I enter into any details as to how, drawbacks notwithstanding - I produced flowers which would have held their own with those of many a European grower, let me give the reader an idea of the spot where this cultivation was carried on-my house and grounds to wit. Of the former I shall merely say, that it was large and substantial, and stood within an inclosure-compound is the generic term-of a coarse grass, indigenous to this portion of the Deccan. A thin belt of shrubs and trees skirted the frontage of the bungalow; among the former some Crotons, Hibiscuses, Mimosas, Lantanas, and Oleanders; among the latter, flowering but fruitless, Pomegranates, a widespreading Neem (Melia Azadirachta), a ditto Tamarind, and a Moringa pterygosperma, that tree whereof the root is the substitute for Horse Radish, the seed pods the "stick curry" of gourmets, and the seeds themselves the "Ben Nut," yielding the oil used in perfumery. An undergrowth of a sort of yellow flowering dwarf Leguminous plant, relieved by several bright-leaved Poinsettias and variegated Laurel, and by many a bush of the ubiquitous Marvel of Peru, or Four o'Clock Flower, and Plumbago, filled up the ground space between the trees and shrubs, which, however, could not be said to flourish well, Mother Earth being, as before mentioned, so sadly wanting in elements of nutrition.

How, then, did I manage to grow flowers sufficiently worthy in points of speciality to be chatted about in this journal? Wholely and solely by cultivating them in pots from their alpha to their omega—from seedling to maturity. I shall take but one instance, and that the rare and choice Convolvuli and Ipomœas I pos-

sessed, and which, indeed, were the raree show of my garden. Sowed in pots, and fit for removal, I carried them to and arranged them around the pillars which supported the portico of the house, there to trail up a latticework of cane. Growing as they did in rich mould, their upspring was amazingly rapid even for Convolvuli in a hot climate, and presently they literally dazzled the eye with the variety, the colouring, and the numbers of their bloom, which embarass de richesse had indeed to be toned down with Jasmine, Honeysuckle, and a climbing Rose or two, all having been previously raised in pots and brought into their present position. So, to be poetical, I could fairly say-

"O'er the porch the wild Rose and the Woodbine entwined,

And the sweet-scented Jessamine waved in the wind,"

—bar always that the sun's heat causes very much of the fragrance to evaporate from the oil-cells, not only of Jasmine, but from every scented flower in the East.

A gardener from temperate zones, visiting my "compound"-the word is convenient-would have been struck by the abnormal system he saw in operation; nothing hedded out, everything "bedded" in-if I may be allowed the term-either a pot, a half tub, a keg, a cartridge barrel, or receptacle capable of holding it. I and others too who gardened in the Deccan held to the wine-bibber's view-that the liquor, being good, no matter what sort of vessel held it. And this same expert would have stared a bit as well at the arrangement of the various plant receptacles aforesaid, though he must have confessed that it was pleasing and effective. I disposed the receptacles in semicircles, where they would show to the greatest advantage, and particularly in front of the To each of these semicircles there was a background of tall plants-Cannas, Salvias, Poinsettias, Coleus, Tobacco-nay, even of feathery branched Asparagus. One has no idea until one tests it, what an elegant mass of light foliage the "sprays" of Asparagus make. In front of this "backing" stood a large tub painted green, or an equally large flower-pot daubed red, in which grew a Rose, or a Gardenia, or a choice Hoya, or a Stephanotis, or indeed any flowering plant that would stand out well, and not "hide its diminished head." Then around the base of the tub or pot, but at a foot or two from it, came a closely-set-together arc of small flower-pots, in each of which was either an Aster, a Balsam, a Phlox Drummondi, a double Portulaca, a dwarf Tropæolum, an Antirrhinum, a Marigold, a Verbena, a tuft of Golden Feather; and last, but not least, a Geranium or Pelargonium, care being always taken not to mix flowers higgledypiggledy, but to keep each kind together, and to study colours and sizes somewhat. I may assure the reader there was very considerable beauty and a little realisation of the "bedding out" in this order of plants of mine.

The Roses I cultivated were many, those that did best being the old-fashioned sorts, such as Maréchai Niel, Gloire de Dijon, Géant des Batailles, Cloth of Gold, Devoniensis, Coquette des Alpes, and so on; and it was wonderful how quickly they grew, and how profusely some of them flowered. The soil I used was a haphazard rule-of-thumb mixture of leaf-mould, stable manure, alluvial gatherings from the large fresh-water tanks, red earth—its colouring principle no doubt iron, sand, and a dash of sal ammoniac, which, in infinitesimal quantity, is a grand fertiliser, but, when too liberally given, a certain atropos to a Rose bush. The trees were wintered by Jaying bare the roots, and depriving them of water to a great extent during the hot season, when all vegetation is at standstill. The mahlee afore told of objected greatly to this "not gib tree pance (water) to drink, dis plenty too hot sun," and was for drenching them, but I forbade his doing so under penalty of

It was striking how quickly and splendidly, yet not without trouble, Balsams grew. I had them with huge sized flowers, of all colours and varieties, raised from seed obtained from Carter and from Sutton. I would have matched my dwarf Camellia Balsams with any, even with renowned growers of the flower in England. Portulacas did gloriously, the double ones

always recalling to my mind those rosettes one sees buttonholes of officers of French and other Continental orders of knighthood. Asters, too, were an especial pride of mine, and I got much kudos for the dwarf Pæony Perlection, the dwarf Victoria, and the dwarf Chrysanthemum kinds I raised. It was difficult to get good Verbenas, but, per contra, Pelargoniums, both double and single, were really firstrate. So also Phloxes, and Snap-dragons, and other annuals, which at this moment have faded from my niemory. But I remember that Sweet Peas flowered scantily and were next akin to scentless, but Tuberoses made up for that, and were almost too powerful in perfume. Dahlias and Zinnias did fairly well; Tulips would never flower with me, nor would the Gladiolus, though I have seen it thriving in the gardens of the Nizam, near the city of Hyderabad.

Three spoliators infested my garden: one was the white ant, which got into the tubs and boxes, ate the wood, and worked its way through the soil into the roots and stems of Roses and such-like; another spoliator was the bandicoot, or pig-rat, who revelled upon the larger seeds and the juicy parts of succulent plants; and the third and last, and worst, was my gardener, who, for the trifling consideration of a few of the Nizam's "duls" (copper coins), would cut and sell to any lady or geutleman of the station a bouquet of my choicest blooms, at the same time taking oath to me that he knew not how my "Johns of Battles," "Cockeys of Yalpes," "Glories of the Dungeon," as he miscalled my Roses, or how my "Gasters," "Ploxes," "Snapping-up-Dragons," and other flowers had been conjured from my pots into the vases of other individuals. H. L. C.

New Handen Plants.

PASSIFLORA "CONSTANCE ELLIOTT."

MESSRS. LUCOMBE, PINCE & Co., of the Exeter Nurseries, obligingly forward us blooms of a new seedling variety of Passiflora corulea, which is noteworthy on many grounds. First it is as hardy as the type, and has the same beautiful foliage. The flowers, however, are ivory-white, almost without a trace of that blueish tint which gave the species its name-the styles alone show evidences of the purplish hue characteristic of the species. Structurally the flowers present no difference whatever from the ordinary form, even in the disposition of the threads of the corona, but in colour, as we have said, the difference is considerable, and the agreeable fragrance is-speaking from memory-much more marked in the new variety. The sepals are greenish on the outer surface, white within, the petals white, the outer threads of the corona ivory-white, faintly tinged with yellow towards the tips, the remaining coronal threads have the same tint, and are quite destitute of the purplish bars and tips which characterise the species. Whether the fruit differs from the ordinary long ovoid orange-coloured berry we do not know. In any case it is a very beautiful variety, whose elegance and singularity of form and delicacy of tint will commend itself to all plant We give at p. 701 an illustration of this new variety, which received a First-class Certificate at the last meeting of the Royal Horticultural Society. Passiflora ccerulea affords an illustration of the truth of the common statement, that we never know the qualifications of a thing till we try them. botanist would have been bold enough to say that a plant, native of South Brazil, in the environs of Rio Janeiro, and a little southward, would be hardy enough to flower and fruit profusely on walls in the climate of Dublin and even of Middlesex? And yet this is the case, as every rambler through a London suburb knows. It is true that in many cases where no protection was afforded the plant died down to the ground in the severe winters of 1879 80 and 1880-81, but that the destruction was only partial is suf-ficiently shown by the rich sestoons of flower, fruit, and foliage, which may still be seen in their due season. M. T. M.

NEW FORMS OF EUCHARIS.

I am indebted to the kindness of Mr. Bull for a sight of three interesting plants from the United States of Columbia which he has just flowered.

The first is Plagiolition Horsmanni, in excellent condition, with fully developed leaves, just like those of a Eucharis, cotemporary with the flower. The second is a form of Eucharis Sanderi, differing from the type as figured in the Botanical Magazine by having the six stripes that run down the adnate corona green instead of primrose-yellow. The third is a form of E. amazonica (grandiflora) with the free portion of the corona not more than half as long as in the Botanical Magazine type, thus running off from it in the direction of E. Sanderi. This might be called E. grandiflora var. brachystephana. T. G. Baker.

HYMENOCALLIS EUCHARIDIFOLIA, n. sp. *

This is a new Hymenocallis belonging to the group with a long tube and Eucharis-like leaf, allied to speciosa and guianensis. It is distinguished from its neighbours by its few-flowered umbels, sessile leaves, and large corona. It has flowered for the first time at Kew this summer. It was received in 1882 from an unknown correspondent without any information as to its native country. All the species of the genus come from Tropical or Subtropical America, whilst Pancratium, which differs from Hymenocallis in seed only, belongs almost exclusively to the Old World.

Bulb ovoid, with thin brown outer tunics. Leaves four, thin, bright green, cotemporary with the flowers, oblong, 1 foot long, 3-3½ inches broad at the middle, with about fifteen distinct veins between the margin and midrib, branching off from the latter as in a Eucharis; blade nearly sessile, with a midrid ½ inch broad at the base. Scape ancipitous, I foot long. Umbel of 4—5 sessile flowers. Spathe-valves withered by the time the flowers are fully expanded. Ovary obloog-trigonous, under ½ inch long. Perianth with a sleeder green tube 4 inches long; segmeots linear, deeply channelled down the face, 3-3½ inches long. Corona white, regularly funnel-shaped, 1½ inch long, I inch across at the throat, with two distinct cusps on the edge between each filament; free portion of each filament I—1½ inch long; anthers linear, ½ inch long. Style green, exserted beyond the anthers. No distinct scent. § C. G. Baker.

PAPER-MAKING MATERIALS.

THE attention that has been given of late years to the very important question of the paper supply has resulted in the more general utilisation of many products that were but a few years ago scarcely known. The threatened exhaustion of the Esparto supply went a considerable way to turn the attention of paper-makers to other sources of material, and fresh substances are now frequently brought to notice, the young shoots of the Bamboo being amongst the most recent. The essential for a good paper is a substance that will pulp well, and at the same time possess a fibre sufficiently tenacious to strengthen the paper when finished; thus, the well-known Iodian papers made from the tough, fibrous barks of Daphne papyracea and D, cannabina are celebrated for their great strength; and again the Japanese papers made from the inner barks of Broussonetia papyrifera and B. Kæmpferi are sometimes made as thin as gauze, and yet on account of the interlacing fibres they possess considerable strength. Everybody knows how multitudinous and varied are the uses to which the Japanese apply paper. It is then to some of these well-known foreign sources of paper material, the suitability of which is abundantly proved, that we ought to look for some of our future supplies. It is not impossible perhaps to export the material in the form of paper stock or half-stuff, and we might perchance get this either from the Indian Daphne or the Fijian or Japanese Broussonetias; besides which, the plants themselves might be introduced into some of our colonial possessions, and grown for the sake of their fibrous bark; indeed, this would seem to have been already begun by Dr. King in the Botanic Garden, Calcutta; for in his last report on these gardens he says, "The Paper Mulberry (Broussonetia papyrifera) grows wonderfully well, and I am trying to obtain the seed in

^{*} Hymenocallis eucharidifolia, n. sp. — Bulbo ovoideo folisi 4-synanthis oblongis pedaitus subsessilibus; scapo ancipii fulis: aguiolongo; umbelis 4-s-fons sessilibus; spatthe valvis decidius; tubo cylindrico 4-pollicari, segments linearius tubo brevirobus, coros fundudubular lutra unciali deutibus iuteratamicis: perespicuis; lilaarendema parte libero corosa æquidongo; stylo longe exserto. f. G. Baker.

large quantity from Europe so as to be able to spread its cultivation in India." This, then, would seem to be a new branch of culture well worth consideration and experiment by planters in various parts of the world, for the trees might even be planted on the boundaries of plantations or as shade trees.

The Paper Mulberry grows everywhere in Japan, and is a valuable tree, as furnishing the bast from which a large portion of the Japanese paper is made. The plants are reproduced in quantity by subdividing the roots, and in two or three years are ready to be cut. This work is done in November, and the branches, 7 to 10 feet long, are made up into bundles 3 or 4 feet in length, and steamed, so that the bark is loosened, and can he more readily stripped off. This is washed, dried, and then again soaked in water

pulp evenly, after which the cover is first removed, then the Bamboo couch with the sheet of paper, and in returning the operative lays the sheet upon the others. When a number of sheets have thus been prepared they are pressed, to exclude the water, and afterwards spread out with a brush upon boards and allowed to dry. The sheets are only about 2 feet in length, but sometimes sheets 10 feet long are produced.

On all sides the question of finding substitutes for rags for paper making is acknowledged to be one of the most important. In Bavaria, according to a recently issued Government report, the paper-makers are directing earnest attention to the discovery of some substitute for rags, "and largely adopting wood, which has not tended to improve the

the average price at the close of 1882 only amounted to f_3 10s.; and in the summer the best wood-pulp was sold at even f_3 5s, per ton. Manufacturers found it difficult to dispose of their large stocks, and as wet wood-pulp could not be well preserved for a longer time, coosiderable quantities were damaged, and sold as inferior goods at prices varying from f_3 to f_2 15s, per ton. In consequence of this many mills stopped working until their stock of pulp had sufficiently diminished. In November, 1882, a meeting of manufacturers was held in Christiania, when several subjects connected with the wood-pulp industry were discussed. Thus it was proposed to restrict the produce, but no practical result in that direction was arrived at, except that a committee was elected for a further consideration of the matter. It

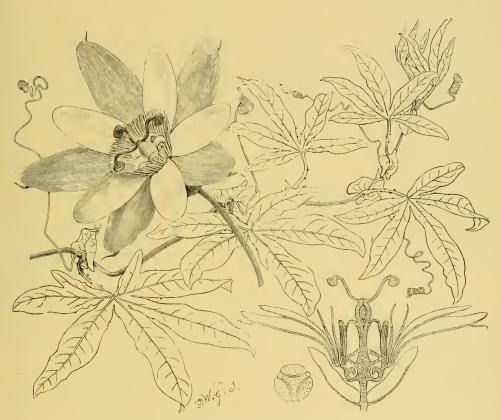


FIG. 133.—PASSIFLORA (CŒRULEA) CONSTANCE ELLIOTT: FLOWERS IVORY-WHITE. (SEE P. 700.)

and scraped with a knife to remove the outer skin, which is used for inferior kinds of paper. The bast, when cleaned, is washed, repeatedly kneaded in clean water, and mixed. It is then bleached in the sun until sufficiently white, after which it is boiled in a lye, chiefly of Buckwheat ashes, to remove all gummy matters. The fibres are now readily separated, and are transformed into pulp by beating with wooden mallets. The pulp is mixed in vats, with the necessary quantity of water, to which is added a milky substance prepared from Rice-flour, and a gummy infusion of the bark of Hydrangea paniculata, or of the root of Hibiscus Manihot.

The "Gouches" on which the paper sheets are pro-

The "couches" on which the paper sheets are produced are made of Bamboo, split into very fine sticks, and united in parallel lines by silk or hemp threads, so as to form a kind of mat. This is laid upon a wooden frame, and the apparatus dipped into the vat, raised, and shaken, so as to spread the

paper, and they still desire to see the export duty reestablished, as though the duties on paper under the new tariff may give them the home market, they are desirous of improving their paper and exporting to foreign countries."

Again, in a report from the Consul at Christiania, we read that the produce of wood-pulp increased immensely during 1882, causing prices to fall considerably. Many mills were extended, and several new ones were exected during the year. Some of the mills established in 1881 only commenced working in the beginning of 1882, at a time when the sale of wood-pulp is, as a rule, very limited. The manufacturers tried to force the sale of their produce, and thus large quantities were rather suddenly thrown upon the market, causing a considerable fall in prices. While the consumers in 1881 had to pay from £5 to £5 75.6% per ton for wood-pulp containing 50 per cent. of water, delivered free on rail at Christiania,

seems that while in 1875, 8,540,000 tons of woodpulp were exported, the quantity had risen in 1882 to 59,033,000 tons.

From Drammen the Vice-Consul also reported that the exportation of wood-paper pulp showed a considerable increase. As only a very few mills, however, gave a reasonable profit, the owners were compelled to avoid all possible expense, and therefore a large proportion of the pulp was exported from Drammen direct, instead of vid Christiania, in order to save the cost of railway carriage between those two places. Since all the paper-pulp mills are situated along the railway line from Drammen up to Konigsberg and Randsfjord, the only reason for exporting the pulp by way of Christiania, and paying heavy railway charges, is the convenience which the regular lines of steamers from Christiania to the great places of import afford to shippers. A regular line of steamers from Drammen to a convenient port of

the east coast of England ought to pay, especially if a reasonable return freight could be relied on.

In a report from Rome dated at the close of the past year, under the head of paper, it is stated that 'this industry, for which considerable hydraulic force is necessary, meets, in the province of Rome, with the most favourable auspices, yet there are surprisingly few manufactories; indeed, there are only eighteen moved by a 510 hydraulic horse power, and employing 347 men, 157 women, and 103 children. The production of paper is a little over 16,000 quintals (31,520 cwt.), though it might be at least 25,000 quintals (49,000 cwt.). The materials used for making it are rags of vegetable texture, and straw. A manufactory in Tivoli makes use of asbestos for the production of cardboard. At present the manufacture of paper in Italy exceeds the demand as to quantity, but not as to quality. The newspapers of Rome are printed on paper obtained from manufactories on the river Livi, distance about seventyfive English miles from Rome."

Amongst the most recent materials applied to paper making is the fibrous stems of the sugar cane after they have been passed through the mill, and the saccharine juice expressed; this, which is known as bagasse, has hitherto, in most cases, been used as fuel. In America, however, fuel of all kinds is cheap, so that in Louisiana, for instance, bagasse is seldom or never used for burning, and it is a worthless product, some planters indeed not knowing what to do with it. Recent experiments have shown that the hitherto useless bagasse contains a fibre that may be utilised for paper making. A ton of the material will yield about 650 lb, of fibre, while every ton of the latter can be converted into 1500 lb. of pulp. It has been estimated that each planter who makes 400 hogsheads of sugar might realise no small portion of his yearly expenses by working his bagasse and extracting its fibre. A company was formed in New Orleans about a year ago to make paper out of cane fibre. Their numerous experiments have satisfactorily ascertained that paper of an excellent quality can be made from this substance, and that the material is so inexpensive that it can be profitably worked. Certain planters have offered the company all the bagasse on their places for from five to ten years gratis. They hope to see this new industry started, so that they will be able to sell their bagasse to the factories. Others propose to extract the fibre themselves, for, if once paper factories are established, it will become a marketable product. John R. Jackson, Museum,

PLANTS IN FLOWER.

CYCLOPIA GENISTOIDES,—Messrs, Rodger, Mc-Clelland & Co. send flowers of Cyclopia genistoides, a greenhouse shrub, rarely seen in gardens, but one whose merits should more frequently secure it a place. The branches are slender, somewhat wirr, angular, the sessile leaves of three linear segments with recurved margins. The flowers are in close terminal racemes, and resemble those of the common Broom. The plant is a native of the Cape of Good Hope, and is both distinct and showy.

ROSA ACICULARIS.—A shrub with purplish-brown branches, studded with slender straight prickles of unequal lengths. Leaves with four sessile pairs, and one terminal stalked, oblong obtuse, dentate leaflet, Tipules, broad, leafy; flower-stalk, solitary, shorter than the leaf-stalk. Sepals twice or thrice longer than the ovoid lip, narrow, lanceolate, dilated at the tip. Petals carmine. A very beautiful single Rose. Native of Siberia.

PSYCHOTRIA JASMINIFLORA. — Notwithstanding the enormous number of species of this genus, and the consequent variety of form to be met with, they are almost unknown to the gardening world, simply from the fact of their possessing little or no distinctive ornamental feature to ensure their introduction and cultivation. The blue-herried P. cyanococa, however, is an exception, and the present one another, from the large pure white Bouvardialike flowers which are produced at the ends of the branches in great abundance. It is also known as Glonera jasminifora, but the generic characters having been proved to be those of an insufficiently described Psychotria are now merged in the latter genus. This species is flowering in the Palm-house at Kew.

NOTE ON COMPTONIA ASPLE-NIFOLIA AND MYRICA CERIFERA.

NEXT to the pleasure of working up the botany of plants in their native country, is that of seeing or hearing what is being done with them in other lands. English gardeners do treat some of our Canadian and American plants unmercifully, stewing in stove houses, between 60° and 80°, Pontederias, Sarracenias, Water Lilies, and Brasenias, whose whole winters are spent at home in a temperature ranging between the freezing temperatures of water and mercury. But, then, we are grateful that they succeed so well in rendering attractive, as ornamental plants, so many species that, in their native haunts, are rather plain and monotonous. I am often tempted by your notices, happily not infrequent of late, to hunt up the past history and early introduction to Europe of our plants, and have thus been led to collect some interesting facts. One of the latest American plants you referred to is Comptonia asplenifolia. It is one of our common dwarf shrubs, often hid by the taller growth of other shrubs, but becomes conspicuous on Blueberry barrens (where the vegetation consists mostly of dwarf Vaccinia), and in cleared spaces in the woods where the soil is dry enough, and not too rich for taller plants. In old clearings it may be seen monopolising spaces of several acres in extent, forming a crop that might be grown for its tannic acid. Its distinctive form and mimicry always ensure attention from the botanists, and the city wanderer picks it and enjoys its fragrance; but the rural residents' interest in it is too often limited in range to its use for the bedding of cattle. That notice in the Gardeners' Chronicle (n. s., xxi., p. 182), from Hortus Collinsonianus, of the with Spleenwort leaves," which "makes a fine tea and gives a good flavour to beer," introduces the plant to us here in a new rôle. You properly object to Loudon's "English" name (as it has become customary to call translations of botanical names); as cumbrous, and, while approving of the one given in Gray's Manual, viz., "Sweet Fern," you add, with a delicately mingled touch of dubiety and reservation, "only the plant is by no means a Fern." The benevolent object of my writing now is to ease the editorial conscience on this matter. (I feel also that a note ought to be here interpolated to the effect that if there are some of Loudon's English names that we do not care to use now, it is not because we have forgotten the great services which he rendered to natural science in the way of promoting its study at a time when its students were comparatively few and far between, by the attention which he gave to English names and the accentuation of Latin ones in the Magazines, of Natural History, and of Gardening, as well as in his stereotyped works.) It is no doubt unknown in England that Comptonia is familiarly recognised wherever it grows in America as "Sweet Fern." This is the true Anglo-American name of the shrub, long established and in common use in the country, not a "popular" name given by a writer on plants, but one that has originated with the people themselves. In Webster's American Dictionary of the English Language (ed. 1865), we fiod: "Sweet Fern, n. (Bot.) A small North American shrub, having sweet-scented or aromatic leaves resembling Fern leaves." Whether the Dictionary took the name from Gray, or Gray from the Dictionary, I cannot tell, not having the first edition at hand, but both are correct. I ought to add, however, that "Sweet Fern" sounded oddly enough to me when I first heard it in this country, just as Christmas Rose sounds oddly to an American or Canadian as the name of an unfamiliar Ranunculaceous plant. Such names are cherished when they are suggestive of pleasant ideas; when we first hear them we are apt to interpret them in a too exact and literal sense; as we become familiar with the plants intended the names cease to convey false notions. The use of the word "rose" as applied to the "Christmas" Hellebore we condone and rather like to use as a recognition of the plant's beauty, and as a pleasing reminder of the summer Roses that have come and gone; so the name "Sweet Fern" imposes upon no one who is familiar with the plant, but simply suggests a fragrant shrub, whose closely and regularly set leaves resemble the pinnæ of Ferns. The only inconvenience is that a botanical professor has often, in the course of one excursion, to explain half a dozen times that Comptonia is not a vascular Cryptogam, but an angiospermous PhœnoReferring to Hortus Kewensis, ed. 2, vol. v., p. 254, I find that Comptonia was cultivated in 1714 by II-er Grace the Duchess of Deaufort, Br. Mus. H. S., 141, fol. 37, which (according to preface) "signifies the Sloanean Hortus Siccus kept in the British Museum, from whence much information, principally concerning the plants cultivated by the Duchess of Beaufort, has been obtained." I am not aware whether anything more has been published regarding Her Grace's botanical labours than the scattered notices in Hort. Kew.; neither can I quite make out whether the name Comptonia was first used in Hortus Kewensis. Airon, Banks, Solander, are severally given as authorities for it in different works.

A nearly allied plant, and a frequent associate of the Sweet Fern along our Atlantic shores, is the fragrant Myrica cerifera, which has the corresponding names "Sweet Laurel" and "Sweet Bay." These names have no doubt been given originally by English people, who were reminded by its long, broad, shining leaves of the Laurels and Bays of English gardens. Dr. Gray, however, gives the names "Bay-berry" and "Wax Myrtle," which, together with "Candleberry-tree," are given in Webster. It has no resemblance in foliage to Myrtus communis. In Quebec Province (formerly known as Lower Canada) the names are "Arbre à la cire" and "Cirier de la Caroline." In English books the plant is often called "Candleberry Myrtle," in allusion probably to the tradition of the wax having been used by the early missionaries for candles. (Small candles of this wax were sent from Nova Scotia to the London Exhibition of, I think, 1862.) I gave some account of this plant in the Edinburgh Botanical Society's Transactions, in 1864. Myrica cerifera was also cultivated in England by Her Grace of Beaufort so long ago as 1699 (Br. Mus. Sloane MSS., 525 and 3349; Ait. Kew, v.). It would be interesting to ascertain in what way these plants reached England at that early period, and from what part of the American coast. George Lawson, Dalhousie College, Nova Scotia, Halifax, March 20.

NOTES FROM HUTTON HALL.

It goes without saying that the fruit forthcoming from this garden for some years past has held so conspicuous a place at the leading exhibitions that it has gained a representative position. At a time when there are outcries as to the produce of Dritish gardens in this department being swamped at all events in quantity by that of foreign growth it is gratifying to see that in a representative place like Flutton there is evidence of the present season's crops being fully equal to those of the past.

equal to those of the past.

Of Grapes when I visited the place in the latter part of April in the early house there was a good crop that would soon be ripe. Early Summer I tignan (Muscat de Saumur) was carrying a beautiful lot of nice bunches. This is a favourite with Mr. McIndoe; its quality, earliness, and free-bearing habit make it deserving of more general cultivation than it receives. The successional crops in the big roomy houses occupied by Vines are collectively very promis-In the late Hamburgh-house, which, in addition to the Hamburghs, contains Duke of Buccleuch, Golden Champioo, Foster's Seedling, &c., these, as also the Hamburghs, are all showing splendidly; the unusual quantity of big bunches showing give unmistakable evidence of the continued vigour of the Vines, and the extent of the ripening process to which they are subjected in autumn. house in which there is also a mixed lot, noticeable amongst them for their exceptional condition are Muscat of Alexandria, Bowood Muscat, Gros Colmar, Duchess of Buccleuch, and Muscat Hamburgh, the bunches set as full and regularly as possible. In the house wherein are located the principal late sorts, amongst them Gros Guillaume, Lady Downe's Seedling, Mrs. Pioce's Black Muscat, and Gros Colmar, are in condition such as it would be difficult to

Most of the Vines here are grown on the longshoot system, the effects of which are apparent in the size of the bunches. This method has now been sufficiently proved to show that, when combined with skilful treatment in other matters, it is the way beyond all others to continue getting big bunches out of Vines after they are past the ordinary age for producing them. The other chief essentials are manifestly liberal feeding, abundance of water to the roots, and no lack of means to ripen the extra strong wood which the treatment employed produces. Under the cold, chilly system of Grape-growing advised by some, the outcome would be a crop of big tendrils in place of big hunches. Mr. McIndoe is evidently one of those who realise the necessity for the large quantities of water which Vines require to keep them up to the mark, and without the ample provision he has at command it would be a difficult task to maintain the occupants of the extensive ranges here devoted to them, with the big inside borders, in the condition they are. When water has to be given by canfuls the roots are too often on short commons at the time they want it most. There is here a tank in the side of the hill, 200 feet above the garden: it is 100 feet by 30, and 6 feet deep; the supply, I believe, is inexliaustible. With the pressure that a head like this gives, and full means for its distribution in the houses a vast amount of labour is saved, and things that require it get enough.

PEACHES, like Grapes, are grown on an extensive scale, and are forced to come in earlier than Grapes. The first house is filled with fine trees : the earliest to come in, Early Beatrice, was all but cleared of the crop; the first were gathered on April 9: the remaining trees in this house were carrying a beautiful lot of fruit-amongst them Lord Napier Nectarine was noteworthy. In a large span-roofed successional house, filled with very big trees in fine order, there Is promise of an abundant crop.

MELONS are grown so as to have them in as long as can be, some of the first crop had been cut, more were ripe, and others were fast coming in. The two principal sorts grown are Best of All and Scarlet Premier, both seedlings of Mr. McIndoe's.

PINES .- In these times, when so many are giving up Pine growing, it is refreshing to meet with a well managed lot of plants, such as occupy the pits here devoted to them. The stock, in their various stages, from successions to those nearly ripe, are in fine order, those especially that are intended to come in in autumn are the right stamp of plants to produce fine

STRAWBERRIES .- The great extent of glass devoted to fruit culture, in roomy light houses, affords ample means for Strawberry forcing, which is well done.

Figs also are grown in abundance; in the spanroofed corridor that connects the principal lot of houses; they are trained on the roof, yielding abun-

ORCHARD-HOUSE,-In a district like this part of Cleveland, where few of the good kinds of Pears, Plums, or even Apples, can be depended on to bear satisfactorily, an orchard-house is both useful and interesting, especially when account is taken of the size and beautiful condition the fruit can be grown to in a structure of this description. Consequent on this, a house of this kind has been built; it is span-roofed, 165 feet long by 16 feet wide, and well stocked with Apples, Pears, and Plums, part planted out, the rest in pots. Some of the Apples are on Paradise stocks, others on the Crab; the Pears are part on Pear stocks, others on Quinces. Most of the trees were in full bloom, presenting a sheet of delicate colour. All the leading sorts of the fruits named are represented. Under the ridge was a shelf filled with Strawberries. Interspersed about the floor, where a bit of room was available, were Peas in pots; in fact, a house of this description can be turned to account in many ways.

Amongst decorative plants, Spiræa Aruncus is here forced in quantity; it is very effective either as a conservatory or room plant; both foliage and flowers are handsome. Lilium candidum, as a forced plant, is better done than I have before seen it; Dutch grown bulbs are used; they are potted as soon as they can be had (early in September), and are then plunged out-ofdoors in sea-sand, and as soon as they have made plenty of roots and begun to grow away they are moved to a pit, where they are brought on slowly with a little forcing; in this way the earliest come in about the beginning of April. In one of the houses others were coming on to follow, many of them with eight or nine flowers to a stem. Perpetual flowering Carnations are also well managed; the plants occupy the end of a light house, and have plenty of vigour in them, which is a reliable evidence of their ability to flower. A yellow sort named Stanstead Beauty, with a much freer habit of growth than is usually found in varieties of this now much prized colour, deserves

mention; it is a good bold flower and a free bloomer twenty flowers were cut from a single plant in a 7-inch pot in one week at the beginning of April.

Narcissus are great favourites at Hutton, especially the Daffodil section; the best of the bicolors, such as Horsfieldi and others of the group are grown in quantities in pots, and forced so as to keep up a succession; they are treated to about as much warmth as Crocuses and Snowdrops will bear.

Amongst the nice selection of Orchids the most noticeable were a fine plant of Phalænopsis Luddemanniana, with eight or nine crowns; Vanda suavis, and V. tricolor, both of which are large and strong Odontoglossum vexillarium, of which there are several examples remarkably strong; as also O. citrosmum, O. Phalænopsis, and O. Roezlii; Lælias, Cattleyas, Cypripediums, Dendrobiums, and Cymbidium eburneum, the last a fine specimen which grows and flowers well kept warmer than many growers find it to succeed well. T. B.

EFFECTS OF DIFFERENT MANURIAL APPLICATIONS UPON THE GROWTH OF FRUIT TREES.

IT is hardly possible, says Prof. Penhallow, * to gain a thorough insight into the cause of growth or of the diseases of plants unless we have first collected accurate data concerning the laws of nutrition and the effect of special food elements in different chemical combinations upon the growth of particular species and varieties; and it is thus certain that we cannot hope to discover the means of correcting or preventing an abnormal condition until such data are obtained.

Plants belonging to the same family necessarily present well defined physiological peculiarities which are common to all, and to this extent they would require similarity of treatment, but in individual cases we discern a more or less strongly marked departure from these general laws, which requires a different course of treatment for each member of the family. While this is stated to be true in the highest sense between the various genera it is also true, though perhaps in a less degree, with regard to different species or even varieties.

Considerations of this nature led Professor Penhallow to see the importance of a systematic course of treatment, by means of which the special action of different plant-foods might be noted as affecting different species and varieties of fruits when applied under the ordinary conditions of field cultivation. this purpose it was decided to establish an orchard, into which should be introduced varieties of fruit trees and Vines for experimental treatment, and it was further designed that the subjects should be selected (1) so as to include at least one of all the larger fruits; (2) on account of the special value of the fruit; (3) from its liability to disease; and (4) on general considerations.

With these guiding ideas in mind, the following trees were selected :- Quinces, Grapes, Peaches, Apples, Pears, Plums, and Cherries.

The manurial applications were arranged as

No. 1. Without manure.

No. 2. Farmyard dung.
No. 3. Chloride of potassium, dissolved bone and kieserite (sulphate of magnesia, 55.6 per cent.).

No. 4. Nitrate of potash, dissolved bone, and kie-

No. 5. Nitrate of soda, dissolved bone, and kieserite. No. 6. Sulphate of potash, dissolved bone, and kie-

Professor Penhallow says, although the experiments are of such short duration, yet the trees developed some striking differences under the various treatments, which he considered largely due to the direct results of the applications made.

It is first noted, that between the manured and the unmanured trees there was a marked distinction of luxuriance of growth, which was in excess in the former in almost every case; and unquestionably the result of proper food being present in considerable quantity, and available to the plant. Again, as between the trees treated with nitrogenous and purely inorganic manures, the former showed a markedly greater luxuriance of foliage and richer colour. In the case of the trees treated with stable dung, the

whole growth in several cases was more luxuriant than in those treated with mineral fertilisers.

With regard to the general effects of manures on regetation Messrs. Lawes and Gilbert aptly remark that "The general tendency of nitrogenous manures is to favour luxuriant and continuous growth, as distinguished from arrest and consolidation of that already formed; whilst that of mineral manures is to favour consolidation rather than luxuriance. Or, to put it in another way, a characteristic effect of nitrogenous manures is to favour the extension of foliage, and give it a depth of colour, whereas that of mineral manures is to aid stem formation and the production In fact, a relative excess of nitrogenous supply favours the extended growth of the organs of vegetation, prolongs their development, it may be, until the resources of the plant are exhausted, or the season past. On the other hand, a relative excess of mineral manures may bring on premature ripening. It is the proper adaptation of the two descriptions of supply to the current requirements of the plant, and of the season, that gives both full, properly proportioned, and well-matured growth.

Again, the excessively dark green colour of vegetation is indicative of a high percentage of nitrogen, an abundant formation of chlorophyll, but deficient carbon-assimilation, due to a deficiency of certain mineral constituents relatively to the amount of nitrogen taken up. In fact, there is, so far as the nitrogen available and the chlorophyll formed are concerned, so to speak, potential, but not actual growth.

Foreign Correspondence.

FLORICULTURE AT THE TURIN EXHIBITION .-A special department having been allotted to floriculture by the authorities, we may presume that an effort has been made to present a respectable front; if so, it has miserably failed-so much so that the floral exhibition would not be worth noticing at all were it not for the bearing which it has on floriculture in this part of the South of Europe.

A considerable space has been allotted to the exhibitors, forming a parallelogram, open on its northern extremity, and closed by a roofed gallery on the other three sides. The exhibitors are exclusively nursery-

men from Turin and its vicinity.

The principal effort appears to have been made with Roses, evidently appreciated at Turin as elsewhere. A large bed of standards in pots attracts the eye on entering, grouped so as to form an inclined plane, those in front being about 3 feet high, those in the last row behind about 5 feet. I never saw a more miserable lot of standard Roses; long sticks, with a small bunch of leaves and twigs at the end, and from two to half-a-dozen small half-grown Roses. Many bore names that we never see at our exhibitions in England, and I presume know but little of. Some of our exhibition Roses, however, were represented, but by such specimens as to be all but unrecognisable. There were also several groups of dwarf pots, but all beneath mediocrity, small and ill-grown. It makes me sigh to see little buds and flowers of Marechal Niel and Chromatelle (Cloth of Gold), placed in the post of honour, with apparent pride, when I thought of the masses of these beauti'ul Roses, as large as plates, which I had left a few days before in my garden at Mentone.

The Azaleas were numerous and in good health, but there were few equal to our first-rate kinds; they would have been considered a very second-rate collection in England. They were grown just as Nature bid them—in straggling bushes, without form or shape. We are so accustomed in exhibitions and plant-houses to see Azaleas trained so as to present a mass of bloom, that we feel disappointed with straggling, partly-flowered bushes, although such plants may in reality be more natural and most worthy of praise.

A great attempt appears to have been made with Pelargoniums of all sorts-zooal, double, and fancy. Their inferiority, however, to those we grow in England was still more marked than with the Roses. They were mostly poor stunted plants, with poor flowers, plants that would be all but unsaleable in Covent Garden at 6d. apiece. The failure to grow them respectably was the more marked as they were all pretentiously marked with a name, as having great floricultural value. Frequently these names quite unknown to me, but I recognised by the name some of our best exhibition kinds, although I ccr-

^{*} Abridged from Professor D. P. Penhallow's report of the experimental farm at Houghton, Ne v York.

tainly should never have recognised them by the flower, indeed many seemed to be reverting to the primitive African forms, which we see in the Pelargonium-house at Kew, so meagre, poor, small, and characterless were the flowers.

There were some good double Petunias and other ordinary spring flowers, such as Nasturtium, Cineraria, Silene, Mimulus, but none in any way remarkable, quite the reverse. Then there was a bed as a central decoration, consisting of ordinary Palms, Aralias, Dracœnas, Crotons, Marantas, Phormium tenax (in the place of honour), one small Pandanus javanensis, and a few Ferns; altogether they constituted a lot such as would be sent out in London to decorate the staircase in a second-class rout.

As these flowers had probably been ten days in the ground they must have been partly grown under glass, but that is no explanation of their defective development and character. They were exhibited by the leading nurserymen of the locality and, such as they are, will no doubt be rewarded by gold and silver medals, as having attained as great perfection as is attainable ! The only conclusion that we can come to is that floriculture is at a low ebb in this part of North Italy, and that its inhabitants are not acquainted with the perfection it has attained in England. I do not think that the climate is in fault, if I may judge by the results that I attain at Mentone on the Genoese Riviera, where Roses and Pelargoniums, indeed most flowers, assume splendid proportions if proper care is taken of them winter and summer, as at home. They must not be left to themselves, as I believe is pretty much the case in most Italian gardens. There was a good collection of Oranges from the South of Italy, Otranto, Sicily, &c. All were thick-skinned, and must be very interior to the thin-skinned one from the Azores, such as the St. Michael's Oranges, which we principally consume in London, and which I am introducing to the Riviera, as recently described in this journal.

I did see one novelty to me, viz., Asparagus forced in pots. Many pots, not large ones, contained some twenty sprouts, indeed they were crowded with them, each pot producing a dish.

I must not conclude without stating that the Turin Exhibition generally is a great success. This success is the more meritorious as the Exhibition is entirely Italian. Singularly enough, no other nation has contributed to it, and yet the want is not lelt, so fully have the Italians themselves responded to the call in every branch of manufacture and art. It proves that the Italian nation is advancing very rapidly in every branch of human civilisation and knowledge. There is also the evidence of great national wealth. Most truly have the Italians been striving of late years to justify their proud motto, "L'Italia fara da se." By abstaining to come to this Exhibition the other nations of Europe have enabled them to show that they now possess within themselves all the elements of a great and prosperous nation. The Exhibition more especially shines in the fine art department; there are 2000 pictures and 500 sculptures, many of which are very good indeed-worthy of Italy's former days. She is evidently retracing her steps. J. Henry Bennet, M.D., Turin, May 20.

LINARIA STRICTA.

A CHARMING Linum, or Flax, seeds of which I collected in the neighbourhood of Catania at the foot of Mount Etna, and have brought into cultivation. This annual species of a very numerous family is the nolly fresh yellow representative that is worth cultivation, and which is a pretty addition to our tender annuals. Planted with Linaria maroccana, or with L. carminea, or with L. reticulata, it has a pretty and lively effect, and lights up a group uncommonly. The plant, which grows to the height of about a foot, has numerous branches of a loose habit, with plenty of foliage, forms a perfectly charming bush of a very floriterous character. The shoots are upright, and terminate in a spike of bloom. The leaves are linear or strap-like, smooth, or nearly so, light green or emerald, opposite, or verticellate, the flower-spike close, large and full, the petals much larger than the callyx, brilliant sulphur, with golden-yellow mouth, brownish-striped ground, and long blunt spur. It flowers from May till late in the autumn, and sometimes bears a full second crop of flowers in July and August if the shoots that carried the earliest flowers are pruned off. It is best sown where it is intended

to stand in March, or it can be sown in autumn and wintered in a place free from much frost. The plant has equal value with the above-mentioned allied varieties, and is conspicuous from its lovely colouring. Garten Zeitung.

EALING PARK.

THIS estate, once renowned for its superb horticultural produce when it was tenanted by the late Mrs. Lawrence, is now to a very great ex tent in the hands of the builder; the place has been cut in twain by means of a fence running from east to west, starting from Elmsham, opposite the cemetery in Ealing Lane, on the road to Brentford, and extending to Windmill Lane, a main thoroughfare from Little Ealing to Brentford. Roads are also cut in the same direction and crosswise, and already at the southern extremity a line of small villas has been erected, and some are already inhabited. The dividing line of fence saves so far nearly the whole of the pleasure-grounds; it passes along close by the side of a noble Cedar of nearly 250 years' growth—now, alas 1 in extremis, shorn of many of its leading branches, and gradually progressing towards death—and passes close to the southern extremity of the fine avenue of Cedrus Deodara, a representation of which is given on p. 705. The mansion and a portion only of the pleasure-grounds now constitute the Convent of the Dames de Nazareth, the dividing line from the park being a little way east of the mansion.

On that side-on the south side-the boundary of the Convent grounds passes right across the Deodar avenue in a straight line eastwards, leaving outside of it the pond, and many of the fine specimen trees. Thus, between that portion already laid out for building purposes and the southern boundary of the Convent grounds there is a broad strip filled in great part with trees and sbrubs, though happily not open to the public, though marauders find their way within. Many of the fine specimen trees of a rare character, planted by Mrs. Lawrence, still remain : some of them were gifts from Lord Auckland when Governor-General of India; but it may be soon when some of these, and the Willows raised from slips brought from the tomb of Napoleon at St. Helena, will go down before the onward march of the builder. The grounds attached to the Convent are in a sadly neglected state, which is to be regretted for the sake of old associations with the place, and the vineries and plant house used when the place was occupied by Mr. Budgett are let off to a neighbouring garden. The small Italian flower garden has disappeared altogether.

Sir Trevor Lawrence kindly informs us that the Cedrus Deodara avenue was planted by his mother, Mrs. Lawrence, in the year 1842 or 1843, or thereabouts-Sir Trevor writes from the best of his recollection, not having any note of the date. The Cedars grew and flourished without check until January, 1867. At that time Ealing Park was occupied by J. 1807. At that time Eating rate was occupied by J. S. Budgett, Esq. "It was a season of intense frost, especially in the Thames Valley, and the Deodars were a great deal injured. It seemed as though a cold blast had struck along the avenue, cutting the trees here and there at varying distances from the ground, but not killiog any. It is of course well known that Deodars grow at a great altitude in the Himalayas. They are seldom found growing vigorously under 6000 feet above the sea, and they thrive up to 10,000 or 11,000 feet, if not higher, when the winter temperature is very low, but the trees are protected by snow. In the valley of the Chenab River I have seen magnificent trees at 8000 or 9000 feet, among them many 30 feet in circumference, some 36 feet. The Deodar timber is probably the finest deal, if so I may call it, in the world; and being full of a resinous oil, it possesses extraordinary durability. The Deodar forests are now carefully preserved and looked after-twenty-five or thirty years ago they were ruthlessly cut and hacked about. 'Deodar' is the native name, and means 'God's gifts.'"

Mr. William Cole, of the Vineyard, Feltham, who was gardener to J. S. Budgett, Eq., in 1867, states that the frost which did so much damage to the Deodar avenue happened in the early part of January of that year, when the thermometer in the gardens showed 45° of frost. The previous summer was wet and sunless—trees of all kinds ripened their wood badly. Up to this time the Deodars were perfect

specimens: but after that frost some of them lost nearly all their leaves, and did not show any signs of breaking until June, and then one quarter of the branches did not break at all. The Araucarias in the grounds lost all their bottom branches; all the fine Bays were killed with the exception of one; evergreen Oaks of marvellous size were killed to the ground-in fact, every bit of Laurel, Arbutus, &c., suffered in the same way; and as showing the extent of the damage done at Ealing Park, Mr. Cole further states :- "I put a man on piecework to faggot up the prunings, and there were 1800 faggots: the slaughter was fearful all over the place." The trees forming the avenue have now become pretty well furnished again, but it is to be feared that their destruction is imminent.

The view on p. 709 is taken at the north end of the Deodar avenue, near to the point where the visitor formerly emerged from that portion of the ground occupied by the vineries, &c., on to the pleasure grounds. Standing on the spot represented in the foreground of the picture, and turning to the right, the visitor looks southwards along the length of the Deodar avenue; and to the left, northwards, to the temple seen at the extreme end of the representation of the avenue. Round it to a considerable extent are huge bushes of Golden Hollies, that take on a superb colouring. Looking through the stone archway covered with Ivy, a portion of the west front of the mansion is seen, together with a portion of the conservatory. When occupied by Mr. Budgett, this portion of the grounds was beautifully kept, as the importance of the place required. It is yet charming in decay and neglect. In the dense growths of shrubbery, and in the umbrageous growth of the tress, hundreds of singing birds find a congenial home, and they warble forth their songs as if happy beyond expression, and careless of the rapid approach of the town that bids fair within the next few years to circle this place with a cordon of dwellings, and obliterate the rural aspect which has hitherto characterised this well known demesne. R. D. [Our illustrations are from photographs by Mr. Vernon Heath. Ed.]

The Posery.

Roses in Pots at Shirecliffe Hall, Shef-FIELD. - Rose culture always possesses an amount of interest, and in the neighbourhood of large towns probably increased in consequence of the difficulties of growing good examples; therefore a few notes on the Roses grown at Shirecliffe Hall, Sheffield, may be acceptable to the readers of the Gardeners' Chronicle. Those who only know the smoky metropolis of cutlery by the glimpses obtained in passing through the town by the Manchester, Sheffield, and Lincolnshire Railway, will never expect floriculture to flourish in the district; nevertheless, many triumphs are achieved in its various branches by the skill and perseverance of its gardeners. The above collection of Roses (which is only a small one) is remarkable for beauty and vigorous health; each plant is clothed with fine soliage, without the least blemish. They occupy the back portion of a lean-to house, and although only small plants that were potted last year, are everything that can be desired for the short time they have been in training. Both bushes and standards are represented. The largest specimen, Magna Charta, is 4 feet in diameter, and bears about forty fine flowers, of good colour and shape; Edouard Morren is a very good plant, but not quite so large as the above variety, it carries a number of excellent blooms; Madame Rivers is also grown as a bush, about 3 feet in diameter, and when I saw it a few days ago, each shoot bore a fine well-developed bud just expanding, and would shortly produce fine blooms; Jules Margottin is laden with about forty large flowers of a bright rich piok, good in colour and substance, and rich in the old-fashioned perfume that too many newer varieties lack; Céline Forestier is another good example, with beautiful, well-formed, pale yellow flowers. Amongst the standards (which I have previously stated are only small) is Dr. André, with eighteen fine blooms, of a rich bright red; Madame Victor Verdier has thirteen fine blooms, 4 to 41 inches diameter, of a rich deep crimson or cerise hue; La France, a small plant with seven fine shoots and eleven flowers, and expanding buds, of a beautiful rich blush tint, very delicate and handsome. Madame Lacharme has a

good head of fourteen strong shoots, bearing sixteen open and expanding very pale and elegant flowers. Marquise de Castellane has twelve shoots, each bearing a fine bright rose-coloured bloom; the foliage of this plant is exceedingly thick and leathery, in fact, the whole of the plants are clothed with fine healthy foliage, speaking unmistakably of their strength and vignour. Several plants of the old Persian yellow Rose are very effectively distributed amongst the other specimens, that give a very pleasing contrast with their small foliage and numerous yellow flowers, to their large-foliaged and more fashionable sisters. Many other varieties are grown, and produce large numbers of flowers, the most notable being Maréchal Niel, Gloire de Dijon, and Niphetos, established plants of the two former varieties producing yearly

cottage with a hundred or more expanded blooms; but the weather is too hot, and it droops and cuts but a sorry figure beside the vigorous hybrid Bourbon. At Maresfield, on a gabled cottage in the nursery grounds, there is a splendid climbing Devoniensis with magnificent blooms. The front of the cottage, however, was the most interesting on account of the two grand old Banksias with their hundreds of trusses of yellow and fragrant white blooms, resembling in form the double-blossomed Cherry. The foliage of both these old and somewhat neglected favourities is evergreen, and just now quite charming in its glossy, bright green freshness. The plants are thirty years old on their own roots, and have gnarled stems as thick as a man's arm. The old monthly China is still a favourite, and very charming it

Elairii No. 2 is occasionally used, but the most popular favourite for its fragrance and continuous blooming is our old friend Gloire de Dijon. Maresfield is famous for its Rose nurseries; in early July these must be a treat to rosarians. T. W., Harrow.

The Benbageous Bonden.

PAPAVER ORIENTALE AND P. BRACTEATUM.— Those who cultivated hardy plants more than thirty years ago can remember two distinct forms of giant perennial Poppy, known respectively as P. orientale



FIG. 134.—THE DEODAR AVENUE AT EALING PARK. (SEE P. 704.)

large crops of fine flowers. In several of the cases mentioned the flowers were not all opened at once. Taking into consideration the disadvantages of growing Roses in such a smoke-laden atmosphere that is obtainly charged with injurious gases, the whole is highly creditable to the skill and perseverance of the head gardener, Mr. J. Udale. A determination to succeed under difficulties often leads (as in this case) to good results, and should encourage those placed under similar conditions, to persevere until the object sought is obtained. Y. H. S.

ROSES ON COTTAGE WALLS.—The prettiest displays I have seen this spring are at Uckfield and Maresfield in Sussex. One cottage in the High Street has a magnificent Charles Lawson with huge rosy blooms, and an abundance of healthy bright green foliage. There is a Maréchal Niel on the same looks as it peeps in modestly at the latticed casement. The crimson is pretty, but not so free. Gloire de Dijon looks washed out and unhappy in the continued hot, dry weather; it will probably have its revenge later on. Its primest time is in September, when the second crop comes on, and the gossamers wreath it in the early morniog with diamond necklaces. The grandest yellow Rose I have seen on cottage walls, and by some days the earliest, is the gorgeons Solfaterre. The early shoots are of a coppery-green, affording a delicious contrast to the fragrant gold and sulphur cloud of blooms. It was budded on a Brier, and made shoots of from to to 12 feet in length year after year; pruning was confined to thinning out the branches, themselves left untouched. The old Maiden's Blush is still trained on some cottage fronts, and very pretty and fresh It looks with its light green foliage. Its season is very short.

and P. bracteatum. The former was then the more common in old-fashioned gardens. It grew in large patches, producing an abundance of light orange-coloured flowers on rather weak stalks about a yard ligh. The flowers were generally not quite straight on the stalk, which was more or less bent in some part, and the whole plant looked rather untidy. This P. orientale is figured in Curtis' Bot. Mag., vol. ii., tab. 57.

The other, P. bracteatum, was a far finer plant for garden decoration, throwing up large stiff stalks, on which the flower was supported quite upright. The flower was larger, and the petals stiffer, than in P. orientale, and the colour bright military red. The height of the stalk was from 4 to 5 feet. It derived its name from large leaf-like bracts generally present just beneath the flower, which were usually absent from the typical P. orientale. Both kinds

had large black spots at the base of the petals, inside; these were, however, not always present.

I have described these plants as they used to be thirty years ago, using the past tense; for there are no longer two varieties only, but many, and the old types are connected by a number of intermediate forms, either hybrid or natural, so that two names are no longer sufficient if the distinction is to be main-Botanists probably make all belong to one species; and I observe that whilst in Don's Botany, published in 1831, there are twenty-seven species of Papaver described, Bentham and Hooker have reduced the number to fourteen. Several complaints have been made to me within three years, that the old bright red P. bracteatum has become scarce, and that the seed which is now sold under the name produces only orange-coloured flowers. I still have the same plants of it which I grew thirty years ago; but I must own that the finest Poppies I have, and the finest I see in other gardens, both in size of flower and in brightness of colour, are orange-coloured. These have stalks as stiff, and bracts below the flower as large, as any with more scarlet flowers; and they expand their petals more fully, making when open a better cup. These Poppies have great merit as backrow garden flowers, being very showy from the middle of May to the middle of June. They like a deep light soil, and when once planted will grow for twenty years or more in the same spot, without further attention, though they like top-dressing. Side shoots may be taken from them at the end of winter to make fresh plants, but they are most easily raised from seed, which may be sown under glass in autumn, so as to give the young plants time to grow to a good size before the heat of summer causes them to lose their leaves. They seldom flower till two years old. C. IV. Dod, Edge Hall.

FORESTRY.

PRUNING.—The present month is perhaps preferable to any other for pruning, foreshortening, or disbudding coniferous trees. Great diversity of opinion, however, exists as to the proper season at which the operation should be performed, as well as to the oecessity for pruning, but most arboriculturists are in lavour of spring or early summer, as the wounds caused by amputation heal over more quickly, and are consequently less liable to bleeding then than at any other time. Hardwood trees may also be pruned with safety during this mouth, care being taken not to perform the work too severely. The removal of contending leaders, shortening lower and straggling branches, and, where necessary, removing others that have been previously shortened, will be all that is required at present.

BARKING .- The barking season commenced rather unfavourably, with a continuance of cold easterly winds, but since the last week of April the weather has been almost all that could be desired, and the work in most districts, if not already finished, must now be in a very advanced state. As soon as convenient after peeling, the clearance of timber, firewood, and branches from the falls should at once be set about, more especially where the stalls are intended for coppice. Advantage should also be taken of dry weather this month to have all the Oak trees carted to the saw-mill, timber-yard, or wherever their destination may be, as they have frequently to be dragged a considerable distance before being laid on the cart or timber carriage. If this be done in wet, slushy weather it is not only unpleasant for the workmen but highly injurious to the saw when the timber is being planked, from the gritty mud which adheres so firmly to the bark. Repair woodland roads that have been cut up by the cartage of timber, and scour all drains in their immediate vicinity.

WOODLAND.—Voung plantations on ground given to the growth of rank vegetation should be well looked to, and all rough herbage, such as Brambles, Bracken, Gorse, and grasses, should be cut from around the plants. In the woodland little can now be done, beyond clearing and removing brushwood, binding faggots and cordwood, and felling dead or unhealthy trees, which at this season are easily recognised.

REMOVING IVY.—This is the proper time to go over plantations and cut off Ivy, and as in some districts this work is attended with considerable cost, the following method, which has been extensively practised on this estate, may be suggested :- Half-adozen boys with a man in charge are employed at the work. One of the boys goes before with a hand-bill, or small hatchet, and carefully cuts the Ivy around the bole of each tree, at a distance of 3 or 4 feet from the ground, the others following with light mattocks grub up the roots for a couple of feet in circuit round the base of each tree, also removing it from the trunk up to where the first boy cut it through. It is a work requiring great patience and perseverance, and may be thought by many as an expensive mode; but in plantations such as ours, where the ground is literally carpeted with Ivy, it is of little use removing it from the trees without to some extent clearing the ground around each. That Ivy luxuriates so here can only be accounted for by the humid atmosphere being congenial to its growth, this estate being both mountainous and maritime.

NURSERY WORK.—Owing to the fine growing weather weeds are unusually plentiful and vigorous, and will require great attention to keep within bounds. To prevent the weeds seeding it will be necessary to keep the hoes going during dry and hot weather. Hand-weeding of seed-heds is best performed during damp weather, as their removal at that time is not nearly so injurious to the young plants as when the weather is dry and sunny. Collect and sow Elm seeds, and where necessary store up others for early spring planting. If the weather is dry, an occasional watering will greatly assist early germination of the seeds. Those seeds intended for spring sowing should be carefully dried previous to storing, as any default in this way is attended with injurious results as regards the germinative properties of the seed.

Composts intended for use during the summer and autumn will now require turning, their value as manures being much enhanced by the addition of a liberal supply of lime. Vacant plots in the nursery should be heavily manured and roughly dug over preparatory to autumn filling. Evergreen trees and shrubs may still be successfully removed by lifting with good balls of earth, and attending to a regular course of watering until they become thoroughly established in their new positions; unless in cases of extreme necessity it is, however, better to defer such work until the autumn.

FENCING.—Continue the erection and repairing of fences as recommended last month, and tar or paint all iron and wire fencing, tree-guards, gates, and wooden erections of various kinds. Rustic work, including arbours, bridges, and seats, should also receive their annual overhauling, and he made clean and fresh by a coating of paint and varnish. See that woodland fences are in a good state of repair, as cattle are usually turned into their summer quarters during the present month.

IIEDGING.—A slight pruning or switching vill be beneficial to such bedges as are apt to become bare and open at the bottom. Ornamental hedges that receive two trimmings annually should receive the first during the early part of the precent month, which will enable them to push forward and ripen a second growth before winter sets in. The necessity of keeping down weeds along the line of fences cannot be too strongly or often enforced on those having the care and management of such. The evil results arising from neglect of this are too well known to require comment, and should be carefully noted by those in charge of the work.

ROADS AND WALKS.—Beyond hoeing, edging, and clearing carriage drives and policy walks, little else will be required at present, more especially where previous instructions regarding their management have been attended to. Previous to using the edging-iron it is a good plan to cut a strip of grass, say 3 feet in width, along each side of the roads, which will not only impart a more finished appearance but prevent, to a great extent, the grasses from shedding their seeds along the margins. In using sall for the destruction of weeds it should never be placed within a short distance of the verge or edging, as much camage is frequently occasioned thereby. The results of salt as a weed-killer are most marked during warm, dry weather.

GENERAL WORK.—As soon as workmen can be spared the preparation of ground—draining, fencing, and pitting—for planting next season may be proceeded with. Clear out drains and watercourses in plantations, repair roads, and keep grass rides clear of Nettles and other rank vegetation. Nothing tends

to enhance the value of timber like good roads, and they ought never to be neglected. Those who burn charcoal for home consumption should now set about the work, as the men employed are all the better of long daylight while watching the charring of the kilns, Mowing and cleaning in pleasure grounds, as well as the pinching and pruning of trimmed Laurel beds and choice plants in the shrubbery, should now receive attention, A. D. Webster, Penrhyn Castle, North Wales.

Prchid Notes and Hleanings.

ORCHIDS AT ROSEFIELD, SEVENOAKS .- Mr. De B. Crawshay's neat little collection gives a good example of the perfection to which Orchids may be brought even where but little space is devoted to them. Whether in or out of bloom, the sleek, contented look of his plants, makes them pleasant things to contemplate, for, after all, it is only unhealthy or badly-grown plants which are not handsome when not in bloom, and all who have witnessed the affectionate touch the Orchid-grower gives a thriving favourite must know that to him and his confreres at least there is pleasure in them, either in or out of flower. Probably the two best examples of cultural skill on the place are two magnificent specimens of Disa grandiflora, the one bearing eight and the other six strong flower-spikes, some of them three-quarters of an inch through at the base. The plants are perfect and unblemished by thrips or any other insects, and soon they will be radiant with their scarlet flowers. While so many of this beautiful Disa have been smothered and drawn into weak flowerless growth in close houses, Mr. Crawshay has been getting his into their present state of perfection by growing them in a shady but light corner of the greenhouse, along with Pelargoniums, &c. are copiously watered all the year round, and carefully watched that aphis do not get hold on them; and beyond this they occupy their quiet corner without giving any trouble notil the buds are well advanced, when they are removed to a cold pit outside and still watered freely. This removal gives better size and colour to the flowers, and gives the plants a change until the end of the summer, when they are returned to their old quarters. Cattleyas and Odontoglossums are the specialities at Rosefield, but the Phalenopsis, in their tiny house, are sound and strong, and are yet giving a few flowers, which look very pretty arching over those of Aërides War-Cypripedium niveum, and other warm-house Orchids. The Cattleyas are contained in an ornamental conservatory-built structure, with curved roof. It is rather loltier than is generally considered good for plants, but we have lately seen Orchids thriving well in several houses with the same supposed defect, and here the condition of the Cattleyas and the progress they make year after year seems to say that so long as the plants get the required amount of light the height of the roof is not of so much consequence. For the display of bloom the Mossies have the greatest part of the show, and their quality is beyond compare, the size of their flowers and the diversity of their colours making them of the first order of merit, and at the same time very difficult to describe. In bloom with them are a few good C. Mendelii and C. Warneri, and not in bloom are some very fine examples of C. Dowiana, C. aurea, C. gigas, and others of that section, all in grand health, and many of them furnished with very stout flowering growths. Mr. Craw-shay grows this section of Cattleya well, chiefly in baskets suspended from the roof and near to the glass. baskets suspended from the roof and near to the glass. The Odontoglossum-house has a very fine specime of O. Marshallianum, some good O. Alexandræ, O. Pescatorei, Masdevallias, Ada aurantiaca, &c., in bloom, and quantities in bud, and all, like the rest of Mr. Crawshay's Orchids, looking perfectly happy.

ODONTOGLOSSUM CRISPUM STEVENSI.—A form in which the flower-segments are beavily spotted with chocolate-brown spots. Orchid Album, t. 127.

MASDEVALIA SCHLIMII. — A figure of this is given in the Botanical Magazine, 1884, t. 6740. It was figured and described in Gardeners' Chronicle, 1883, i., p. 532, f. 80.

SACCOLABIUM GIGANTEUM VAR. ILLUSTRE.—A variety with the flower-spike much longer than in the type. The flowers also are larger and less closely arranged, while the lip is more deeply coloured. Illustration Horticole, t. 517.

The Flower Handen.

EVERY effort should now be made to forward the work of bedding-out with all possible speed, so as not only to enable the plants to establish themselves early in their summer quarters, but the sooner this work can be completed so much the sooner can other equally pressing and important work be attended to. To those who have but small flower gardens to furnish, and who do not adopt spring bedding, the work of summer planting is not a very formidable task; but where the garden is large, and a continuous display is required in spring, summer, and autumn, the tax and strain on the gardener and his forces at this season of the year is often very great, so much that, even with the utmost care, quick despatch of work, and the most methodical arrangements, some of the other departments in the garden which also require special care at this season, suffer con-siderably for waot of timely attention. This pressure does undoubtedly sometimes cause the work of preparing the beds and transplanting to be hastily and improperly performed, and the result is failure and disappointment. Every detail in the flower garden, especially at this season, should be duly and carefully carried out, not only in providing the most suitable soil or manure for the special requirements of the different plants, but also in having the soil in the most suitable condition in respect to moisture, and in taking care to compress the soil firmly round their roots in planting. In preparing the beds, care should be exercised not to introduce too much manure, or exuberant growth with little bloom will be the result. It is better to substitute fresh loam, and give the required stimulant by administering liquid manure, so as to produce the desired growth, and to sustain the plants during the flowering period. As the spring plants are removed they should receive proper care, instead of being thrown carelessly aside or heeled in roughly without water or shade till half of them are dead. should have the blooms removed, and then he carefully divided, transplanted, watered, and shaded till growth recommences, and though these details will occupy somewhat longer time than if roughly and hastily performed the results will be so much more successful and satisfactory.

AS SUB-TROPICAL AND FINE-FOLIAGED PLANTS occupy a very important part in the summer decoration it is well that special attention should be paid to their requirements, if anything like a good effect is to be obtained from their use. In the first place they will not succeed in elevated or exposed positions without an efficient screen from cutting winds. It is also necessary that they should have an abundant supply of moisture as well as perfect drainage. The soil in which they are planted should also be rich and light, and although sheltered from wind they should with few exceptions be exposed to the full influence of the sun. As they are much more effective in bold masses or well defined lines than when planted in insignificant patches, plenty of space should be allowed for their full growth, and where the garden is limited it is better to plant the more moderate growing varieties than the larger kinds, and as their chief beauty lies in the full development of each leaf proportionate space should be given when transplanting according to their size. In combination with the ordinary bedding plants, especially when the more graceful kinds are used, they are sometimes most pleasing, as they not only tend by their varied outlines to break the usual flat surfaces, but they also relieve by their cool tints those brilliant masses of colour which, although they may startle and surprise, seldom perfectly please and satisfy the onlooker.
Their most natural and most effective position, however, is perhaps in sheltered yet sunny dells, planted in isolated and by no means formal groups or masses at sufficient distance so as to allow of some low creeping plants being planted at their base, which will not only cover the bare soil underneath them, but which will at the same time act as complementary companions to their more imposing neighbours.

HERBACEOUS BORDERS.—Attention should now be paid to these, not only in keeping them clear of weeds, but also in timely thinning, staking, and tying; the surface of the ground should he frequently loosened, and occasional top-dressing of well decomposed manure should be given, as well as repeated waterings with liquid manure. As the foliage of bulbs dies away, these blanks may be filled in by sowing or placting over them choice and suitable annuals. Roses should receive abundant supplies of liquid manure during dry weather; the surface of the beds should be kept loose, and an occasional mulching with well decomposed manure will also assist their growth and the full development of their flowers. They should he kept free from insects, and the flower-buds should be freely thinned, if large blooms are desired. T. S. C.

Che Pitchen Çarden.

THE refreshing rains of Sunday morning last enabled us the following day to make good plantings of Brussels Sprouts, Cauliflowers, Cabbages, Snow's Superb Winter White Broccolis and Lettuces, and to prick out into nursery beds young plants from later sowings 4 to 5 inches apart every way to grow on for transplating later in the season. If Winter Greens are not already pulled up, and removed to the refuseheap, no time should now be lost in doing so, and in getting the ground manured and dug, so as to be in readiness for other crops, as, for instance, Peas (of which a good sowing of Ne Plus Ultra and British Queen should be made forthwith for use in September and October), Broad Beans, Spinach, &c.

TRANSPLANTING ROOTS,—Advantage should be taken of showery weather to proceed with the thinning-out and transplanting of Onions, Beetroot, and l'arsley—which is an operation that should always be done if possible during damp weather, because then the young plants not only draw and transplant better and with more expedition, but they are obviously less subject to check than if the work has to be performed when the ground and atmosphere are both in a dry state the ground and atmosphere are both in a dry state the thinning and transplanting of the above roots is a simple one; but nevertheless is not well known, and consequently not so frequently practised as should be. It is as follows:—

ONIONS.—As soon as the young plants are large enough to handle, and the nature of the weather permits of its being done, they are thinned to 2 or 3 inches apart in the row, and the blanks, if any, are filled up as the thinning is proceeded with, taking care in planting that the holes are made deep enough, so that the fibrous roots, which should be shortened back a little, may not get bent when transplaoted, and that the bulbs are not buried deeper in the soil than they had been before. I am aware that most growers allow greater space between the individual Onions than we do, with the obvious intention of obtaioing larger bulbs, but for all ordinary purposes 2 or 3 inches between each bulb in the row will be found sufficient, it being perfectly astonishing to what size the Onions will grow, pushing each other out of the way as they grow into the 12-inch space between the rows. Moreover, I find, as most gardeners do, that medium-sized Onions keep better and are more economical in the using than large ones. In thinning the crop we leave a few of the outside rows to be thinned, as required for immediate use.

BEFROOT, —Half our crop is in some seasons obtained from transplanted plants, which, in every particular, are as good and well grown as those not so treated. The one essential point, assuming that the ground is of the right description, and has been properly prepared for the young roots, as in the case of seed, is to make the holes deep eoough for the young roots to be transplanted in their entirety, and about the same depth in the soil as they were before, without being curved in the process of transplanting, as in that case deformed roots will be the result. The advantage above referred to consists in this—that the treatment of the roots is accommodated to existing circumstances, which will admit, say, of ten cows being sown at the proper time; the whole space which it was intended to ernp with Beet being then, and for a month or six weeks afterwards, occupied with other crops: this ground to be subsequently related from the same sowing.

With other tops: This gains to be be exceeded, planted from the same sowing.

We transplant fifty row without any loss from having small or deformed roots. The same course can be adopted if necessary with the Onions, provided the transplanting is carried out carefully and at the proper time, that is, when the bulbs and roots are quite young and the ground moist, and that the roots until they have become established. Tarsley, too, through some cause or other, is not so generally transplanted as it deserves to be; not but that it will, like the Onion and Beet, do equally well if the necessary

number of rows is sown at one time; but as a matter of economy a small patch of seed could be sown about the first week in March, and two months later the requisite number of rows transplanted therform, which plants will grow freely, and exhibit as little tendency to run to seed as those sown and afterwards thinned out.

Lees.—This in some places is an important crop, and in many gardens it might be reodered so by giving it more attention than it generally receives, and which its merits as a culinary plant unquestionably entitle it to. The plant delights in a rich, stiff, loamy soil, and we practise the following method as to transplanting, which we have found answer very well indeed, fyiz.—In an open situation and well-manured and deeplydug piece of ground, drills are drawn similar to those made for Peas, about 18 inches apart, and in these holes 2 or 3 inches in diameter are made 9 or 10 inches apart in the rows, and in these the plants are placed upright, allowing sufficient earth to cover the roots to fall into the holes in the process of planting; and subsequently the soil is gradually washed into the holes by the rain and by the use of the hoe between the rows, care being taken not to bury the hearts of the plants. When the Leeks are planted water should be given them, and occasionally afterwards until the least have taken to the soil, after which they might have an occasional watering with liquid manure. Grown in this way Leeks with large and well blanched stems are obtained. We have also grown the Leek satisfactorily in trenches prepared as for Celery, and the soil drawn to the plants as they increased in growth, and until the trenches are made level with the rest of the ground.

Make now a sowing of Colewort for winter use, and as soon as the Celery plants from the second sowing become fit for planting out, let them be transferred to the trenches which have been prepared as recommended in a former Calendar. II. W. Ward, Longford Castle Gardens, Wilts.

The Bardy Fruit Garden.

THE unusually dry weather and high temperature most favourable to the propagation of all kinds of insects, and every means must be adopted to keep their numbers in check. In making up mixtures for their destruction, it should be borne in mind that soft water is by far the best for diluting insecticides, and, failing that, soap-suds can be utilised for the purpose, or an ounce of soft-soap added for every gallon of water, and to this add the killing mixture recommended in a previous Calendar. A thorough wetting is the principal thing to aim at, so that the trees are best syringed when the sun is low, and a thorough washing given next day with clear water to wash off the feeble and dead insects. We have found the tobacco-juice manufactured by Messrs, Corry & Soper, and recommended in last week's number, p. 678, to be of excellent quality, and invaluable as an insecticide.

in last week's number, p. 075, to be of exceining quality, and invaluable as an insecticide.

The leaves affected with curl on Peach trees had better be picked off. Gradually thin the shoots of this year's growth, but not so as to expose the fruit just yet to the full blaze of the sun. Apricots will require looking over—stopping brenstwood and keeping a sharp look-out for the grubs that lie rolled up in the leaves. Pears trained on walls, as well as those grown as pyramids, will need constant pinching to keep them in bounds and save the knife later on. See that newly planted trees do not suffer from want of water at the roots; a thorough soaking, followed by a mulching directly afterwards, to help in retaining effect. Strawberries, in the absence of rain, will require watering, using a pot without a rose, and an effectual soaking is wanted, more especially on south borders and in light soils: the north borders will take care of themselves for the present. The Kaspberry will also require attention: in many cases watering and mulching will be required, this being a a surface-rooting plant that soon suffers in dry weather.

weather.

See that the Strawberries which have been forced do not stand about roasting in the sun, but quickly plant them in well manured ground at once, and be sure to put them in deep enough, as oftentines the soil settles, and the plant is left high and dry at the mercy of the weather. The Vines on walls are now shooting away strong from each spur; only let one shoot grow, and rub off the others, giving preference to those showing fruit. Green Goseberries are now being picked both for tarts and bottling; in gathering them first go over those bushes which are heavily enopped with fruit and gather one-half. This will enable those left to swell off more freely, and keep a close watch on the first appearance of the caterpillar, and have the Hellebore pull at hand ready in case of need. Y. Rutt, Eridge Cattle, Sursex.

APPOINTMENTS FOR THE ENSUING WEEK.

MONOAY, June 2

| Mational Horicultural Exhibition at Man| Sale of Orchids in Flower, at Stevens' |
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Mational Horicultural Exhibition at Man	Mational Manifest
A FEAST of Strawberries—not a feast for the palate—certainly not; even the proud beings who are permitted to instruct their fellows in theoretical or practical gardening may not at this season of the year aspire to such delights. They are for the noble, the wealthy, the patrician, but not for the needy. No; our feast of Strawberries is but an optical one-a feast of richness and beauty to the eyes, but not for the taste; for are not Strawberries obtaining in the market the price of from 5s. to 9s. per pound, according to quality, or somewhere thereabouts? And to eat Strawberries is to eat money literally-a species of luxurious living not to be dreamt of by the needy. But what the palate may not taste, the eyes can enjoy-nay, even revel in; and perhaps in the really beautiful sight before us we find far more of real enjoyment than will Dives when he shall partake of some of these luscious fruit, which, ere they grace his table, shall have cost him almost double the amount we have named.

This feast is found at a market growing establishment, where not a thousand or two, but many thousands of plants are annually forced, and done well-perhaps as well as pot-Strawberries can be done: for where the forcing of these is a speciality of trade, and one that has been carried on in the same place for more than thirty years, it is but natural that the highest culture should be looked for, and the best results found. We not long since referred to the beautiful show of Cyclamens seen in the houses of Mr. RICHARD CLARKE, at Twickenham, and looking in again a few months later find that a great transformation scene has been enacted in the interim, and the huge areas of flowers have given place to luscious richly coloured fruit. It was a sight not soon to be forgotten. On entering one long leanto range of houses 150 feet in length, one sees nothing but Strawberries from end to end. There were three throws on the front shelf, five rows on the rising stage, and one on the back shelfnine rows in all, in various stages of fruiting, but nearly all carrying ripe fruit. Of course the best fruits are gathered every day, and are run into market, therefore there cannot be seen that show that private growers may sometimes make when with a few scores of plants from which they gather perhaps but twice a week, they now and then have reasonable cause to be proud. But here Mr. CLARKE grows a thousand perhaps where many private gardeners only grow a score; and indeed he grows in his houses and frames only Cyclamens and pot Strawberries, both being done very largely and very well.

Yet we are not quite exact in saying only pot Strawberries are grown, for in some long ranges of low frames there may be seen hundreds of large plants literally laden with fruit that were last year forced in pots, then planted out, and early in the spring were lifted with balls of soil and roots, carried in and planted in rows 18 inches apart in these frames, and then littered over both to protect the roots and the fruits. All these are "Napiers" (market growers seldom trouble themselves about prefixes), the which, Mr. CLARKE mentions, do so well under glass but do

not compare with "Paxtons" in market value outdoors. To securesize and quality the fruithere, as with the pot plants, will be liberally thinned. The pot plants are all in large 32's, a good useful size; and it is worthy of notice that every plant, though there are so many thousands, stands in a saucer filled with soil. That this method of culture has much to do with the splendid crop of fruit we see there can be no doubt. Plants stood on such beds of soil have in a fortnight sent down roots into them so freely that lifting the pots brings up the whole of the soil and saucer bodily. Mr. CLARKE holds that these saucers of soil render great service in helping to swell and finish the fruit.

In addition to the long range we have mentioned there is another, some 110 feet long, filled as the other, and a glorious show of fruit; whilst low houses and frames are full also. Outdoors the whole of the ground is full of Strawberry plants also, and the produce in good seasons is marvellous; yet, strange to say, Mr. CLARKEHAS grown Strawberries, and these alone, in the same soil for thirty-two years right off. Of course plenty of manure is given, and the rows being already 30 inches apart, the succession plants, always from pits, are turned out in rows between the old ones, and those are cleared off or dug in as is convenient. If the forced plants do not give enough (and Presidents and Paxtons are preferred for outdoor culture), then a big lot of runners is dibbled up thickly in the autumn, and these are potted in the spring for planting out as soon as the fruit is gathered. Of course, in so many years the mere addition of the good loam in which the pot plants have been grown greatly helps to replenish the soil. A vast deal more might be written about this feast of Strawberries, but it is a case in which good wine needs no bush.

ABNORMAL GROWTH OF VINES. - The following letter was sent to us from the Washington Department of Agriculture by Dr. TAYLOR: --"1 send to your address by this mail (April 14) a specimen of Grape Vine stock sent to this Department from Mexico. No one here, entomologist or fungologist, is able to explain the cause of the abnormal growth. The disease is not confined to Mexico, specimens from Florida, New Jersey, and other States, have been received." The disease is clearly identical with what is figured by ESPRIT FARER,* whose name is well known for his experiments on the connection of the genus Ægilops with the origin of Wheat. It is not common in this country, and as far as we have seen, the knots are not accompanied by adventitious roots, as in the specimens before us, and as figured by FABRE, so that we can scarcely attribute it to their presence. There is, indeed, a form of canker in Apple trees which is caused by the development from the bark of bundles of roots, the tips of which decay and thus cause canker; and we have seen exactly the same cause of disease in Lilies, where the roots are numerous, and disease is carried upwards into the bulb from the decay of their spongelets. all the specimens we have seen there is a white mould, so that at first we were inclined to think that the disease might be caused by an Ascomyces, like the hag-plums, but examination did not confirm the notion, and the white mould on the American specimens consists of Sporotrichum minutum, GREV., which is the same thing with Verticillium nanum, B. and BR. The mass, which is developed from the centre of the shoots, consists entirely of amorphous cells, quite distinct from the structure of the Vine branch. The specimens are in too old a condition to enable a satisfactory sketch being taken, but we hope at some future time to get specimens in an early stage of growth, with which we shall be more successful. M. 7. B.

— THEORETICAL HORTICULTURE.—It will be remembered by those brought into contact with the members of the Cercle d'Arboriculture de Belgique who visited this country a couple of years since, that they were charmed with our bautiful private gardens and parks, and with our market and trade plant

establishments, but were disappointed with our general culture of market vegetables and fruits. The announcement we made last week respecting the appointment in Paris of a public instructor in the art and practice of market gardening shows how much, in this respect at least, the French excel us. find our trade growers complaining, and with ample cause, that the Continental growers are beating them in the production of vegetables, fruits, and flowers; and perhaps too hastily we, or rather they, have jumped to the conclusion that all the foreigners' success arises from a preferential climate, whilst it may he that keener application to the theory and practice of gardening, and higher appreciation of the art of good culture, have really been the operating Our systems of culture are doubtless good so far as they go, but they are not scientific, and too often proceed upon a rule-of-thumb basis. Why have we here no school of horticulture, no professor of the theory and practice of gardening, no really earnest effort hy higher methods of culture and closer study of our formidable competitors' elements of success, to counteract their distressing effects upon home market gardening? The absolute necessity of something practical heing done becomes more and more apparent every year.

— LINNEAN SOCIETY.—The anniversary meeting was held in the Society's rooms on Saturday last, Dr. Duncan, one of the Vice-Presidents, in the chair. The financial condition of the Society is very satisfactory, and good progress is making in all departments. Dr. Duncan's address was a very compact and appropriate one, on the special work in science of LINNEUS and of LAMARCK respectively. The leading points were skilfully set forth without unnecessary digression, and the contrast between the hent of mind and between the career of the two men instructively drawn. Sir John Lubbock was beelected President, Mr. Frank Crisf Treasurer, Messrs. B. D. Jackson and G. J. Romanes Secretaries; as new members of Council, to replace others retiring in rotation, Messrs. Bayley Balfour, Carretters, Under W. P. Sladden, and Colonel Godding Mustern were elected.

—— ANOPLOPHYTUN AMŒNUM.—A Bromeliad with curving stem, densely crowded with long linear subulate leaves. The blue flowers are in spikes, surrounded by orange bracts. A native of Brazil. Figured and described by M. ED. MORREN, in the Belgique Horticole, 1833, t. xviii.

— EALING, ACTON, AND HANWELL HORTI-CULTURAL SOCIETY.—On the 27th inst. a large body of the members of the above Society entertained at a complimentary dinner their President, the Rt. Hon. S. H. WALPOLE, M.P., in commemoration of the fact that the present year is the twentieth anniversary of Mr. WALPOLE filling that position. E. M. NRISON, ESQ., J.P., of Hanger Hill House, occupied the chair, and among the company present were Lord GEORGE HAMILTON, M.P., the Rev. Professor HENSLOW, and many of the leading inhabitants of Ealing. The toast of "Success to the Ealing, Acton, and Hamwell Horticultural Society" was responded to by Mr. R. DEAN, the Hon. Secretary, and that of "Success to the Eotanical and Horticultural Societies of the United Kingdom" by the Rev. Professor HENSLOW. The hall was decorated in the most charming manner by Mrs. H. B. SMITH, and the proceedings throughout were of the most interesting and satisfactory character. It was announced that the summer exhibition of the Society would take place in the grounds of the Manor House, Ealing, on Wednesday, July Q.

— TULIPA KESSELRINGII, REGEL.—A new Central Asiatic Tulip, with the bulb-coats hairy, four to five crowded leaves at the hase of a solitary flower-stalk bearing a small flower, the segments lanceolate, yellow, the outer ones striped with green on the outer surface, and with a reddish margin. Bot. Mag. t. 6754.

— DIPLARRHENA MORAEA. — The babit and foliage of this pretty Irid hears a striking resemblance, when out of flower, to some of our narrow-leaved Flags, such as Iris stylosa and I. graminea; but this illusion is dispelled on the expansion of the flowers. These are white, with the exception of two of the inner segments of the perianth, which are for the greater part yellow, and comparatively very small.

^{* &}quot;Observatioos sur les maladies regnantes de la Vigne, dans les Bulletins de la Société d'Agriculture de l'Herault Jan.—Mars, 1853.

This disparity is the more noticeable in the slightly nodding flowers, and the arrangement of the perianth leaves so as to facilitate, or even to encourage, the entrance of insects for the purpose of fertilisation. Several flowers are produced in succession from the terminal spathe, and are faintly but sweetly fragrant. Two species only are known, natives of Australia and Tasmania, and the present one is flowering freely in the Cape-house at Kew.

DRYMONIA PUNCTATA.—The species of this genus are natives of Tropical America, where they are shrubby, prostrate, and rooting, or epiphytical upon trees, to which they cling for the support of their ordinary or stoloniferous stems. This species has pen-

pots, and owing to the mild winter, and with the extreme care which is always bestowed upon the plants here, they grew into very fine specimens, characterised by healthy vigorous foliage, and that compact half-shrubby habit which is always characteristic of the Reading strain. The great object of Messrs, SUTTON & SONS in fertilising these flowers is not only the increasing of the size and the build of the flowers, but also in developing new shades and combinations of colour. One of the chief charms of a collection of Calceolarias is the variety of tints they present to view, and in this respect the Reading collection is most noteworthy. It is perhaps not to be wondered at that fine and striking specimens of herbaccous Calceolarias are always one of the

is somelimes taken to them when massed alone in a bed on account of the sameness they present for the rest of the year when out of flower; but there is no reason there should be cause for complaint on this head, if only a little forethought is brought to bear in associating a few other things with them in sufficient numbers that will follow with their flowers, such as the common white Lily (L. candidum), Tritoma Uvaria, Spirzea palmata, and Anemone japonica, pink and white. These will thrive satisfactorily with the Azaleas without encroaching or being encroached upon so as to do or to receive injury. The following is a selection of the best and most distinct now in flower at Coombe Wood:—Altaclarensis, goldenyellow; occcinea, dark scarlet; cruenta, orange-

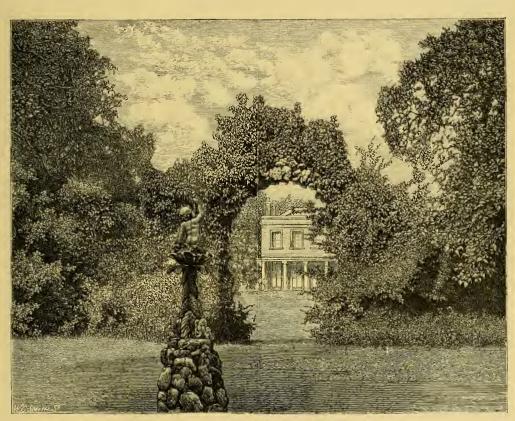


FIG. 135,-VIEW IN THE GARDENS AT EALING PARK. (SEE P. 704.)

dent shoots of the latter sort, which are very graceful when the plant is cultivated in a hanging-basket, as it ought to be. The flowers are white, with a yellow throat, and beautifully spotted with purple on the limb, while the margin is fringed. Although extremely pretty, they are notwithstanding of secondary importance from a decorative point of view in presence of the elegant and attractive habit of the plant. It may be seen in fine condition in the stove at Kew, and there is a figure of the plant in the Botanical Magazine, t. 4089.

— HERBACEOUS CALCEOLARIAS AT READING.—
The annual display of these at the Portland Nurseries of
Messrs. SUTTON & SONS have this year been very fine;
but the hot drying weather of late, and the process of
fertilisation, had, when we saw them, somewhat impaired the beauty of their flowers. The collection
consists of about 200 plants, principally in Io-inch

features of the May show of the Reading Horticultural Society.

Seen, as these plants often are, dotted about singly in the mixed shrubbery, where they are overcrowded with larger things, little idea can be formed of the beautiful effect they have when massed in sufficient numbers to admit of all their varied colours being seen together, ranging as they do from white through all the shades of soft and deep yellow, pale and deep pink, pure or suffused with red, to scarlet and the deepest crimson. Their profuse habit of flowering, even when the plants are small, is not the least of their merits. These Azaleas are made a speciality in this nursery; all the best of the newer varieties raised in recent years are present in quantity, giving a mass of soft and brilliant shades of colour such as obtainable from no other class of hardy shrubs. Exception

scarlet; Daviesii, white; Decorata, pink; Elector, orange-scarlet; Florentine, rosy-pink and sulphur colour; Géant des Batailles, crimson; General Chasse, scarlet-red; Graf von Melan, hlush; Grand Duc de Luxembourg, scarlet; Invictissima, sulphur colour, striped salmon; Leopold I., sulphur, orange, and salmon; Marie Verschaffelt, pink and yellow; Nancy Waterer, yellow and salmon; Narcissiflora, primrose-yellow; Ne Plus Ultra, orange-scarlet; Oscar I., creamy-sulphur, piok shaded; prioegg graadiflora, deep piok; Rosy Queen; Sully, orangesalmon; Van Dyck, deep red; Van Houtte, red and yellow; Viscoccephala, sulphur-white.

—— SAGGITTARIA MONTEVIDENSIS.—"One of the most beautiful water plants, other than the Water Lilies, that has been introduced into the tropic aquarium of Kew since its establishment, and a very full grower and flowerer. Nothing can exceed the

snowy whiteness of the flowers, which are produced in succession, relieved as they are by the rich maroon blotches, bordered with pale gold at the base of each petal." As in our Arrow-head, the leaves are hastate, the flowers in loose terminal verticils each 2 inches across, with three large rounded petals as described by Sir Joseph Hooker. Native of Tropical and Subtropical South America. A figure is given in the Botanical Magazine for May, 1, 6755.

INTERNATIONAL HEALTH EXHIBITION .-Model laboratories of public health are to be established for the display and demonstration of methods of examining food, air, water, soil, and constructive materials of dwellings, disinfectants, &c. These laboratories will afford an instructive model for municipalities and sanitary authorities. 1. Physiological or biological, under the charge of Mr. WATSON CHEYNE and an assistant. 2. Chemical and Physical, including the methods of chemical and microscopical examination of water, soil, air, foods, clothing materials, constructive materials, &c., under the charge of Professor CORFIELD and an assistant. The following sub-committee to be appointed to superintend the arrangements :- Sir James Paget, Bart.; Professor Burdon Sanderson; Sir Joseph Lister, Bart.; Professor Michael Foster; Dr. Angus Smith; Dr. Buchanan; Mr. Ernest Hart; Mr. W. Watson Cheyne, and Professor Corfield. Laboratory for biological research .- The laboratory will be divided into a large room—the laboratory proper—and three small ones, two for incubators, &c., and one for cleansing purposes. The exhibit will include all the instruments, materials, and methods (short of the actual inoculation of animals) employed in the investigation of the bacteria and fungi associated with the zymotic diseases of man, animals, and plants. The methods of testing the power of disinfectants will, within the same limits, be also shown. In more detail there will be exhibited the materials and processes employed in preparing sterilised cultivating media-cultivations of various micro-organisms, especially those associated with disease-modes of demonstrating bacteria by staining, &c .- modes of investigating bacteria in air, water, and soil, and of isolating and studying the organisms found-methods for testing the power of chemical agents in destroying bacteria, with illustrations - photographs of the various micro-organisms-micro-photographic apparatus-microtomes, microscopes, incubators, purifying chambers, &c. Demonstrations will be given from time to time, at which several of the matters mentioned above will be illustrated, such as the forms of various micro-organisms—cultivations of some organisms to show their modes of growth—methods of preparing sterilised cultivating materials, and of carrying out a series of pure cultivations-methods of examining air, earth, and water for bacteria. Hygienic laboratory. - In this will be exhibited all the apparatus necessary for the physical, chemical, and microscopical examination of water, air, soils, foods, disinfectants, &c., and also for the examination of sanitary appliances. Illustrations of the following will be given: - Microscopical examination of water sediments; chemical examination of mineral and of organic matters in suspension and solution in water; growth of organisms in gelatine and sugar solutions; testing the value of filters. Methods for estimation of the carbonic acid in air, including the "household test;" detection of other gaseous impurities; chemical and microscopical examination of the organic matter in air. Mechanical, chemical, and microscopical examination of soils. Chemical and microscopical examinations of various articles of food and drink; detection of adulteration. Examination of "disin-fectants," wall papers, articles of clothing, &c. Apparatus for experiments illustrating the movements of air in pipes, &c., and its passage through various materials; methods for testing the soundness of drain-pipes and soil-pipes; the efficiency of traps and other apparatus; and any other experiments con-nected with hygiene. Physical, chemical, and micro-scopical demonstrations will be given from time to time.

—— SOLANUM MAGLIA.—This is the plant of which tubers were sent from Chili in 1822 to the Royal Horticultural Society as those of the true wild Potato, and which was figured as S. tuberosum by SABINE in Trans. Hort. Soc. Lond., vol. v., p. 240. It was found again by DARWIN in the Chonos Archipelago and mentioned in the Voyage of the

Beagle. Nevertheless, according to Mr. BAKER, this is not the veritable origin of the Potato, which is the species known as S. tuberosum, a native of the Andes of Chili and Peru. The present plant is nearly glabrous, with small, oblong, insipid tubers and white flowers. It is figured in the Botanical Magazine, t. 6756.

- CANDYTUFTS .- Between perennial, biennial, and annual Candytufts, we get a variety of fairly hardy flowers of much beauty and decorative excellence, and in the variety get also a long blooming season. One of the earliest and most striking is the fine white-flowered Iberis superba; indeed, the spikes of this kind on strong plants bear a close resemblance to the fine spikes seen on the new Rocket-flowered annual kind, Empress. This perennial kind produces flowers admirably adapted for cutting, as well as for massing in beds or borders; and though its habit is perhaps a little loose, yet strong old plants produce a splendid head of bloom. For smaller beds, or edgings, or on rockwork, none can excel the singularly beautiful and pure white Iheris corifolia, so dwarf and compact, and yet so very floriferous. Both these kinds will increase so easily by means of cuttings that any one may obtain a good stock in a season. Iberis gibraltarica, though a perennial, yet is not always found able to resist our winters; and, therefore, though its blooms are so fine, the variety is not so acceptable as are thoroughly hardy kinds. The new and very beautiful hybrid from gibraltarica, though an assumed perennial, is really best treated as a biennial. It is curious that, though there is so much of variety in the habit of growth of this hybridsome plants being large and robust, and others very dwarf and compact, foliage also varying considerablyyet the flowers throughout are almost identical in form and colour. In time, by careful selection of seed from the best forms, this variation may be got rid of. Sown in May, the plants will bloom in April and May of the following year. The new annual kind, White Empress, produces grand spikes from plants sown in August and dibbled out in a frame for transplanting out early in the spring. Of other annual kinds the new carmine and the crimson are beautiful, and produce singularly striking and effectual masses of colour in the flower garden.

— IMPATIENS FLACCIDA VAR. ALBIFLORA, Illustration Horticole, t. 619, April, 1884.—A white Impatiens, so like I. Sultani that it is generally, though, as it turns out erroneously, referred to that species in gardens.

-- DRACÆNA LINDENI. - A garden plant grown under this name having flowered in the stove at Kew, proves, as many suspected when it was sent out, to be a mere variety of the old Dracæna fragrans, of which a figure is given in the Botanical Magazine, 1081. The lanceolate elliptic gracefully arching leaves render the plant valuable for decorative purposes, but chiefly so when in a comparatively small state, and well furnished with foliage. Old plants are apt to branch, and, losing their lower leaves, become ungainly, although the plant in that condition is, notwithstanding, worth its room in a large warm conservatory for the delicious fragrance of its flowers. The whole inflorescence, with its shortened branches and densely capitate clusters of flowers, are the same as in the type, from which this variety differs by the broad creamy yellow bands of variegation on the leaves-a very important matter horticulturally.

—— STENOMESSON INCARNATUM. — A bulbous plant, with a scape terminated by two or three flowers with very long scarlet tube, divided into six shallow oblong ovate lobes, streaked with green on the outer surface. Gartenflora, t. 1147 (1884).

—— SEEDLING CARNATIONS.—It would be interesting to learn whether the elevation of the Carnation—and of course we include also its edged congener, the Picotee, in the reference — to the position
of a florist's flower has helped to render it popular as
a common garden flower or otherwise. Whilst some
tell us that the hard and fast rules of the florist have
but served to confine the cultivation to restricted and
select limits, the florists will doubtless as broadly
assert that in their efforts to promote the development of the highest form and excellence in marking
in the Carnation, they have, too, largely helped its
popularity as a garden flower. The matter is hardly

worth discussing, and certainly not in a cynical spirit; but, whether due to the florists or not, it is certain that there is a strong taste for Carnations as common garden flowers growing up, and that it is a taste that the trade is catering for. Thus in the production of wondrously blooming kinds we have to thank Continental seed-growers for the beautiful strains they send us-and those, too, so cheap that we marvel not to find plenty of these charming flowers in all gardens. When from packets of seed of any good strain we get robust plants that bloom with marvellous profuseness, and produce 80 per cent, of good double flowers, and these in wondrous variety of colour and markings, we may well wonder that the cultivation of such beautiful border flowers is not universal. It is true that, because of their marvellous blooming propensities, these seed-obtained Carnations can hardly be termed perennial, simply because they make nearly all blooming stems, and little or no That is, however, a matter of little moment, as seed is cheap and abundant, and it is but to sow in the spring of each year-and in the open ground, too—to ensure an abundant supply of robust plants. If we want to secure the fine self Cloves, and those richly-marked bizarres, flakes, and flames, which the florist so much prizes, we may sometimes get them from seed also, but it is more costly. Still there is this recompense, that the plants are true perennials, and may be easily perpetuated.

— TROP.EOLUM DIGITATUM, Gartenflora (1884), t. 1146. — Leaves peltate, five-lobed; flowers on long stalks, with scarlet spur and yellow fringed petals. A beautiful species, native of New Grenada, and, as it seems, cultivated in Messrs. IIAAGE & SCHMIDT'S establishment as T. Gättnerianum.

— TULIFA CUSFIDATA, REGEL.—Flowers white, with oblong acuminate segments. The bulb also is prolonged into a long neck. Received in the St. Petersburg Botanic Garden from Mr. ELWES, and figured in the Gartenfora, t. 1147.

— THE WEATHER.—General remarks on the temperature, rainfall, and duration of bright sunshine, for agricultural and sanitary purposes, during the week ending May 26, 1884, issued by the Meteorological Office, 116, Victoria Street, London, S.W.:

—The weather has been characterised by very fine warm days and clear cold nights. Towards the end of the period, however, the conditions over our southern counties became less settled, rain falling and lightning occurring in many places. Temperature has varied greatly, and on the whole has been little higher than the mean. The maxima were very high; it hose recorded on the 33d or 24th were as high as 85° in "England, N.W.," 83° in "England, S.N. 88° in "England, S. 38° in "England, S. 38° in "England, S. 39° in "England, E.," and from 33° to 36° in nearly all other districts. The rainge of temperature was, therefore, very large everywhere, and at Newton Reigny on Friday the sheltered themcometer, after falling to 38° in the early morning, rose rapidly, and reached 35° by 3.20 F.M., giving a range of 47° in about twelve hours. At 3 40 F.M. (the dry bulb being \$5°) the wet bulb reading was \$5°, showing a difference of 27°. The rainfall has been less than the mean in all districts. Over the greater part of the kingdom there has been hardly any fall at all. Bright sunshine shows a very considerable increase in Viscotland, E., "10 69 in "England, N.W.," 70 in "England, E.," to 69 in "England, N.W.," 70 in "England, N.W., "70 i

— GARDENING APPOINTMENT.—Mr. THOMAS HOVELL has been appointed Manager of the horticultural department of the Preston Pleasure Gardens and Nursery Company (Limited).

MANUFACTURE OF RAISINS.

IT is said that there are but few localities in the world where this industry is carried out successfully. All our present foreign supplies come from Southern Spain and Italy, which sources have no rival in the The choice varieties of Grapes from world's market. which raisins are made require a very peculiar soil for their proper maturity, and also the conditions of climate where they can be perfectly cured are rare and limited. They must, for perfect results, be cured in the open air, in contact with a dry and heated soil, in an atmosphere void of all dampness, secure from rain and dew, and under the hottest sunshine. Artificial heat gives at best only a very inferior article. From these requirements it is easy to see why raisin production has taken a limited range, and why the vast Grape regions of the country have never attempted it. In Fresno County, California, vineyards are being established on a large scale, and it is believed that in this district will be found all the desiderata needed for the production of raisins. fruit needs only to be cut from the Vine with the utmost care, and deposited in a shallow tray set at its root, and left there to dry for a couple of weeks. It is then turned by placing an empty tray on top and upsetting the whole body, and then is left to dry a week or more longer. The heat of the tortid sun thus dries it completely. The dried bunches are then put by layers into a hox termed a "sweat-hox," holding about 100 lb., and covered up. Here the drying becomes perfectly equalised. Then the fruit is carefully and tightly packed in 10 lb. or 20 lb. boxes, interlaid and covered with fine paper, the covers are nailed tightly on, and they are ready for market. This is the plan adopted in California, and the experiment, so far, has proved both successful and satisfac-Already many thousands of acres have been planted with the peculiar raisin Grape. It is only recently that this industry has been attempted in California, and the workers have as yet had but little time to mature their processes. The Vines are young, and it is held that the raisin Grape gives its best products upon Vines of considerable age.

THE INTERNATIONAL EXHI-BITION AT ST, PETERSBURG.

(Continued from p. 680.)

OUR notes commence in an annexe to which we have not yet referred-a hothouse for the more tender plants, and a garden for the exhibits of trees, shrubs, and certain other hardy plants. In the entrance to it we find an excellent collection of models of farm and garden roots, by Mr. Ernst Benary, with various fruits, pictures of the preceding, and of flowers, There are, also, various pictures from the *Illustration* Horticole, basket-ware from the Institution for the Blind on the Quai du Canal Catherine-all for garden use; Japanese and other potting-ware; tiles for greenhouse floors, exhibited by a Russian firm; Mushroom-spawn, we believe from Dr. Werner, of Breslau, loose in texture, sandy, and quite different from what we see in England.

PLANTS,-The first collection of plants is a group of Araliads from the gardens of the Grand Duke Constantine Nicolaievitch, including A. nobilis, a fine species with oblong sinuated leaves, and others with which we are familiar. In a fine group of small Cycads from the same gardens we notice Zamia linifolia at once striking from the filiform segments of the leaves, and Zamia Fischeri, so well furnished as to be good for table decoration. A fine collection of succulents, a feature of the Exhibition, is exhibited by Messrs. Haage & Schmidt, of Erfurt, who show the extremely rare Anhalonium prismaticum, Leuchtenbergia, and Pelycophora. Another fine collection is exhibited by Mr. F. A. Haage, jun., of Erfurt, who has a fine plant of Pilocereus Haagei. There is also an interesting collection from the Botanic Garden, in which we find the curious and pretty Mamillaria micromeris, with small, closely applied spines. Orchids are poorly represented, but we find a set from the Botanic Garden, one of them in it being the curious Bifrenaria inodora, with olivaceous segments and a purple lip. Some others are exhibited by Mr. O. Bock from the gardens of Mr. Pastoukhoff. is the splendid collection of new plants of the Compagnie Continentale d'Horticulture, of Ghent, which, we believe, has obtained the greatest success of the Exhibition: and Mr. Linden's representative, M. J. Von Mol, was complimented by the Emperor, who purchased a set of new plants; and their Imperial Highnesses 1st prize, which consisted of two vases of rare marble, worth £100, or 1000 roubles, has fallen to this collection.

NEW PLANTS.—Among the new plants of 1884 are some very fine Aroids. Alocasia imperialis is a splendid species, in habit not unlike Alocasia macrorbia, but in substance like thick leather, and blue-bronze in colour above, purple beneath. A. regina is similar and of the same species, but darker in colour. These will be known among the best of new plants for this year. Homalonema Seissmayerianum is amply lurnished with broadly cordate dark green leaves. Philodendron Regelianum is not unlike P. crinipes; Pothos Enderiana is striking, because of its black-green foliage, and it seems excellent for clothing a wall. Schismatoglottis decora and variegata are beautiful plants, with white variegation. One of the most striking Aroids, from a botanical point of view, is Cyrtosperma matrieffiana, from Sumatra, with prickly stems and Tacca-like division of the leaves. With this exception the preceding Aroids are all from Borneo. We have omitted Curmeria metallica, a fine reddish-brown leaved kind. Other plants of this year not Aroids are Curculigo seychellensis, with prickly stems and divided leaves, which appears to us to be rather a Carludovica, though we remember none with spines; Pandanus leucospinus, good in its present small state; Livistonia Wageriana, with long, yellow, depressed spines; Croton Oosterziei, Pandanophyllum Wendlandi, like P, humile, but darker in colour; and Calamus kentiæformis. Among previous introductions most particularly are

Zamia maypurensis, from Venezuela, apparently distinct; and Gynnogramma schizophylla gloriosa, finer and more plumose than the species; Tillandsia Pastirchoffiana, and plumose than the species; Tillandsia Pastichoffiana, and Aglaonema Rœbellini, from the Philippines, one of the best of this group, fine in foliage and in its white coloration. A fine Anthurium Andreanum from the Compagnie deserves notice. It is in habit almost like a Philodendron, 5 feet high, with internodes 4 or 5 inches long, and bearing many fine spathes. By MM. Chantrier Frères, of Mortefontaine, France, are exhibited two hybrid Anthuriums distinct, and described lately by M. E. André; of these Anthurium carneum x is a hybrid hetween A. Andreanum A. And

hybrid Anthuriums distinct, and described lately by M. E. André; of these Anthurium carneum x: is a hybrid between A. Andreanum and A. ornatum; the other, A. Chantrierii x: is between A. subsignatum and A. ornatum; both are fine plants in foliage, and the former possesses prettily coloured broad spathes with white spadix, effective and durable. A Chantrierii x: resembles in its spathe a narrow form of A. ornatum, but its foliage is even better and the petioles are shorter. Splendid Crotons of moderate size and magnificent: Colour, are exhibited also by Chantrier Frères, and of them the best are Empereur Alexandre III., of fiery red colour; Marquisie de l'Aigle, yellow spotted with green; and C. Carrieri, somewhat similar. These are broad-leaved kinds; of the Disraelt type is Mortefontainesi, much finer than its earlier precedent; and of narrow-leaved varieties, C. Bronetii, which is pendulous, and coloured red and yellow; C. interruptus elegans is also beautiful. also beautiful.

also beautiful.

Fine new and other Aroids are from the Botanic Garden, including an unnamed and distinct Philodencon, and some of Dr. Regel's own species, in particular Anthurium Gustavi, with large roundish leaves. M. Jacob Makoy, of Liege, exhibits Aphelandra Margaritæ, with bronzy leaves marked with white lines, and particularly some Bromeliacees, the chief among them being Tillandsia variegatat, like T. pubbosa, but beautifully variegated. He has also Cryptanthus Regeli, Tillandsia Greigi, Vriesia Barilleti, bearing bold inflorescences; and Tillandsia Quintusi.

Roses.-Returning now to the chief entrance to inspect the Roses of Russian growth, exhibited chiefly by C. T. Freandlich, nurseryman at Tsarskoïe Seloe, the Roses of Riskall glowth, channed chen'y by M.

C. T. Freandlich, nurseryman at Tsarskofe Seloe, who has received several medals, we noticed that the majority were budded last year, but these small plants for decorative use are floriferons, and the flowers large for the size of the plants. Specimens of large size are not entivated in Russia. Large gold medals were awarded to the exhibitor for his collection of Tea and hybrid perpetual Roses. A group of R. polyantia vars, by this exhibitor, to which was awarded a small gold medal, we think extremely charming, and it includes the white Paquerette, Ernestine de Barente, dark pink; Mignonette, flesh-coloured; and several others. The group is bordered by dark and pale varieties of R. Laurenciana. This exhibitor is the chief among but few others, and we believe that all are nurserymen.

Cincrarias are dwarf, and the varieties evidently good, but the cultivation of them appears difficult on account

Cincrarias are dwaf, and the varieties evidently good, but the cultivation of them appears difficult on account of the absence of sufficient light in winter, though from the Botanic Garden were some tolerably good. Mr. Ernst Benary contributes a number of single flowers, fine in colour and size.

Azaleas, like the Roses, are exhibited in small plants only, but these are well-flowered and perfect in colour. A large gold medal was awarded to Mr. Fr. Seissmayer, of the Tauried Imperial Garden, for a beautiful collection, well flowered and richly coloured. The same exhibitor showed a collection of Rhododendron ponticum in variety, very successfully flowered, and bright in colour. Ericas are few—two kinds in one collection colour. Ericas are few—two kinds in one collection only—E, persoluta alba and E. cylindrica, are said to be from Leipsig, and are of first-rate culture.

One of the features of the Exhibition undoubtedly is

the collection of plants contributed from the Botanic

Garden, and particularly the fine collection of hardy Orchids, of which there are about thirty-six species: as before remarked, it is the finest array of these interesting plants we have seen since they were cultivated by the Conte de Faris at Twickenham. But the content of t age: under the circumstances of this admitted under glass. There are many plants of particular interest from the Botanic Garden. A magnificent allium, A. Alexie-anum, is like a Haemanthus in its great broad leaves, and not dissimilar at a glance in its deuse heads of whitish flowers, which, however, are not show, but fine whitish flowers, which, however, are not show; but fine in their own way. Heterotropa asaroides, now were rare, is flowering amidst an arrangement of hardy plants. In this set is Iris Bladowi, Fritillaria imperialis are, incotora, like the species, but apparently with much smaller flowers. Wullenia carinthiaca is unusually fine in flower, Viola attacta lutea is a pretty and distinct plant; a variety of Senecio campestris called procera has orange flowers, and Kanunculus Bertoloni with pretty white flowers and round leaves in a choice kind. Trollius americanus pallidus flavus is one of the palest of this genus. Arnebia echioides, Corydalis Sewerzowi with flowers almost like those of Tropcolum polyphyllum, a well flowered plant of Rubas arcticus with some Primulas, will serve to show by their mention the nature of this collection.

The English garden to which we have before referred is

Thindax, with serve to show by their incidence we have before referred is practically furnished with plants from the Botanic Garden. A collection of Bamboos includes Bambusa argentea strata, the leaves with white stripes above and beneath, they are of a remarkably blue glancous colour. Arunifaria glancosecens, with small leaves and twiggy habit, is also characteristic in this collection. Succulents in good assortment and choice kinds are tastefully arranged by setting the pots amidst rough stone and bits of moss, which leaves nothing to he desired for good effect. The arrangement of the whole of this part is extremely satisfactory and well carried out. Plants from the Botanic Garden are distributed through the building and a plant of Heracleum pubescens variegatum.

from the Botanic Garden are distributed through the building and a plant of Heracleum pubescens variegatum. At annowr of fine specimens of Pulms are contributed from the Imperial Cardens of Tauride, St. Petersburg, Mr. Fr. Seismayer, and the imposing effect of the Exhibition is greatly due to their presence. Among them is one of the finest plants we know of Livistonia Hoogendorpi, splendid specimens of Latania borbonica, Corypta australis, Chamacrops chinensis, and Euterpe edulis, all perfect, the latter exceptionally graceful. Mr. Ed. Pynaert of Ghent sends a fine collection of twenty-five Palms, including a good Calyptronoma Swartzi, and a Cocos Mikaniana, large in size for its leaves, yet unbroken into segments. Mr. A. Van Geert exhibits a pair of fine Cycas Van Geerti; and a fine Cycas media elegantissima, one of the finest Cycads in the Exhibition, is perhaps the same as this. It has a stem about 4 feet high, and with its long graceful leaves it forms almost a perfect ball, the its long gracein leaves it forms annota a percet man, the leaves reaching below the very small tub in which it is growing. This is exhibited by Mr. Otto Abela, gardener to Mr. Polovistoff, of Taraskole Seloe. The same ex-hibitor has a splendid specimen of Ceratozamia longifolia, and equally fine and perfect is his Encephalartos Alten-

stein:

Of the commoner kinds, such as Encephalartos caffra and of the commoner kinds, such as Encephalartos caffra and revoluta, there are fine examples distributed through the building. Of the latter we saw fine examples in the nursery of M. Potesta, one of the principal ones of the city. Of the rare Cycas callicoma there are two or three specimens exhibited. The choicest collection of all, though the plants are small, is that from the garden of the Grand Duke Nicolaievitch, which contains Zamia angustifolia, somewhat remarkable for its narrow leaves, like Z. Inifolia, before referred to; Cycas Seemanni, Dioon spinulosus, Macrozamia corrilipses gyrata, with the pinnee arranged or twisted into a spiral; and several other choice, but less distinct, and more common kinds. In the open garden the following appear the most

other choice, but less distinct, and more common kinds.

In the open garden the following appear the most interesting. First, a very good collection of fruit trees under various forms of training, extremely well done, from the Academy of Forestry at Petrovskoie, near Moscow, and affording a good demonstration of the art. A collection of dwarf Coniters is noteworthy, from Mr. Stolborn, of Kappela. There is here a very interesting collection of alpines, exhibited by Dr. Regel and M. Kesselring; it includes the best specimens we have seno of Gentiana verna and Anemone vernalis; Colchicum Interum and C. crociffortum are flowering freely in pots, and Korolkowia Sewerzowi is finer than we remember having seen it before. There is a charming and perhet and Korolkowia Sewerzowi is finer than we remember having seen it before. There is a charming and perfect specimen of Androsace ciliata in a 32-sized pot, which is completely covered with its lovely rosy flowers. There are still other excellent plants which we must pass over with the mention of a Campanula alpina, which differs entirely from any of the plants so called in Eritain, by having a stiff erect spike, which rises from a rosette of leaves. In this garden are numbers of deciduous trees and shrubs from Dr. Regel and M. Kesselring, intended to form an exhibit of them, but they are not yet in leaf. From our Special Correspondent, (To be continued.)

INTERNATIONAL FORESTRY EXHIBITION.

We are now enabled to place before our readers a plan (fig. 136) of the buildings for the forthcoming Exhibition in Edinburgh, which, as we have said, promises to be one of great importance. The site of the Exhibition is in the grounds of Donaldson's Hospital, part of which is shown at A on the plan. The Exhibition building, B, consists of a nave between 600 and 700 feet in length, with three transepts and various annexes. The offices and committee rooms are shown at C. The main entrance is at D, other entrances at E, F; G is a tramway line leading from the city, separated from the terrace, on which the Exhibition building stands, by a shrubbery and fence. Part of the Exhibition will be located in the grounds around the building, as at H.

Home Correspondence.

Successional Flower Gardening.—We do not find the frequent anomalies mentioned by a recent correspondent in combining spring and summer gardening in the same garden. From early spring to late autumn I think it may be safely said there is never an entire absence of flowers out-of-doors. May is one of the least gay months in the long flower season as regards bulbs and herbaceous plants, but the bright tints of spring foliage and some early flowering shrubs make their lessened number but little missed. Snowdrops, Crocuses, masses of Scilla sibirica, winter Aconites, borders of Narcissus nanus, Chionodoxas, increasing as they do in beauty year by little missed. Snowdrops, Crocuses, masses of Scilla sibirica, winter Aconites, borders of Narcissus nanus, Chionodoxas, increasing as they do in beauty year by year, and the numerous other early spring flowers, leave no garden without excuse if it he not gay in early spring. These are succeeded without a break by the later spring flowers. Anemone fulgens, Queen Anne's Jonquils, Forget-me-Nots, Daistes, &c., in separate beds, by giving a few masses of different colours, add to the good effect of mixed beds and borders, which are by far the most interesting and satisfactory as the chief feature of a "perpetual" flower garden. June brings its wealth of early summer flowers, Pansies, Foppies, Lilies, Delphiniums, Pinks, &c., and Roses, though the latter, from late prunling, to avoid the harm of east winds, belong rather to July than June, and help to bridge over the slight dimination of blossom between early and late summer plants. Spring bedding plants are effectively replaced by half-hardy summer ones, though the latter hardly equal them in beauty, and the endless varieties of "mixed" flowers have no lack of brightness till frost and autumn rain dim their beauty. Even then, though brilliancy may be quite over, some of the autumn hardy plants are son as possible after the autumn flower garden has lost its beauty, which, with the fine varieties of Michaelmas Daisies, a few perenoial Sunflowers. longer. The needfal autumn work should be begun has soon as possible after the autumn flower garden has lost its beauty, which, with the fine varieties of Michaelmas Daistes, a few perennial Sunflowers, scarlet Lobelias, Gladioli, and other beautiful late flowers, need be by no means of a dingy kind. It requires thought and planning, and perhaps some extra trouble, to keep up a perpetual supply of flowers in a small garden for nine or ten months in the year; but, at all events, in favourable climates it can be done, and any extra trouble is well rewarded. With regard to half-hardy bedding plants, we plant Pelargoniums, &c., amongst such spring bedding plants as die down, without disturbing the latter except when the beds require to be remade, and even then the roots and butbs may be replanted at once. Summer flowers do none the less well, and if care be taken in planting the latter and in taking them up in autumn no harm is done to the bulbs. With Dasies, Forget-me-Nots, &c., which have to be removed to reserve ground for summer, it is easy to take up such as are in the way in time for planting out summer bedding plants; or, in the case of Begonias, to plant the tubers amongst them, even when spring flowers are in full blossom in April. 1 am inclined, though, to think that (if they are required to make much show before autumn) it is better to push them on a little before planting them out-of-doors late in May. Where the plan of leaving spring flowers in the ground is carried out, care must be taken to fit in the requirements of each to its summer successor in the different beds. Spring flowers requiring high culture, such as Amenone fulgeous, are well succeeded by variedifferent beds. Spring flowers requiring high culture, such as Anemone fulgens, are well succeeded by variegated Pelargoniums, &c., while such spring flowers as Queen Anne's Jonquils lose none of their brilliancy in beds not too rich for green-leaved Pelargoniums. We cannot manage a succession in Pansy beds, except by bordering them with early spring bulbs—a plan which brightens up any bed where plants do not either die down or bear yearly removal to the reserve ground. C. M. Owen.

Early Cabbages: Heartwell. — Every one requires at all seasons these wholesome vegetables, and all must have been interested in the correspondence anent them in your columns for some weeks. I thoroughly agree with your correspondent (p. 550) in his selection of the above; but for an early Cabbage he left unnoticed one of the most valuable and special characteristics of this variety. I allude to its immunity from "starting" or "bolting" to seed in the early spring months. Here and elsewhere whole squares with the market gardeners, and worse in private gardens, are rendered worthless by this means, and immense loss entailed. When the seed-bed is on a hard poorish soil, this variety will hold any length without starting for seed, and what this means those interested can appreciate. W. Y. Murphy, Clonmel.

Hybridising.—In making several thousands of crosses between varieties of the same species, one cocasionally perceives results that are difficult to explain. Why, for instance, should different varieties of zonal Pelargoniums refuse utterly to intercross? A little experiment made last season may throw some light on the subject, though it does not clear it up. Some time ago, the late Dr. Denny in one of his pleasant after-dinner speches at Chiswick, gave us an account of the origin of the white zonal sent out by him, viz., Prima Donna. It was, he said, a bud-sport from an older variety, one of the shoots of which, taking on a stronger habit, and producing flowers double the usual size, was propagated and named as above. Among other remarks, the Doctor said he had found it to be quite sterile, either with its own pollen, or as male or female parent with other varieties. On procuring a plant I tried the effect of crossing it with La Dame Blanche, a variety of French origin, having the same character as to sterility as Prima Donna. I only made one or two attempts and nearly all were successful, and I now have five seedlings intermediate between the two parents. I shall be much interested if any one can throw further light on the matter, as to whether La Dame Blanche also originated as a sport, or if there are other known cases of otherwise sterile sports being mutually fertile; and lastly, the reason why. C. E. Pearson, Chikwell Nurrerick, Notts.

Abies nobilis.—There are some charming specimens at Maresfield, and just now they are nost unique objects. The topmost whorl of branches bears the upright comes from 3 to 4 inches in length, and five-eighths of an inch in diameter. The general disposition of the pollen-bearing organs in flowers is above the stigma, so that fertilisation frequently takes place without the aid of insects. In the Abies under notice the tier below the cones carries the pollen-bearing catkins in clusters of three or four each, pale greenishs traw colour within, and tinted with crimson on the surface. A tap on the catkin-bearing branch disergaged the polleo, which rose in the still atmosphere in a beautiful golden cloud. The whole tree, some 7 or 8 feet high, with its pale green terminal shoots drooping, crimsoned catkins and chandelier-like cone-bearing branches, is extremely interesting and elegant. T. W., Harrow.

Double Narcissi.—I have been watching with much concern for some time past the gradual return to singleness of some of our large clumps of double white Narcissus. We attribute this deterioration to the clumps having increased so much during the twelve years that they have remained in the same border, the roots having probably become entangled and bound together, and the soil round them impoverished. We shall try if a change of place will bring back to the flowers next season their former beauty of doubleness. Though the only specimens remaining are dead, or nearly so, I send them in order to show the "undoubling" phase in which the Narcissus now is. E. V. B., May 27. [Can our correspondent oblige us with a bulb or two, the flowers of which are, or have been, in the intermediate stage? Ed.]

The Phylloxera.—I shall be much obliged if any of your correspondents can inform me if there are any Vines in this country inlested with the Phylloxera, and, if so, where ? as I am anxious to try a remedy on a Vine which may have the disease. For some time past I have been experimenting on a healthy Vine, in order to prove there is nothing injurious to the plant itself, with complete success, as after five applications of the remedy the Vine looks better and more healthy than it ever did before. I enclose my name and address. Hex. [The last specimen received was from the neighbourhood of Dorking. Ed.]

Araucarias.—Some of the finest specimens of the so-called Monkey-tree are to be seen at the extensive and picturesque nurseries of Wood & Son, Maresfield, Sussex; one, which seems to be the only female specimen (perhaps 35 feet high, is bearing a dozen huge green cones. The seeds, however, do not always ripen. There is a peculiar charm about a well furnished Araucaria when "standing at ease" on a nicely

kept lawn. It consists perhaps in the regularity of its whorls of branches, each denoting a year's growth, the long cylindrical imbricated branches of a dark, velvety green, bending in snake-like curves, the lowest tier resting gracefully on the sward with the terminal shoots reflexed. The soil of these nurseries must be lavourable to the growth of the Chilli Pine, as it is also called; when it has become necessary to remove portions of branches that encroach on the path, as if requently the case, the wound exudes a tough and viscid gum, but a vigorous young growth succeeds at the point where the branch is cut, T. W., Harrsow.

Vesuvius Pelargoniums Wintering Outdoors, -Referring to my note (in your issue for December 29, 1883) of these flowering in my window boxes outside at Christmas I have now to say that the plants have passed the whole of the winter outside and are now very vigorous and showy with flowers and buds. The Marigolds in a cottage garden near, mentioned as being in bloom at the same time have been in bloom ever since although they did not seem to like the few sharp frosts we had. *Yames O'Brien, Harrow-on-the-Hill.*

A Welsh Scarecrow.—The sexton of a certain church in North Wales has invented rather a novel and certainly very amusing method of preventing, or, rather, trying to prevent, the attacks of birds on his fruit trees, and which consists in displaying amongst the branches the full-sized likeness of a cat cut from the pages of some book or almanac. Regarding the efficacy of the experiment I am not able to speak. W. [We have seen this plan tried, but—familiarity breeds contempt. Ed.]

The Eucalyptus in Cornwall.—The enclosed letter relative to the cultivation of several varieties of Eucalyptus, may interest some of the readers of your paper. I distributed the seed of nineteen varieties to about 500 persons some four or five years ago, for the purpose of ascertaining whether other kinds than the E. globulus was fitted to our climate. The subject is interesting as bearing on the question of the reforesting of Ireland. Several correspondents have assured me that the Eucalyptus globulus grows well and survives the winters in that part of the kingdom. C. Roberts, F.R.C.S., Ebotton Row, Marjair, May 23. [See letter in our last issue, p. 678. ED.]

"Dear Sir.—Some time ago (four years, I think) you were kind enough to send me some Encadyptus seed. I think I was not successful in raising all the varieties, but found the citriodora, cinerea and sideroxylon grew readily. The former is, I think, acknowledged to be a delicate kind, and I have only allowed plants to remain out in the summer. There is little likelihood that they would stand a cold winter. The cinerea I am inclined to think from my observation is hardier than the more common globolus, and I am pleased to say I have a little tree from your seed which has been out two winters, and is now in bloom. I have hopes that with all the summer before it some of the seed may ripen. The sideroxylon appears also to be tolerably hardy. It has not grown very fast. One plant was out last winter quite unhurt, but it must be said we had very little frost. I have also the amygdalina and globulus—the former out-of-doors two years and the latter three. In a gurden near Falmouth, 7 miles from here, and nearer the sea, the globulus has attained a large size, and there are young trees grown from seed ripened there. Geo. Hart Taylor."

British Ferns,—It is to be hoped that the enquiry of "A. D. W.," in last week's number, will elicit an occasional paragraph, not merely with reference to the description of interesting varieties of our native Ferns, but also in relation to their history and the circumstances under which they have been found wild or raised from spores. There could not be a better model to follow than the descriptions in the Nature-frinted British Ferns, and a supplemental volume of this work, describing and illustrating the hest forms that have been found or raised since its publication would be welcomed by many. W. O'B.

Potato Types.—I have read with great interest "A. D.'s "communication on the cultivated Potato at p. 681. If the will give me bis address I will gladly send him a copy of my paper, in which all the six species are fully described and figured. Of the types other than tuberosum, Maglia, Commersoni, Fendleri, and Jamesli, are all four in cultivation in London gardens, but in all cases I am afraid the supply of tubers at present on hand is very small. They all appear to increase readily, and by another season I hope there will be no difficulty in any intending experimenter being able to get tubers of all four kinds. Y. G. Baker.

Flower Shows.—Some years since, when on the Council of the Royal Horticultural Society, I proposed a plan in order to induce more people to visit the shows, and thus increase the income. This plan was simply to well advertise the show some seven or ten days beforehand, stating the names of the exhibitors, with the sorts of plants they would show, and I promised that if they would do this I would send

extensive banks of Phalænopsis, Cattleyas, Odontoglossums and Vandas to different shows free of expense to the Council. My then colleagues feared the expense of advertising would be more than the extra number of paying visitors would contribute to their funds, and thus the idea was never carried out. Some twenty-five years since I first proved to the Orchid growers of those days the fine effect produced by flowering large numbers of the same species together. The object for which I write is to suggest to the managers of flower shows to carry out my idea before stated, and if not to the full extent at least let them print on a sheet of paper a list of the exhibitors and their exhibits, and let them be sold in the tent at 1d, or a sheet of paper a list of the exhibitors and their exhibits, and let them be sold in the tent at 1d, or yfd, each. I believe sufficient would be sold to pay for the cost, and it would be a great boon to visitors. I, for instance, at the last Botanic should have much liked to have inspected the alpine plants of Mr. Douglas had I known such to be in the show, but being, as I have been told, in a corner I did not see them. Robert Warner, Brownfeld, Chelmiford.

Rhododendrons at Messrs. Veitch's Coombe Wood Nursery.—The Rhododendrons are a grand feature in these grounds at the present time, and will be followed by other varieties a little later on equally promising, especially if we are favoured with the dripping weather now so much needed in this part of

the following, which are now in fine condition at Coombe Wood:—Blandyanum, deep crimson; Bylsianum, white and crimson; congestum roseum, light rose; Duchess of Edinburgh, crimson; Elfrida, rosy-crimson; erectum, rose colour; formosum elegans, pink, spotted; Frederick Waterer, glowing crimson; Guido, crimson; Kate Waterer, rosy-crimson, marked with yellow; Lady Lopes, light rose, dark markings; Lady Rolle, white and yellow; Leviathan, pinkish-white; Lord John Russell, pale rose; Marion, shaded pink; Mirabile, deep rose; Marion, shaded pink; Mirabile, deep rose; Mrs. Cameron, pink, orange spots on upper petals; Mrs. John Walter, white centre, bright crimson edge; Mrs. comeron, pink, orange spots on upper petals; Mrs. John Walter, white centre, bright crimson edge; Mrs. cameron, pink, orange spots on upper petals; Mrs. John Walter, white centre, bright crimson edge prose; Larose, which was a constant of the control of the best of which are Alarm, white centre, scarlet edge; Attrosanguineum, deep red; Barclayanum, rose; Caractacus, purplish-crimson; Celebrandum, dark purple-crimson; Charles Bagley, red; concessum, rosy-pink, centre paler; Currieanum rosy-lifac, fastuosum flore-pleoo, mauve; Francis Dickson, deep scarlet; Hector, crimson; John Spencer, rous white, crimson; H. W. Sargeant, crimson; John Spencer, rose colour, piok margio; John Waterer, crimson; Joseph Whitworth, deep purple-lake, dark spots; Lady

roots of plants are soon left without any moisture to feed on. Some think they remedy this by giving water, and so perhaps they do in a measure, but few give enough, and driblets are worse than useless, as the thirsty feeders come quickly upwards for the little they can get, and while in search of that it is snatched from them, as it were, by the parched air licking it up in its course, and instead of their cravings being satisfied they perish miserably almost within reach of what they most want. If one does water, and gives a thorough soaking, the ground, as we all know, cracks, and these minute fissures let it all in again, besides which they strain, and often break or rupture the roots. By giving a mulching all these evils are avoided, as, by shading the surface after or before the wash caused by watering, there is none of that panoing or hardening of the crust which always takes place without it, and instead of the rapid change from wet to dry, the soil remains uniform both as regards warmth and moisture, as the mulching, being of a non-conducting nature, not only prevents evaporation, but to a great extent stops radiation, and thus keeps the earth under in an equable condition, and so favours the roots of plants that are in it. Trees in the ordinary course get mulched by Nature, as there are the fallen leaves, and all kinds of dibris under and it must be a dry time indeed if some moisture is not to be

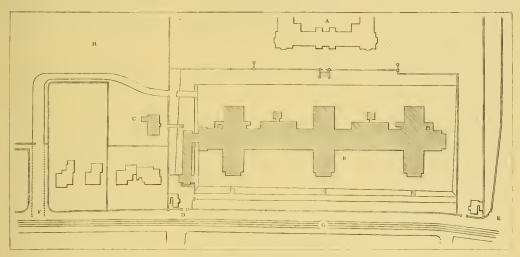


Fig. 136.--Plan of the edinburgh international forestry exhibition. (SEE P. 712.)

the kingdom, and which plays no inconsiderable part in the character as it does in the endurance of the flowers of these favourite shrubs. The collection here is large and comprehensive, including quantities of all the best varieties in cultivation, new and old, standards and dwarfs. The nature of the soil, combined with the attention bestowed, results in the annual production of an even profuse head of bloom, which, coupled with the natural formation of the grounds, that admits of the whole sea of gorgeous colour being taken in at once, presents a sight not easily forgotten. Such mild winters as the last and preceding of 1882-3, were exceptionally favourable to the very early flowering section of Rhododendrons, which deserve to be more extensively used than they are, but instead of planting them in beds or clumps amongst the late blooming sorts, they should be introduced to well sheltered nocks where they will receive protection from the surroundings, or their flowers are always liable to get cut off by the frosty nights that when sheltered a little they often escape. These early varieties were this spring extremely beautiful. Amongst the bulk of the later section that do not bloom until the season for frost is over there is still a difference of at least two or three weeks in the time of their flowers opening—a note of which requires to be taken by those who like to have the occupants of a bed all in bloom simultaneously. In the best varieties that bloom first after what may be termed the safe season is reached, that is, when the time that danger from frosty nights is passed, may be named

Claremont, scarlet, black blotches; Lady Eleanor Cathcart, rose, spotted with chocolate; Lady Frances Crossley, pink; Madame Miolan Carvalho, pure white; Michael Waterer, rosy-scarlet; Mr. Holford, salmon; Mrs. John Clutton, white; Mrs. Shuttleworth, scarlet, spotted j Mrs. Mendel, piok, centre yellow; Sherwoodianum, rose-lilac, spotted with chocolate; Sigismund Rucker, magenta, spotted; Sir Thomas Sebright, purple, blotched with bronze; Sydney Herbert, crimson, spotted black. The samessin appearance present in a bed filled wholly with Rhododendrons, objection to which is sometimes taken, can easily be corrected by the introduction of a few Irish Yews and pyramidal Tree Box, with here and there a plant of the Ispanese Acers, A. polymorphum sauguineum and A. p. atropurpureum; oothing can be more effective than the rich colour of their leaves in association with the flowers of the Rhododendrons. A singular instance of the effects of the severe frost in April is to be seen in this aursery, where some of the main stems of the Rhododendrons had their bark split right up for 2 or 3 inches, leaving it now in a curled-back state, as if it had been stripped from the wood by force. T. B.

Mulching.—If those who have gardens were only aware of the great benefits to be derived from mulching they would have little bare ground for the sun to play on among their crops and fruit trees, taking the moisture out of the earth, as it does by the great heat on its surface causing the most rapid evaporation, which goes on at such a rate during the day that the

found when the deposited rubbish is moved or disturbed. Planted on a sloping border, and attached to a wall, how altered are the conditions, as then, instead of the branches shading the ground over the roots, it is exposed to the full glare of the sun, and becomes almost baked by the heat. No wonder then that Peaches and Nectarines get red-spider, and look distressed when they have a crop of fruit to carry, as to feed that, and pump up sap to supply the place of that lost through the leaves, is a greater task than the roots can perform. With a mulching and one or two waterings the work is easy enough, and the sun on the foliage does good, as instead of causing flagging, and breeding or favouring insects, it hardens the tissues, and consolidates and makes firm the wood. Before putting the manure on to act as a mulching, it is a good plan just to prick up or break the surface of the ground, as then the rain or water, when given, goes in freely, and in some cases where trees stand out singly or are grown as pyramids, it is as well to form a basin, by drawing away a portion of soil and leaving a ridge round which will hold the water or liquid manure till it soaks down to the roots. Not only are all kinds of fruit trees assisted greatly by a muching, but Peas and Scarlet Runners are quite as much so, and in hot dry seasons it really is the ooly way to keep them in bearing. To be of full service it should be put along by the sides of the rows early, and the closer, in reason, it is put, and the more ground it covers, the better it will be for the plants.

as good as anything, and where it can be gol seaweed is valuable, especially for Cauliflower and Celery, which like the little salt that is in it. To put on flower-beds where Calceolarias and such-like are planted, I have found nothing equal to old Mushroom dung, which breaks up fine, and is not objectionable looking. Sifted leaf-mould is also good, and is neat, and lets the water through readily; and where the leaf-mould cannot be obtained, grass from the mowing machine may be substituted, as it soon dries and shrivels and forms a good mulching. For gardens near towns occaa-nut libre is the most comea-table commodity, and an excellent material it is if gardens near towns cocoa-nut nore is the most come-at-able commodity, and an excellent material it is if care be taken not to let it mix with the soil, amongst which it is very injurious; its decomposition is very slow, and during that process it breeds fungus, which is poison to the roots of all plants. 7. Sheppard.

Keports of Şocieties.

Royal Horticultural: May 27,

SCIENTIFIC COMMITTEE.—Present: Sir J. D. Hooker, in the chair; Messrs. Boscawen, W. G. Smith, Ridley, Murray, McLachlan, Smee, Houston, Professor M. Foster, Dr. Masters, and Rev. G. Hens-

Dietes iridifolia.—Mr. Ridley reported that the plant referred to him at the last meeting was Dietes

ridifolia.

Rhododendrons.—A letter was read from Mr. Far-Rhododendrons,—A letter was read from Mr. Par-rant (Isle of Man) relating to the specimen of R, lanatum shown by him at the last meeting. Nearly seventy trusses were in bloom at the same time. As to Rhododendron Falconeri Mr. Farrant stated that he believed his plant to be the finest in the kingdom— a huge bush, 10 or 12 feet high, and as much through, growing in the open air, was covered with splendid foliage. Mr. Farrant has also large specimens of R.

toliage. Mr. Farrant has also large specimens of K. barbatum, Roylei, Thompsoni, Fortunei, Aucklandiee, niveum, arboreum, and others.

Araucaria inbricala.—Mr. Farrant also reported that he had a monoecious plant of this species. Three male catkins had sufficed to fertilise about 200 female

male catkins had sufficed to fertilise ahout zoo female cones, which gave the tree a singular appearance, Wallfarwer on Black Currant, — Dr. Masters showed, on behalf of Mr. C. S. Broome, a specimen showing a Wallflower growing on a bush of black Currant. The specimen was found in a market garden belonging to Mr. Cole, of Ilford. The appearance suggested that a seed had been accidentally sown on a branch of the Currant, and that the roots had penetrated through the pith. Mr. Murray undertook to examine the specimen more fully, and to report on the result.

to examine the specimen more fully, and to report on the result.

The Descending Sap,—Dr. Masters showed specimens of Aucuba, on which he had experimented in various ways. In the first specimen the branch had been simply "ringed," he whole of the bank being removed, with the usual result of the formation of a swelling at the upper end of the wound. In a second specimeo two strips of bank had been removed, leaving the intervening portions untouched: a ligature in the intervening portions untouched: a ligature ing the intervening portions untouched; a ligature was applied around the centre of the wound. The result was the healing of the wound in the ordinary manner without any swelling above the ligature; thus showing that the lateral strips of bark permitted the currents of nutritive fluid and the formation of healing showing that the lateral strips of bark permitted the currents of nutritive fluid and the formation of healing tissues to be carried on in spite of the ligature. In a third specimen the bark had been only partially removed on two sides, the intervening portion being left intact. A ligature was applied as before. The result was a slight swelling on one side above the ligature, while on the other no swelling was apparent, the bark having apparently been removed on this side to a greater depth, as a portion of dead wood was observable, and which was becoming covered over with new growth in the ordinary manner. The fourth specimen was a branch which had been completely ringed, and the wound covered for a time with damp moss, afterwards allowed to become dry. The result was a swelling above the ligature and a formation of adventitions roots into the moss. Afterwards, when the moss was allowed to become dry, the whole branch, both above and below the ring, died. In all the other cases the injury done was partial, and confined to the portions above the wound, but in this last case the whole branch was completely browned and shrivelled. The experiments were all made on May 13, 1833.

Disease of Cress.—Mr. W. G. Smith referred to the

shrivelled. The experiments were all made on may 13, 1853, Disease of Cress.—Mr. W. G. Smith referred to the disease of Cress (Lepidium satisum) as caused by a putrefactive fungus named Pythium DeBaryanum. The disease is especially common in seedlings, so common that it is almost impossible to grow Cress in any position, or material, without the disease showing itself. Mr. Smith said the idea generally accepted amongst botanists was that the spores and mycelium of the fungus are so generally diffused throughout all sails that it is impossible to plant Cress seeds without

their coming in contact with the fungus. Mr. Smith considered this idea to be wrong, and stated that inferior seeds were much more subject to disease than the selected ones, as supplied by first-rate seed merchants. The following experiments were tried:—Collections of seeds were sown in ordinary soil in common flower-pots. Other seeds were planted in soil that had been well boiled, placed in pots that had also been boiled; after cooling, under bell-glasses. An equal number of seedlings came up diseased in both series, showing that the disease was not in the soil, but possibly on or in the seeds. A batch of seeds was then washed in water containing one per cent. of carbolic acid and planted in soil that had been boiled, placed in pots that had also been boiled, and allowed to cool as before. About one-fourth or one-fifth of to cool as before. About one-fourth or one-fifth of the seeds were killed, and the Pythium could only be the seeds were killed, and the Pythium could only be detected after long searching; showing that the fungus was probably present in some condition outside the seeds. Mr. George Murray suggested that the last experiment should be repeated, and the seedlings watered with distilled water only, to avoid the possibility of the Pythium existing in the water supplied. Proliferous Cones of Larch.—Mr. Houston showed specimens of Larch comes in which the axis of the cone was prolonged into a leaf-bearing shoot.

Insect Petits in Orchitis.—Mr. Boscawen showed roots of a Cattleya on which gallike formations were formed. Mr. McLachlan stated that the growths in question were connected with the presence of a hymenopterous insect, Isosoma orchidearum. An allied form was accused of destroying cereals in the United States, but inasmuch as it was contrary to the

United States, but inasmuch as it was contrary to the rule in this genus to be parasitic it was supposed by some that some other insect was the real gall-maker, and that it preyed upon the Isosoma. This, however, was at present merely conjectural, and other entomologists thought the insect named was really the producer of the gall.

Hybrid Sarracenias.—Rev. George Henslow stated that he had examined the microscopic structure of the pitchers of the hybrid Sarracenias shown at a recent meeting by Mr. Williams, as well as that of the parent plants, and found that the hybrids prescoted in their anatomy, as in their outward appearance, intermediate

appearances.

Desmids in Swimming Bath.—Rev. J. Henslow Demids in Samming Balh.—Rev. J. Henslow alluded to a brown and green discoloration on the tiles of a swimming bath, the water of which was heated to 80°, and in constant movement. On examination the deposit was found to consist of large numbers of Diatomacæ and Desmidieæ.

Daubling of Mercing* Assembling was accounted by the property of the pro

Doubling of Narcissus.—A committee was ap-pointed to examine into the alleged conversion of single to double Daffodils, and the circumstances con-nected therewith. It was suggested that selected bulbs should be grown at Chiswick for this purpose.

FLORAL COMMITTEE.—Present in Section A.: John Fraser in the chair; Messrs, E. Hill, J. O'Brien, H. Ebbage, H. Williams, H. Herbst, and J. Hudson. In Section B.: Shirley Hibberd, Esq., in the chair; Messrs. H. Bennett, H. Cannell, W. Bealby, J. James, J. Child, H. Turner, and W. B. Kellock. A somewhat smaller number of new plants came under the notice of the committee at this meeting, but more than one of unusual interest attracted the notice of the committee at this meeting. notice of novelty seekers. Perhaps the most interest-ing plant shown was a small one, with three leaves and a small two-flowered spike of crimson-scarlet flowers, of the rare Masdevallia racemosa Crossi, a plant we never saw in bloom before, and which is one plant we never saw in 6100m netore, and wairen is one of the most difficult Orchids to import alive, if not the worst that a collector could have to deal with. The honour of flowering the plant is due to its exhibitor, J. Fellowes, Esq., Churchfield, West Bromwich, and we regret that the committee did not make an award to the complete of the committee did not make an award to the complete of some interest, shown in J. Fellowes, 154, Committee did not make an award to it. Another Orchid of some interest, shown in flower by Baron Schröder and Mr. Salter, gr. to J. Southgate, Esq., Selborne, Streatham, was Cattleya Schröderiana, a plant which in habit and the appearance of the flowers seems to be intermediate between C, bicolor and C, Walkeriana. The colour of the sepals and petals is most peculiarabrone by the committee of the period of the period balellum is rich rosy-violet. Another pretty Orchid, shown by Baron Schröder, was Phaius burdus, with cionamorcoloured sepals and petals, and purple-brown labellum, yellow at the base. Cattleya Mossie var. alba came from Mr. Lee's collection, and also three forms of the fine Odontoglossum mulus, one of which bore a three-branched spike of thirty-four flowers, which was voted a Cultural Commendation. Mr. Lee also sent some little gems in flowering plants of the rats was voted a Cultural Commendation. Mr. Lee also sent some little gems in flowering plants of the rare and diminutive Masdevallia tridactylites, M. calura, M. Arminii, and M. cuculata. Mr. White, gr. to C. Dorman, Esq., showed a fine example of the showy Masdevallia rosea, with about three dozen expanded flowers, which also received a Cultural Commendation. From Baron Ferdinand de Rothschild, Waddesdon Manor, Aylesbury, came the very fine specimen of Odontoglossum Hallii leucoglossum, noted in our last number, and which, besides being Culturally Commended, was recommended to the Council for the award of a Medal. From W. Vanner, Esq., Camden

Wood, Chislehurst, came a specimen with three spikes of the curious Cymbidium rhodocaris, and Cattleya Mendelii marginata alba, a very good form. Mr. Cummings, gr. to A. H. Smee, Esq., also sent a small group of Orchids which included Cattleya labiata Roezlii, with its pretty purple-stained lip; a fine variety of the chest-nut-red Oncidium crispum; Brassia Keileana, with brown sepals and petals, and creamy-white labellum. Mr. R. Dean again showed his new Mimulus moschatus Cloth of Gold, and received a higher award than was made to it at the previous meeting. Mr. Bealby, The Laurels, Roehampton Park, showed a fine new Ivy-leaved Pelargooium, named Isidore Feral, a lovely peach-coloured double-lowered variety, with very large pips, and a good-sized truss. Mr. S. Ford, gr., Leonardslee, exhibited a couple of stems of Bambusa Metake, about 10 feet long, showing the line growth it makes in that part of the country. Messrs, Veitch & Sons showed a couple of new Tree Carnations, and received a Frist-class Certificate for one named W. P. Milner, the finest pure white that has yet been introduced, the petals being broad, the flower of excellent shape, and very pure. Messrs. Hooper & Co., of Twickenham, showed Carnation Madame Pynaert, which could not be distinguished from the pink variety of Souvenir de Malmaison. Messrs. Cannell and Mr. Eckford both contributed cut blooms of Pansies; and Mr. R. May, Leyburn, York, sent some plants in pots of his new yellow Paasy Golden Circle, a bold, free-flowering, bright coloured variety for pot cultivation. The New Plant and Bulb Company, Colchester, cent a neat collection of new Japanese Acers, principally forms of A. septemlobum and A. palmatum, together with several plants of Cypripedium spectabile.

The awards made were:—

The awards made were :-

FIRST-CLASS CERTIFICATES. Section A.

To Baron Schröder, for Phalus Iuridus.
To Baron Schröder, for Cattleya Schröderiana.
To Mr. C. J. Salter, for Cattleya Schröderiana.
To Messrs, Lucombe, Pince, & Co. for Passiflora
"Constance Elliott."

Section B.
To Messrs, Veitch & Sons, for Carnation W. P. Milner.
To Mr. W. Bealby, for Ivy-leaved Pelargonium Isidore Feral. To Mr. R. Dean, for Mimulus moschatus Cloth ot Gold.

CULTURAL COMMENDATIONS.

To Baron F. de Rothschild, for Odontoglossum Halll leucog Iossum.
To W. Lee, Esq., for Odontoglossum mulus grandi

florum. To C. Dorman, Esq., for Masdevallia rosea.

To C. Dorman, Esq., for Masdevallia rosea.

FRUIT COMMITTEE.—Present: Henry Webb, Esq., in the chair; Messrs. J. Burnett, S. Ford, G. Goldsmith, J. C. Mundell, C. Ross, G. T. Miles, C. Silverlock, G. Bunyard, A. Howeroft, R. D. Blackmore, and John Lee. The first of the series of fruit and vegetable shows held in connection with the Health Exhibition brought a good attendance of members, and a larger number of subjects for them to adjudicate upon, than is usual at this season. Mr. J. F. Barter, Lancefield Street, W., a very successful cultivator of Mushrooms for market, sent a very fine sample of his produce, together with some bricks of spawn of his own make, and was awarded a Cultural Commendation. Mr. Miles brought up an excellent dish of Chelsea Gem Peas, a good early variety for growing in cold frames, which the exhibitor thinks very highly of. It grows only to the height of about 15 inches, and is a free bearer. Mr. Gilbert, Burghley, sent some fine Broccolis, Gilbert's Late Queen, very closely resembling Cattell's Eclipse, and which the committee requested should be grown at Chiswick cortrial. Mr. Eckford, gr., Boreatton Park, Baschurch, sent another verying celled Mr. Orgens, and help. committee requested should be grown at Chiswick for trial, Mr. Eckford, gr., Boreatton Park, Baschurch, sent another variety called May Queen; and Mr. S. Ford, gr., Leonardslee, Horsham, sent Ford's Latest of All, but neither stood the test of comparison with the one shown by Mr. Gilbert of the very fine new sort called Model. Seedling Mclons were exhibited by Mr. Taylor, gr. to J. McIntosh, Esq., Dunevalled, Mr. Bresse, Petworth; and Mr. Howe, Benham Park, but none passed the committee's standard.

THE FRUIT AND VEGETABLE SHOW.—At this meeting, which was held in connection with the Health Exhibition, culinary vegetables and fruit were the productions of the greatest interest, flowers occupying a subordinate position, and after the surfeit of hornical content of the surfeit of hornical content of the surfeit of hornical condensate position, and after the surfeit of hornical condensate position, and the previous week, it was a relief to find the edible section brought into notice. The vegetables shown were generally very creditable to the growers, but some classes were but poorly represented, notably Strawberries in pots, Peaches, Nectarines, Cherries, and Pines; whilst Grapes, both black and white, were shown in considerable quantities. For the collection of vegetables of this srason's growth Mr. A. Waterman, gr. to A. Brassey, Eaq., Preston Hall, Aylesford, was awarded the rst prize, In

nis collection were finely grown French Forcing Carrots, Brown Globe Artichokes, Canadian Wonder Kidney Beans, of great size, and quite tender; Larly Milan Turnips. Connov-r's Asparagus, Vicks' Criterion Tomatos, White Italian Onion, particularly large and clean in growth; and the Pea Culverwell's Marrow. The 2d prize was taken by Mr. Miles, gr. to Lord Carrington, Wycombe Abbey, with a collection, but very little behind the former; in this were very large and ripe Stannfordian Tomatos, Little Gem Peas, Veitch's Early Forcing Cauliflower, the shapely Potato, Lady Paget, and Cucumber Tender and True, well finished off. Mr. T. Lockie, gr., O. Økley Court, Vindsor, was 3d. This rock contained well-filled pods of Abamas, Cucumber Purley Park Hybrid. Negro Long very big Green Globe Artichison and the other competing collections were to be sone good samples of the following: — Woodstock Kidney and Veitch's Ashleaf Potatos, Trophy and Hathaway's Excelsior Tomatos, Telegraph Pea, Early Munich Turnip, some very large and firm Leannington Broccoli, and nice Early London Cauliflowers. In the amateurs' competition for the best fifty heads of Asparagus, Messrs. Cheshire Bros., 24, St. Botoloph Street, Colchester, were 1st for a large, evenly-sized succulent lot; 2d, Mr. F. A. Colc, Colchester, with as large, but less nicely selected samples of market—that is, with much uneatable such bush as a warded to Mr. Gr. R. Growth and the such as a warded to Mr. Gr. R. Growth and the such as a shale of others; 2d, Mr. A. J. Houpard, Brick Farm, Kew. From the above it will be seen that the lion's share of the awards were taken by the Colchester growers—market and others. For French Asparagus, 100 heads, Messrs. Webber & Co., Covent Garden, were awarded the test prize. For the best fully heads grown in a natural way—that is, with more grown by Messrs. Stewart, Goldsmith, Speed, and Herrin. Cauliflowers and Broccoli Late Queen, and Veitch's Early Foreing Caulifilower. The competition in the class for collections of Cabbages brought a la

Goldsmith, Hollander.

Salad materials were in abundance, but there was nothing out of the usual run of kinds used—no blanched Dandelion, Chicory, Corns-slad, Chervil, Garlic, Celery or Celeriac. The 1st prize was awarded to Mr. R. Gilbert, gr., Burghley House, Stamford, whose collection consisted of Cos and Cabbage Lettuces, Tomato Vick's Criterion, Tarragon, French Sorrel, Cress, Mustard, Onions, and the Olive-shaped Radish; 2d, Mr. C. Waite. For six bunches of Radishes,

rst, Mr. G. Richards, gr. to the Earl of Normanton, Somerley House, Hants; 2d, Mr. C. Waite; 3d, Mr. S. Haines. Mr. W. Allan, gr., Gunton Fark, Mr. R. Gilbert, and Mr. Goldsmith were awarded respectively 1st, 2d, and 2d for two beads of Lettuces.

S. Haines. Mr. W. Allan, gr., Gunton Fark, Mr. R. Gilbert, and Mr. Goldsmith were awarded respectively stst, 2d, and 3d for two heads of Lettuces.

FRUTTS.—The show of black and white Grapes was not large, nor did we notice any that would require a superlative in describing them; the white varieties, Foster's Seedling and Buckland Sweetwater, were nice sized bunches, but Black Hamburgh Grapes, although in most instances as finely coloured as autumn produce, were not remarkable for weight of bunch. The 1st prize for Black Hamburgh Grapes was awarded to Mr. W. Robins, gr. to E. Dyke Lee, Esq., Hartwell House, Aylesbury; 2d, Mr. Woodbridge, gr. to the Duke of Northumberland, Ston House; 3d, Mr. W. Fyle, gr. to W. F. Dbek, Esq., The Lee, Esq., Hartwell House, Aylesbury; 2d, Mr. Woodbridge, gr. to the Duke of Northumberland, Ston House; 3d, Mr. W. Fyle, gr. to W. F. Dbek, Esq., The Mr. Stone of the Stone of a yellow-fleshed kind raised from Benham Beauty and Hero of Lockinge. In the miscellaneous class, Mr. C. Ross, Welford Park, obtained a 1st prize for fourteen dishes of Apples, five of Pears, and three fruits of Smooth Cayenne Pine-apples. Ac equal 1st to Mr. J. Woodbridge, Sion House, Isleworth, for several ripe pods and foliage of Vanilla planifolia, the penetrating perfume of which could be detected some yards distant; 2d, Mr. J. Austen, Ashton Court, for a large dish of Brunswick Eigs, in first-rate condition; and 3d to Mr. C. Howe, Benham Park, for a good dish of Brown Turkey Figs, The only Pine-apple shown for competition wasa Queen, from Mr. Miles, to which a 1st prize was awarded.

Incomy rine-applies snown for competituous was Queen, from Mr. Miles, to which a 1st prize was awarded.

FLOWERS, &C.—Hardy flowers in great variety were shown by Mr. T. S. Ware, Tottenbam, among them being abundance of Preonies, Pyrethrum roseum, handsome Aquilegia glandulosa, Delphinium nudicaule, and German Irises. Messrs. Barr & Son, and Messrs. Hooper & Co., Covent Garden, contributed largely from their abundant collections of hardy flowers; the collection of the latter exhibitor contained a pretty plant in Marica gracilis with flowers white and light blue. Messrs. G. Jackman & Son, Woking, again exhibited their splendid collection of Clematises, for which a Gold Medal was awarded. From Messrs. Kelway & Son, Langport, Somerset, came several boxes of cut blooms of single and double Pyrethrums, and of hybrid Amaryllis, together with a gorgeous collection of herbaccous Pizony Blooms, some of which possessed a mass of central petuls, thread-like, as in Japanese Chrysanthenums, Hossins, J. Veltich & Son, Chelsea, showed some floroupton Stock in a greatment of the same approve by them a few seasons back; they contributed several bunches of Aquilegia glandulosa, A. Corrulea hybrida, and A. ealifernica hybrida, of according hybrida, of according hybrida, of according hybrida, and A. ealifernica hybrida, of according hybrida,

Crystal Palace: May 23 and 24.—This great gathring will be put down as one of the most successful that the Crystal Palace directors have been the means of bringing together in recent years, and should mark the Leginaing of a cycle of horticultural exhibitions worthy of the splendid building and site in which they are held. Mr. Head, the able manager, deserves much praise for his share in the preliminary work of schedule arranging, as well as for his idea of holding the show in tents, instead of in the inadequate space at the disposal of the managers in the centre aisle. The tents afforded more room for promenading—they were pleasantly warm only—and grass and gravel always seem to be a more fitting setting for horticultural productions that any others.

seem to be a more tuning seeming to northeritaria pro-ductions than any others.

The tents, which were conditions to each other, were pitched on the area once covered by that portion of the building which was burnt down, the largest of them

being set apart for the largest plants, and the smaller ones for Orchids, florists' flowers, and small plants generally. In the open classes Mr. W. Chapman, gr. to J. Spode, Esq., Rugeley, was 1st, as he had been two days before at the Botanic Society's show; 2d, Mr. H. James, Lower Norwood; 3d, Mr. E. Tudgey, Waltham Cross, for nine stove and greenhouse plants, distinct, in loom. For nine Azalea indica, Mr. C. Turner's splendid plants were an easy 1st; Mr. Jas. Child, gr. to W. J. Bell, Esq., Garbrand Hall, Ewell, mas 2d; and the 3d was withheld. The Cape Heaths were few in numbers, and the only pitz awarded was a 1st to Mr. E. Tudgey, to a collection of nine varieties, of which Briac Towenships, and the control of the state of the control of the state of the s

happier effect than when they are seen placed in olique positions on a table, as is the case clsewhere.

For the best stove and greenhouse Ferns, consisting of nine distinct kinds, Mr. Penfold was again placed 1st, with Adiantum peruvianum, A, cardiochkena, Davallia Mooreana, D, polyantina, Polystichum Eillardieri, &c., well grown, healthy specimens; Mr. J. Wakchana, gr. than the state of the

In the class for nine distinct Dracænas, Mr. H. James was 1st with plants of D. Shepherdi, D. Baptisti, D. amabilis, D. Mooreana, and some other and older varie-

was 3d, with much smaller plants.

In the class for nine distinct Dracemas, Mr. H. James was the with planta and and some other and older varieties. This was a well grown collection, the foliage and colouring being all that could be desired. Mr. J. R. Bird was 2d, with plants considerably younger, including such as D. ignea, D. voluta, D. Fillengti, and the conspicuous D. terminalis alba. Mr. C. Rann was 3d. Caladiums were very well shown by Messrs. J. Laing & Co., Forest Hill, whose nine distinct varieties found much favourable comment, some of the best being C. Sanconiathon, C. Comtesse de Condeixa, C. Madame Fritz Koechin, C. Anna de Condeixa. This collection took ist prize, no others being awarded. The Pelargonium coatest again resulted in Mr. C. Turner being placed the rist for show varieties, with plants grown in his uoapproachable style. No other competitorentered. In the class for nine fancy Pelargoniums, Mr. C. Turner was awarded the rst prize; 2d, Mr. J. Wiggins, gr. to W. Clay, Esq., Grove Road, Kingston.

Messrs, G. Jackman & Son, Woking Nurseries, brought their grand collection of Clematises for which they eccived he desired the collection of Clematises for which they eccived he desired the collection of Clematises for which they eccived he desired the collection of Clematises for which they eccived he desired the collection of Clematises for which they eccived he desired the collection of Clematises for which they eccived he desired the collection of Clematises for which they entire the foliage and the prize. For the best eighteen Roses, not less than twelve varieties of not less than twelve, distinct, and in g-inch pots; Mr. H. James being awarded the ad prize. For the best eighteen Roses, not less than twelve varieties, in pots not exceeding o inches, Mr. C. Turner was ts, his plants being stocky, well foliaged, and capitally flowered; Messrs, Ford, gr. to C. J. Leaf, Esq., Pains Moodeside, Farmalla Rosn, the Old Nurseries, Cheshunt, were awarded the 2d prize. For the best eighteen Roses, not le

dimensions, but which was made up of widely different materials to the winning one, and in which good sized plants of Impatients Sultani told with great effect. For the best single specimen stove plant in bloom the winners were respectively Mr. Jas. Wakeham, with Clerodendron Ballourianum; Mr. H. James, with Anthurium Andreansum, as equal 1st; and Mr. E. Tudgey as ad, with Clerodendron Ballourianum. For the best single specimen greenhouse plunt in bloom, 1st was Mr. C. Rann, with a Darwinia; Mr. E. Tadgey 2d with Erica ventricosa; and Mr. W. Chapman 3d, with an Erica ventricosa; and Mr. W. Chapman 3d, with an Erica ventricosa; and Mr. W. Chapman 3d, with an Erica ventricosa; and Mr. G. Rann took 1st prize for the best specimen of a fine-foliage plant; Mr. H. James was 2d, and Mr. E. Tudgey 3d. Some exceedingly pretty bouquets, white and otherwise, floral devices, such as anchors, breast-knots, sprays, and the like, were shown, Mr. J. R. Chard, The Floral Depôt, Chase Corner, Clapham Common, being 1st for six buttonhole bouquets. Messrs, J. Laing & Co. 1st for bouquet; and Mr. C. Hepburn, decorative florist, Crystal Palace, was 1st for a bridal bouquet. Miss Gross, 6, Oxford Terrace, Lower Addiscombe Road, Croydon, took the highest prize for three vases for the table.

a bridal bonquet. Miss Cross, 6, Oxford Terrace, Lower Addiscombe Raod, Cross, 6, Oxford Irerace, prize for three vases for the table.

AMATEUR CLASSES,—For six stove and greenhouse plants is twas Mr. Chapman, 2d Mr. C. Rann, Mr. J. Child took the 1st and only prize for six Azaleas, The well known growers, Mr. T. N. Penfold, Mr. C. Rann, and Mr. W. King, gr. to P. Crowley, Esq., Waddon House, Cryodno, took respectively 1st, 2d, and 3d prizes for six fine-foliage plants of no particular novelty. Mr. T. N. Penfold took the premier prize for six stove or greenhouse Ferns, his group containing Davallia fijensis, Microlpia hirta, and Todea superbain good order. For the best six Orchids of distinct species Mr. C. J. Salter was 1st, with handsome pieces of Dendrobium Wardianum, Cymbidium Lowianum, Cattleya Mendelli; the 2d prize fell to Mr. J. Child; 3d, Mr. W. King, For six distinct Crotons the prize winners were respectively—1st, Mr. Penfold, with Queen Victoria, Lady Zedland, Johannis, Elegantissimus, and others; 2d, Mr. J. R. Bird; 3d, Mr. J. Wakeham, The sort named C. Hawkerl in the 2d prize fel was a remarkably bold marked variety. Neat plants of Draceenas with the sort named C. Hawkerl in the 2d prize for was a remarkably bold marked variety. Neat plants of Draceenas Mr. J. R. Start, Mr. G. Mr. W. King, Mr. J. Sharp, gr. to F. Hatchell, Esq., Grove Fall, Mr. J. Sharp, gr. to F. Hatchell, Esq., Grove Fall, Mr. J. Sharp, gr. to F. Hatchell, Esq., Grove Fall, Mr. J. Sharp, gr. to F. Hatchell, Esq., Grove Fall, Mr. J. Sharp, gr. to F. Hatchell, Esq., Grove Fall, Mr. J. Sharp, gr. to F. Hatchell, Esq., Grove Fall, Mr. J. Sharp, gr. to F. Hatchell, Esq., Grove Fall, Mr. J. Sharp, gr. to F. Hatchell, Esq., Grove Fall, Mr. J. Sharp, gr. to F. Hatchell, Esq., Grove Fall, Mr. J. Sharp, gr. to F. Hatchell, Esq., Grove Fall, Mr. J. Sharp, gr. to F. Hatchell, Esq., Grove Fall, Mr. J. Sharp, gr. to F. Hatchell, Esq., Grove Fall, Mr. J. Sharp, gr. to F. Hatchell, Esq., Grove Fall, Mr. J. Sharp, gr. to F. Hatchell, Esq., Grove

Devon and Exeter Horticultural: May 22 and 23.—This two days' exhibition was held in grounds adjoining those occupied at the same time by the Duon County Agricultural Association. The committee selected this occasion, expecting to make it a financial success; but outside that body it was generally considered a mistake, and so it proved to be. This Society is fortunate in having a large and influential list of subscribers, and so will be able to tide over the losses occasioned by this exhibition; but it would have been more satisfactory had the committee been able to have balanced their accounts. As an exhibition of horticultural produce it was a complete success, and quite equal to any of its predecessors. One of the largest collections of plants formerly exhibited at these exhibitions has been dispersed, but it is gratifying to note that several new exhibitors, and some very ode exhibitors, have again come to the front with very settining its extends, so that the Society can still boast of exhibition graterymen of Exetens.

The leading nurserymen of Exetens.

The leading nurserymen of Exetensist the Society to a very great extent by the loan of their grand collections of plants. Messrs, Lucombe, Pince & Co, unconsected the society of the exhibition specimens, as usual put up a splendid collection, which included many fine Palms and Tree Ferns. Two very handsome examples of Cyeas revoluta, one at each end of their collection, had a fine effect. A very fine specimen of Anthurium Scherzer-

ianum majus occupied a central position. It had sixty enormous spathes of a very deep shade of colour. Large and small specimens of Azalea indica in colour. Large and small specimens of Azalea indica in colour carriety, densely flowered, were interspersed through the collection, with fine plants of Allamandas, Stephanotis, Clerodendrons, and many other subjects. A nice lot of Orchids were also staged by this firm, as well as a few stands of very good seedling Pansies.

Messrs. R. T. Veitch & Son staged a very fine lot of plants, principally flowering subjects, with an admixture of choice hardy subjects, specimens of Areca lutescens and A. aurea, Cocos Weddelliana, Ipanses Maples, and Asparagus plumosus nanus, which were used to make the display effective. As por lpants for arrangement with flowering kinds the Maples are exceedingly pretty, their flaely cut foliage and variety of colour arc charming. A very interesting group of Orchids, a specimen of the beautiful Adiantum rhodophyllum (new), several specimens of the greenhouse Rhododendrons Princess Royal and Alexandra, Anthuriums, Dinonea muscipula, a fine specimen of Saracenia flava, a great variety of choice hybrid Rhododendrons and Ghent Azaleas; several well-flowerd specimens of Azalea indica, including the lovely white Lady Pollumore, Stella, Alice, Souvenir de Prince Albert, &c., were included in this group. In competitive classes the Silver Cup given for the most effective arrangement of miscellaneous plants on a stage, 20 feet by 5 feet, was won by Mr. Rowland, gr. to William Brock, Esq., Parker's Hill House, Exeter. The group consisted of a very fine and graceful Coos Weddelliana in the centre with several smaller specimens, same fine densely flowered specimes of Dendrobium mobile, Odonoglossum Alexof misceianeous plants on a stage, 20 teet by 5 feet, was won by Mr. Rowland, gr. to William Brock, Esq., Parker's Hill House, Exeter. The group consisted of a very fine and graceful Coos Weddelliana in the centre with several smaller specimens, some fine densely flowered specimens of Dendrobium nobile, Odonoglossum Alexandre, pot Roses, Amaryllis, Gloxinias, small Grotons, Dracemas, and Isolepis gracilis. Mr. Seward, gr. to Sir R. H. F. Davie, Creedy Park, Crediton, followed every classly on the heels of the former, but his large specimens of Phenix dactylifera did not compare favourably with the beautiful Cocos in Mr. Rowland's collection; small specimens of Cocos, Gennoma gracilis and Lead and Section of the Section of Mr. Rowland's collection; small specimens of Cocos, Gennoma gracilis and Lead and Gloxinas were good pots of Amaryllis and Gloxinas were store and greenhouse plants, half in bloom and all fine-foliaged; and Mr. Rowland was placed od, though his flowering plants, which included a fine specimen, well flowering plants, half in holome and all fine-foliaged; and Mr. Rowland was placed od, though his flowering plants is receive great weight in the estimation of judges. For six stove and greenhouse plants Mr. Teed, gr. to Mrs. Ensor, The Bungalow, Topsham, took the 1st prize with a splendid Istora Williamsi, Aphelexis macrantha purpurea, and Clerodendron Balfourianum, Cocos Weddelliana, and Crotons Johannis and Warrein. Mr. Craiggs store to Susua Dixon, Esq., Winslade, was placed 2d, with a noble specimen of Anhurium crystallinum, Thrinax elegans, Croton intermedius, a well-flowered Azalea, Beauty of Surrey, a splendid old white variety; and a very fine Boronia elatior. Mr. Craiggs was 1st fors k Ferns, with good specimens of Gleichenia semivestita, Adiantum cardochlena, Nephrolepis davallidides firenas, Mr. Grea and and Serns, Horion and Cattleya Mena and Mr. Craiggs took the 1s

Cattleya intermedia, all very fair specimens. For six Ericas Mr. Teed and Mr. Craiggs took the 1st and 2d prizes respectively.

For nine Indian Azaleas, distinct, Mr. Weeks, gr. to E. Sanders, Esq., was awarded 1st bononrs, his specimens being all densely flowered and fresh. His principal varieties were Rosa multiflora, Duke of Devonshire, Standard of Flanders, Souvenir de Prince Albert, and Duke de Nassau. Mr. Seward was 2d, with a very nice tot of specimens, his Model, Stella, Hermine, and Duke de Nassau being the best. For six Azaleas Mr. Teed was 1st, and for six ditto in post not to exceed 8 inches Mr. Weeks was 1st and Mr. Teed 2d. The Azaleas Mr. Weeks was 1st and Mr. Teed 2d. The Azaleas Inches Mr. Weeks was 1st and Mr. Teed 2d. The Azaleas Coccipied a tent by themselves, and proved a source of great attraction to the visitors.

Begonias, 1st Devolution of the Control of the Gront, Mr. Greson, gr. to Lord Habeton, to cause to the front, Mr. Greson, gr. to Lord Habeton, and Mr. Rowld, 2d. In the class for six pot Roses Mr. Teed staged Madame Rothschild, Madame Lacharme, Countess of Oxford, Victor Verdier, Beauty of Waltham, and La France, in very fair condition, and was awarded 1st prize. For nine Calceolarias Mr. Rowland carried off the 1st prize, with a very die condition, and was awarded 1st prize. For nine Calceolarias Mr. Rowland carried off the 1st prize, with a very handsome lot; Mr. Counter, gr. to Mark Farrant, Esq. being 2d, also with a very creditable collection. For nine Pelargoniums the same competitors were placed in the same order.

CUT FLOWERS.—For twelve Roses (one variety), Mr. Barnes, gr. to T. C. Daniels, Esq., Stoodleigh Court, Tiverton, was 1st, with a grand box of Marcehal Niel; Mr. Leach, gr. to John Drew, Esq., Park Villa, Kenton, being 2d, with the same variety. For twelve Roses, distinct, Mr. Barnes again won the 1st prize; and also

staged a box of twenty-four trebles, distinct, not for competition, in first-class style. Mr. Ayson, gr. to E. F. Studd, Esq., Oxton House, was 1st for eighteen Pansies,

FRUIT.—Mr. Geeson was 1st for black Grapes, with Black Hamburghs, nice shaped bunches, and well coloured; Mr. Lang, gr. no Lord Poltimore, was ad, For white Grapes, Mr. Isaac, gr. to B. C. Gidley, Esq., was placed sts, and Mr. Geeson ad—the first with Muscats, and the latter with Foster's Seedling. Mr. Isaac was 1st with six Peaches, Early York, and W. Cuttbertson, Esq., ad, with Hale's Early—both very good dishes. Mr. Cutthertson was 1st for a Melon; and Mr. Powell, gr. to the Earl of Devon, 1st for Strawberries, with Sir Joseph Paxton; 2d, Mr. Seward. Mr. Barnes was awarded an extra prize for a very fine dish of Citrons,

VEGETABLES.—A great number of competitors staged collections of six kinds, exclusive of salading, the rst prire failing f Mr. James, gr. to Sir John Walrand, Bradfield, 18 Mr. James, gr. to Sir John Walrand, Bradfield, 18 Mr. James, gr. to Sir John Walrand, Bradfield, 18 Mr. James, gr. to Sir John Walrand, Bradfield, 18 Mr. James, J. Mr. Battnes was related was ad, and Mr. Branes, 3d. Mr. Battnes was was rst for ledge of salad and twelve Tomatos; and Mr. Sollmad, John W. H. Dunsford, Esq., Tiverton, was rst for ledge Caulifiowers; the Rev. L. F. Potter 1st for red kidney Potatos and three Cabbages; Mr. Leach 1st for six Cos. Lettuce and twelve Omions. On the whole the vegetables were very good, considering the long period of dry weather which has prevailed. (From a Correspondent).

vegetables were very good, considering the long period of dry weather which has prevailed. (From a Correspondent).

Paris Horticultural: May 20 to 26.—The spring show of this Society was well attended by the public especially on the 22d, when 12,000 persons a public especially on the 22d, when 12,000 persons a public especially in the 22d, when 12,000 persons a public especially if foreign exhibitors send plants. The French people, and the Parisians above all, are beginning to take an interest in these shows, the number of visitors increasing every year. The place where the shows are held is a very suitable one, being in the Pavillon de la Ville de Paris, in the Champs Elysées, the most fashionable quarter of Paris. There is plenty of ground around it, well shaded with Chestnut trees.

Orchids were shown in quantities, good small plants as a rule, but of Indian Azaleas there were only a few, and nothing striking among them. The Grand Prix d'Honneur went this year to M. Charles Verdier, who staged a large collection of standard Rose trees and dwarfs. We notted the following:—Tugenie Verdier, Euglea Appert, Jean Louis and the paris of the collection of standard Rose trees and dwarfs. We notted the following:—Tugenie Verdier, Euglea Appert, Jean Charles Lelebure, Paul Néron, Abel Carrière, La France, Camille earnedin, &c. This lot was placed in a large tent adjoining the Pavillon. In the Pavillon M. Léon Duval, of Versailles, had a group of well grown Dracenas and Orchids, among the latter being Odontoglossum vexillarium, Pescatoric, cordatum, Alexandre, and Schlieriana; Cypripedium lavigatum, Argus, niveum, and Hookeri; Maschevallias of sorts, Ada aurantiaca, and Dendrobium thyristiorum. The Dracenas were Gladstonei, Liervali, Wilsoni, amabilis (always one of the best), regis, Mooreana, Fraseri, salmonea, iguea, creeta alha, Chelsoni, ancrepensis, excels, Robinsoniana, Lindeni, Massangeana, and Goldieana. Mr. Landry, of paris, contributed a group of various plants, paris, contributed a group of various plants, pa

fruits.

M. Godefroy-Lebenf, of Argenteuii, the Editor of the Orchidophile, staged, not for competition, two fine groups of Orchids, containing good varieties of Odontoglossum vexillarium, Alexandra, Pescatorei, cordatum, and luteo-purpureum; Phalenopsis amabilis, and Schileriana; Onedidum Marshalli, Acklandie, Skinneri, and Mossice; Vanda tricolor and suavis, Cypripedium Lawrenceanum, candatum, Dauthieri, calurum, villosum, Dominii, and Lowii; Lycaste Skinneri, Trichopilia crispa marginata, suavis, Leela purpurata, Arpophyllum giganteum, Masdevallias Lindeni, Houtteana, Wallisi;

Chysis bractescens, &c., also a very good plant, well flowered and marked, of Authurium Scherzerianum Rothachidau Dessel, & Roy of Ibrifs, and M. Louis Rothachidau Dessel, & Roy of Ibrifs, and M. Louis Lender Dessel, & Roy of Ibrifs, and M. Louis Lender Dessel, & Roy of Ibrifs, and M. Louis Lender Dessel, & Roy of Ibrifs, and M. Louis Lender Dessel, & Roy of Ibrifs, and M. Louis Lender Dessel, & Roy of Ibrifs, and M. Louis Lender, & Roy of Ibrifs, and M. Louis Lender, & Roy of Ibrifs, and Lender, & Roy of Ibrifs, and R. Louis Lender, & Roy of Lo

Massachusetts Horticultural,—At the exhibition on April 12 gratuities were awarded to the Hon. Francis B, Hayes, for greenhouse Rhododendrons; W. H. Baldwin, for Primula vulgaris (English Primroses), and W. C. Strange, for Général Jacqueminot Roses. April 19,—W. S. Simpkins exhibited twelve specimens of the Cornelia Cook Roses, the finest ever seen here, and was awarded a Silver Medal for them. F. S. Ames exhibited a large collection of rare and beautiful Orchids, and was awarded a Silver Medal for Cypripedium ciliare. A gratuity was awarded to Sewall Fisher, for some fine seedling Pinks; and to Francis P, Hayes, for an Indian Azalea; W. C. Strong, for Général Jacqueminot Roses; and to Mrs. E. M. Gill and Mrs. A. D. Wood, for displays of flowers. April 26.—At this exhibition there was a remarkably fine display of Pansies. C. W. Norton exhibited flowers that measured 3½ inches in diameter. David Allen, gr. to R. M. Pratt, exhibited flowers of two Bomareas, beautiful greenbouse climbers. May 3.—In to-day's exhibition sone fine plants were shown. David Allen, gr. to R. M. Pratt, exhibited a Silver Medal. Edward L. Beard exhibited en Gowers of Amenone and other flowers. John Mitchell had a very extensive display of Primulas, Gratuities were awarded to Messrs, Beard and Mitchell, and also to Mrs. E. M. Gill and Miss S. N. Strong, for displays of cut flowers. May 10.—The exhibition of to-day was very attractive one. Messac Petagroniums, Azalesa, and pretty was a proper successive plants, including Heaths, Eriostemons, and W. K. Wood, a new fragrant Crimm from the Cape of Goot Hope. John Gardener exhibited a stand of greenhouse plants, including Heaths, Eriostemons, and W. K. Wood, a new fragrant Crimm from the Cape of Goot Hope. John Cardener exhibited a stand of greenhouse plants, including Heaths, Eriostemons, and W. K. Wood, a new fragrant Crimm from the Cape of Goot Hope. John Cardener exhibited a stand of greenhouse plants, and from Mrs. P. D. Richards came a fine collection of wild flowers. Prizes and gratuitie Massachusetts Horticultural,-At the exhibi-

to John L. Gardner. Basket of flowers: the 2d prize to Miss S. W. Story. Fifty Pansies: E. S. Beard; 2d, Mrs. B. M. Gill. Herbaccons plants: J. W. Manning. Gratuities were awarded to John L. Gardner, for plants; B. R. Freeman, for native Violets; Mrs. E. M. Gill, for Pansies; B. G. Smith, for Andromeda floribunda; Geo. Seaverns, for Hydrangea; E. L. Beard, for Anenone and Primuta Sieboldi; W. H. Wood, E. Sheppard, Mrss. S. W. Strong, and Hovey & Co., for cut flowers. A Bronze Medal was awarded to David Allen, gr. to R. M. Pratt, for a plant of Odontoglossam Edwardit. (From a Correspondent.)

Variorum.

VEGETATION ON THE CONGO.—Clumps of a dwarf Palm, Phœnix spinosa, which bears a just eatable starveling Date, hedge in these beautiful Orchids from the wash of the river, and seem a sort of water-mark that the tides rarely pass, but the water often leaks through the mud and vegetable barrier, and forms inside the ring of dwarf Palms many little quiet lagoons, not necessarily unhealthy, for the water is changed and stirred by each recurring tide; and in the lagoons hordered by Orchids and tall bushes, with large spatulate leaves and shining white bracts about their flower-stalks [Mussænda], by Paudanus, by waving Oil-Palms, and by Mangrove trees, poised on their many feet, and telling out against the shining sky with their lace-like tracery of leaves-in these quiet stretches of still water are the homes and feeding grounds of myriad forms of life : of blue land-crabs, whose burrows riddle the black soil; of always alert and agitated "mud-fish," flapping and flopping through the ooze; of tiny amethystine red-beaked kingfishers, of kingfishers that are black and white, or large and grey and speckled; of white egrets, of the brown and storklike Scopus umbretta; of spurwinged geese, and of all-devouring vultures. rustling in the vegetation, and a large voracious lizard slips into the water, or on some trampled bank a crocodile lies asleep in the warm sun with a fixed smirk hanging about his grim muzzle. These lagoons are places seething with life—life that is ever stirring, striving, and active—and when you suddenly arrive, slipping and splashing in the watery footholds, the sudden silence that greets you is rather the frightened hush of a thousand apprehensive creatures. " The River Congo," by H. H. Johnstone,

DESERT PLANTS .- Several enterprising cultivators are now, at our suggestion, trying to multiply the thornless Opuntia and the Spek-boom in Namaqualand, Angra Pequina, and elsewhere. I think these excellent food plants have not received the attention they deserve. Of course they are special food plants, suited to special localities, and do not come into competition with the ordinary veldt-hosjes and grass wherever the climatic conditions permit the usual pasturage. But I am sure that, should the Spek-boom be incapable of acclimatisation on the sun-smitten randts of Namaqualand, the Opuntia may be grown in vast thickets at the junction of rock and sand veldt, and its use would save much of the present expenditure in importing compressed hay for trek-cattle. Such culture throughout all carroid districts of the colony subject to frequent failure of seasonal rains is far more important than the introduction of any more of the fancy staples which are from time to time proposed, praised, and forgotten, and which have given point to the proverbial sneer that "the Cape is a country of samples." M'Owan, in " Report of the Cape Town Botanic Gardens."

THE FORESTS OF EUROPE are estimated to cover 500 millions of acres, or nearly 20 per cent. of the surface of the Continent. In British North America there are said to be 900 millions of acres of forest, in the United States 560 millions, in South America 700 millions. The total thus estimated for Europe and America alone is equal to 3,600,000 geographical miles, each containing 736 English acres. It is interesting to compare this area, so far as the possible supply of fuel is concerned, with that of the coalfields of the world, which is estimated at 134,000 geographical miles. Of this area one-twenty-fifth part is in the United Kingdom, or 5360 geographical miles of forest, against 5000 geographical miles of coalfields in full work. Four-fifths of the known coalmeasures lie within British and American territory, the forests of Europe and America covering twenty seven times the area of the known coal-measures of the world. In Baden, where the forest statistics are

carefully prepared, the annual production of wood is less than the weight of hay that can be grown on an equal area. At that rate—which is low for an average—each geographical mile of forest will yield, one with another, 1500 loads of timber per annum. But a square mile of coal-measure yields something like 20,000 tons in the year. The latter produce, however, is limited and exhaustible. Extract the coal, and not only is there an end of the fuel, but the soil itself is generally reduced to utter waste. Arrange the forest according to the best theories of forestry, and its yield is perpetual. Builder.

TIMBER IN TEXAS. - As an illustration of the extent of the timber trade in North America the following extract from a recent report from Texas will be of interest :- Notwithstanding the fact that the greater proportion of the State consists of immense prairie Texas possesses the largest area of woodlands of any State in the Union. The timbered country is situated in Eastern Texas; and, according to the Forestry Report, in 1880 there were 63,000,000,000 feet of standing Pine, worth, on the average at the mills if sawn up into planks, 12 dols. per 1000 feet. Besides Pine there are large quantities of Cypress timber, both red and white, from which roofing shingles are made. At Beaumout these mills turn out 250,000 daily, and at Orange six shingle mills made during the year 1881 66,000,000. Of Cypress shingles Bois d'Arc is very abundant in some counties, and for posts is unsurpassed, as it will last for years in the ground without rotting. It is also used for carriage and waggon spokes, and is also coming into use for paving streets. It does not appear what the botanical name of the Bois d'Arc is. The report from which the foregoing is taken concludes by saying that the vast territory of Texas, covering an area one-third larger than either France or Germany, with its divers interests and resources, offers an unlimited field of enterprise for the capitalist, and equal advantages in other ways to persons of small means, to practical farmers with capital enough to make a start, and to the mechanic.

The Meather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON

FOR THE WEEK ENGING WEDNESDAY, MAY 28, 1884.											
MONTH AND DAY.	BARON	т	EMP T	ERAT HE A	URE IR,	OF	duc fr Glai Tab	rome- l De- tions om sher's les 6th ition.	WIND.	4	
	Mean Reading Reduced to 32° Fahr.	Departure from Average of 18 years.	Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 50 years.	Dew Point.	Degree of Humidity. Sat. = 100.	Average Direction.	RAINFALL
May	In.	In.									In.
22	30.22	+0,48	72.5	44.0	28.5	57.8	+ 37	50.6	77	E.	0,00
23	30.00	+ 0.25	78.0	47-5	30.5	62.3	+ 80	52.3	70	E.	0 00
24	29.85	+0.12	81.0	50.0	31.0	63.3	+ 8.7	54 7	73	E.	0.00
25	29.94	+0.19						47.4	84	E: N.E	0.00
25		+0.37						46.2	68	E.	0.00
							+ 0.6			E.	0.00
27	30.08									E.	0.01
28	30.07	+0.29	54.5	43.0	11.5	40 7	- 00	141.0	/5		
Mean	30.04	+0.29	6g.1	46.3	22.8	56.7	+ 18	48.5	74	E	0.00
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22.—Very fine bright day and night.
23.—Very fine bright day and night.
24.—Very fine bright day and night.
25.—Duil day and night.
26.—Fine bright day and night.
27.—Fine bright day and night.
28.—Duil day and night; cold wind.

LONDON : Atmospheric Pressure .- During the week LONDON: Atmospheric Pressure.—During the week ending May 24, the reading of the barometer at the level of the sea increased from 29.75 inches at the beginning of the week to 30.17 inches by 9 A.M. on the 20th, decreased to 30.14 inches by 9 A.M. on the same day, increased to 30.45 inches by 9 A.M., addereased to 30.41 inches by 3 P.M., and increased to 30.41 inches by 3 P.M., and increased to 30.01 inches by midnight on the 21st, decreased to 30.01 inches by 3 P.M. on the 24th, and was 30.05 inches by the end of the week.

The mean reading of the barometer for the week at the level of the sea was 30.15 inches, being 0.17

at the level of the sea was 30.15 inches, being 0.17 inch higher than last week, and 0 23 inch above the average of the week.

Temperature. — The highest temperature in the shade in the week was 81°, on the 24th; the highest on the 18th was 50°. The mean of the seven high day temperatures was 60°.4.

The lowest temperature was 41°.1, on the 21st; on the 18th and 24th the lowest temperature was 50°. The mean of the seven low night temperatures was 46°.2.

The mean of the seven rowing transported 46°.2.

The greatest range of temperature in one day was 31°, on the 24th; the smallest was 9°, on the 18th. The mean of the seven daily ranges was 23°.2.

The mean temperatures were—on the 18th, 52°.9; on the 19th, 53°; on the 20th, 53°.2; on the 21st, 55°.4; on the 22d, 57°.8; on the 23d, 62°.3; and on the 24th, 63°.3; of these the first three were below their averages by 0°.3; 0°.6, and 0°.5 respectively, and the last four were above by 1°.5, 3°.7, 8°, and 5°.7 respectively.

and the last lour were above by 1.5, 5.7, 1.8, 5.7, respectively.

The highest reading of a minimum thermometer with blackened bulb in vacuo placed in the full rays of the sun was 142°,5, on the 24th. The mean of the seven

sun was 142.5, on the 2410. The mean of the seven readings was 119.2.

The lowest reading of a minimum thermometer with its bulb placed on grass was 34. on the 21st. The mean of the seven readings was 38.1.

Rain.—Rain fell on the 18th, to the amount of

0.06 inch.

ENGLAND: Temperature.—During the week ending May 24 the highest temperatures were St.2 at Cambridge, 81° at Blackheath, 50°,1 at Nottingham; the highest at Suoderland was 60°, at Plymouth 70°.8, at Brighton and Sheffield 73°. The general mean was 25°.4.

at Brighton and Sheffield 73°. The general mean was 75°.4.

The lowest temperatures in the week were 41°.1 at Blackheath, 41° at Brighton, 39°.4 at Liverpool; the lowest at Truro was 32°, at Cambridge, 33°, at Nottingham 33°.2. The general mean was 36°.0.

The greatest ranges were 48°.2 at Cambridge, 46°.9 at Nottingham, 44° at Truro; the smallest ranges were co° at Sunderland, 32° at Brighton, 33°.3 at Plymouth. The general mean was 38°.5.

The mean of the seven high day temperatures was highest at Nottingham, 72°.6, at Cambridge 71°.8, at Blackheath 69°.4; and was lowest at Sunderland, 62°.1, and at Liverpool and Bolton 63°.7. The general mean was 66°.5.

The mean of the seven low night temperatures was highest at Brighton, 47°.3, at Blackheath 46°.2, at Allackheath 46°.2, at Line 10°.20°.3°.

The mean of the seven low night temperatures was highest at Blighton, 47°.3, at Blackheath 46°.2, at Suoderland 45°.9; and was lowest at Truro, 30°.3, Wolverhampton 30°.5, and at Cambridge 39°.9. The general mean was 42°.7.

The mean daily range was greatest at Cambridge, 31°.9, at Nottingham 30°.5, at Truro 28°.1; and was least at Sunderland, 16°.8, at Liverpool 18°.3, at Brighton 18°.5. The general mean was 23°.8.

The mean temperature was highest at Blackheath, 56°.8, at Nottingham 55°.6, at Brighton 54°.9; and was lowest at Wolverhampton, 50°.6, at Bolton 50°.8, and at Sheffield 51°.4. The general mean was 52°.9.

heath, 50.0, at Rottingnam 55.0, at Engition 55.4.9; and was lowest at Wolverhampton, 50.6, at Bolton 50.8, and at Sheffield 51.4. The general mean was 52.9.

Rain.—The largest fall was 0.13 inch, at Leeds, 0.10 inch at Wolverhampton, 0.06 inch at Blackheath; the smallest fall was 0.01 inch, at Sheffield and Bradford. No rain fell at Truro, Plymouth, Bristol, Leicester, Cambridge, Nottingham, Liverpool, Bolton, or Sunderland. The general mean fall was 0.03 inch. was 0.03 inch.

SCOTLAND: Temperature.—During the week ending May 24, the highest temperature was 75°, at Perth; at Greenock and Leith the highest was 70°. The general mean was 72°.

The lowest temperature in the week was 32°,

The lowest temperature in the week was 32°, at Perth; at Leith the lowest temperature was 38°,4. The general mean was 36°,1.

The mean temperature was highest at Dundee, 52°,9; and lowest at Glasgow and Perth, 49°.8. The general mean was 50°,9,

Rain.—The largest fall was 0.51 inch, at Leith; and the smallest fall was 0.07 inch at Paisley. The general mean fall was 0.24 inch. No rain fell at Perth.

JAMES GLAISHER, F.R.S.

Answers to Correspondents.

BERNE CONVENTION: J. T. R. All the European States except Russia, Norway, Sweden and Denmark. States except Russia, Norway, Sweden and Demmark, CYTISUS ADAMI: R. G. The specimen you send is a good example of the very curious graft-hybrid said to have been produced by grafting or budding C. purpureus on the very different C. Laburumm. In the specimen sent some branches are like those of the two parents, others intermediate in character. Though not very uncommon, this tree always excites astonishment, as well it may. A ton, or perhaps a ton-and-a-half, of literature exists concerning it.

DEFORMED ONION: E. S. Apparently the outer coats of the bulb have been eaten away by sings or grubs, and through the aperture so formed the base of one of the inner leaves has protruded.

HYDRANGEA: H. Michel. Your supposed new double-flowered Hydrangea seems to us to be only the H.

stellata prolifera, illustrated in the Flore des Serres,

INSECTS: H. E. The spider you send is certainly not likely to injure your Vines.

LARICIO AND SCOTCH FIR: 7. S. Very different. Get the forester to show you the two. It would take too long to describe the differences here. The cone of Laricio was figured a short time since: see p. 15 of our issue for January 5 last.

our issue for January 5 last.

NAMES OF PLANTS: C. IV. Spirca prunifolia, single-flowered form — J. Mell. Oxalis corniculata. No one knows what the true Shamrock is.— J. D. Sisymbrium Sophia.— The Islands, Allium ursinum.— D. Dovodcavell. 1, Geranium Robertianum; 2, Potentilla Tormentilla; 3, Melampyrum pratense; 4, Lotus corniculatus; 5, Veronica officinalis; 6, Gly-ceria aquatica.— IV. Mayo. Lamium purpureum aureum, a variegated form of the common Dead Nettle.— H. H. D. O. Illicium ainstum; Cytisus Adami. — Ash. 1, Saxifraga granulata; 2, Allium ursinum; 3, Berheirs atropurpurea; 4, Weigela rosea; 5, Ribes aureum.— S. Lord. Lolium perenne; 2, Holeus molis.— W. A. C. The Bird Cherry (Prumis Fadus), and Anthoxauthum odoratum.— William, Epidedicum variegatum Epidendrum variegatum

Epidendrum variegatum.

POLYANTHUSES: "J'as. Cocker & Co. No doubt your double Polyanthus (No. 15) is a very fine and irce-blooming kind, and growing in the open is doubtless seen to much greater advantage than when gathered. The blooms are very double, and of a bright golden hue much nixed with red. Had it been a good self of either colour we should have thought it preferable, but that may be but a matter of taste. The yellow hose-in-hose Cowslip is much below the best kinds we see here in the South, both in size and colour. We can imagine that both it and the deep red hose-in-hose kind sent are very free and effective in masses, but both come considerably below the size and quality seen in such forms as Cioth of Gold, Scarlet Gem, or Lord Wolseley. Your Primula species is P. Murroii, a very charming thing, and one of the most distinctive of a beautiful family.

VINES AND MELONS: An Old Subscriber. Scalding is the cause of the mischief in both cases. You either give air too late in the day, or close too early in the case of the Vines; and make the Melons weak by shading. Gradually inure them to the sun-light and heat, and so encourage, a stronger root action. encourage a stronger root-action.

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Markets.

COVENT GARDEN, May 29.

A GENERAL improvement in business this week has hardened prices. Strawberries and Peaches in better demand, at a slight rise. Supplies good. James Webber, Wholesale Apple Market.

FRUIT.-AVERAGE WHOLESALE PRICES.

FRUIT.—AVERAGE VIOLENALE FINESO.

1. d. 1. d.

Apples, ½-sieve . 30- \$0

Figs. per dozen . 40- 80- — \$1. Michael's, each 20- \$0

Lemmos, per case . 100- 140

Feaches, per doz . . 60- \$0

Lemmos, per case . 100- 140

Feaches, per doz . . 60- \$0

VEGETABLES .- AVERAGE RETAIL PRICES.

Artichokes, Globe, per doz	Herbs, per bunch
Celeriac, per root 0 4- 0 6 Celery, per bundle 1 6- 2 6	Sprue, French, bund. 7 6-
Endive, French, per dozen 2 o Garlic, per lb o 6	Tomatos, per lb 3 6 Turnips, per bun 0 4 — New 3

POTATOS.—Kent Magnums, Sor. to 100s. per ton; do., Regents, Sos. to 100s.; Champions, Sor. to 65s.—New: Jersey Kidneys, 16s. per cwt.; Lisbon, 10s.; Malta, 10s. to 12s.

CUT FLOWERS .- AVERAGE WHOLESALE PRICES.

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

Abutilon, 22 bunches 20 - 40 Anemores, a 2 bunches 20 - 40 Aram. Lilies, 12 bunc. 20

SEEDS.

LONDON: May 28.—The seed market to-day was thinly attended, and the business doing as nearly nil ns possible. The prolonged drought is having a prejudicial effect upon the young Clovers, Trefoils, and grasses. Sowing Rape seed, being in imp rowed request and short supply, has advanced 21, per or. Canary seed, Hemp, and all bird seeds, continue dull of sale. Yohn Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.

CORN.

CORN.

At Mark Lane on Monday the demand for both Wheat and flour was extremely small, and previous rates hardly obtainable. Burley met a moderate demand, and on the week must be quoted 6d. dearer. Beans remained at the rates of Monday week. Peas were scarce, and steady in value. Lenuis were lower. Oats were fully it, dearer on the week, and Maize stood 1s. above the previous Monday's vellue.—On Wednesday quotations for both Wheat and flour were nominally unaltered. Barley, Beans, and Peas were quiet, but with a steady tone. In Maize business was quiet. Oats were very firm, and rather dearer.—Average prices of corn for the week ending May 24:—Wheat, 38s.; Barley, 29s. 4d.; Oats, 20s. 7d. For the corresponding period lasty, ear. "Wheat, 43s. 7d.; Barley, 31s. 8d.; Oats, 22s. 2d.

CATTLE.

At Copenhagen Fields on Monday there was a very good assortment of cattle, but the trade ruled slow, especially at the finish, and 5s. 6d, was the most general top rate, but 2d, more was realised in some cases. Except for quite the prime neat weights and choice qualities sheep and lambs sold lower than last week. Calves were in demand, and prime qualities dearer, whilst there was little or no inquiry for pigs. Quotations:—Beasts, 4s. 10-5s., and 5s. 2d. to 5s. 8d.; calves, 5s. 8d. to 6s. rod.; sheep, 4s. 8d. to 5s. 4d., and 9s. 8d. to 6s.; lambs, 7s. 6d. to 8s.—On Thursday the trade was steadier. Peasts were quiet but firm. Sheep met with more attention, and were steady in value; lambs moved off more freely, and calves and pigs were quiet.

HAY.

Tuesday's Whitechapel Market report states that supplies were not quite so large as last reported, but trade was very dull. Quotations:—Prime old Clover, 95, to 1065, inferior, 60c, to 755, iprime second cut, 90s, to 1065, i best meadow hay, 80s, to 86s, i inferior, 40s, to 65s, i and straw, 28s, to 35s, per load.—On Thursday a moderate supply was offered. The trade was very quiet, at late rates.—Cumberland Market quotations:—Superior meadow hay, 86s, to 95s, inferior, 70s, to 80s, i superior Clover, 10ss, to 11s, inferior, 70s, to 80s, i; and straw, 34s, to 38s, per load.

POTATOS.

POTATOS.

There have been large supplies at market, and trade quiet at the annexed quotations:—Magnum Bonums and Victorias, 80s. 10 90s.; Regents, 70s. 10 90s.; Champions, 69s. 10 80s. per ton. New Potatos:—Jersey, 15s. to 16s.; Lisbon, 7s. 10 8s.; and Malta, 6s. 10 7sr. per cwt.—The imports into London last week consisted of 459 packages from Malta, 117 boxes Cadiz, 2708 Lisbon, 200 bags Hamburg, 500 Stettin, 201 boxes Valencia, 5930 packages Malaga, 1649 baskets St. Nazaire, and 55 cases from Alexandria.

Government Stock.—The quotations for Consols on Monday, Tuesday, and Wednesday were rotal to rotal for both delivery and account. Thursday's busi-ness was as previously for delivery, and rotal to rotal for the account.

6-inch Machine z-inch Machine

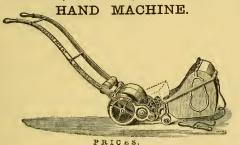
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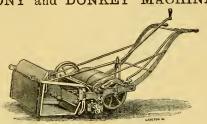
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To cut 10 inches wide £3 10 0 To cut 19 inches wide £8 0	0							
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The two smallest sizes can be worked by a boy; the 14 and 16 in, by a man;								
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	PR	ICES.							
inch Machine, I	Drawn by a Donkey						£13	10	0
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-inch Machine	Diawii by a rony					• •	17	0	0
	Donkey Boots, 20s.; F	ony Boots	, 245,	per Se	t.				
Patent D	elivery Apparatus, 25	inches, 25s	; 28	and 30	o inche	s, 30s,			

SMALL LAWN MOWERS. Specially designed for Small Lawns, Verges, &c.

	ES.						
 	 			••	•••	£1 5	0
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42-inch Machine 48-inch Machine Boots for Horse, 29s. per Set. Delivery Apparatus, 30 in., 30s.; 36, 42 and 48 in., 40s. GARDEN ROLLERS can be had of all sizes, Descriptive Price Lists of which will be sent on application The Prices include Delivery to most of the principal Railway Stations and Shipping Ports in the Kingdom.

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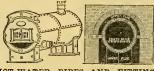
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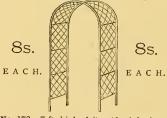
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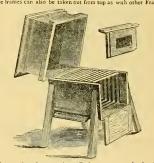
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Agents for Scotland—Messrs, J. Menzins & Co., Edinburgh and Glasgow.

CHRONICLE. GARDENERS'

Established 1841.

No. 545.—Vol. XXI. (NEW SERIES.)

SATURDAY, JUNE 7, 1884.

Registered at the General Price 5d.
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at South Kensington. - Two Large COLOURED PLATES (19 in. × 13 in.) of "DAFFODILS." Price 6d. each, post-free 7d. W. RICHARDS, "Gardeners' Chronicle" Office, 41, Wellington Street, Strand, IV.C.

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NOTICE!—COMMITTEES MEETINGS, Fruit and
floral, at r.A. M., in the Conservatory; SCIENTIFIC at r.F. M.
SENERAL MEETING for the Election of Fellows at
NEW J. June Ballery of the Conservatory, on TUESDAY
N.B.—Exhibitors' Entrance, west side of Royal Albert Hall.

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Schedules on application to G. BUSH, Secretary.

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HORTICULTURAL EXHIBITION, JULY 3, 3, and 4. Schedules and particulars of PHLIP MAC MAHON, Curator and Secretary.

NATIONAL POSE DESCRIPTION OF THE SCHEDULE SHOPPITCH SCHEDULE SHOPPITCH SHOPPI

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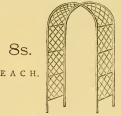
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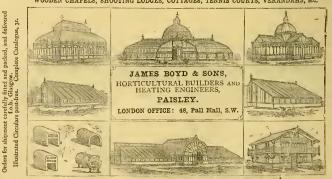
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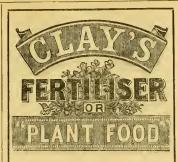
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THE

Gardeners' Chronicle.

SATURDAY, JUNE 7, 1884.

A LITTLE HOUSE WITH TREES A-ROW.

A VISIT to the home of Alexander Pope, one of several leading writers who originated the graceful as opposed to the formal style of landscape gardening, reminded us of a great philosopher of some years since who constantly lamented his defective education. He tells us in his Autobiography that at the age of three he was already learning Greek, and that he first studied Nature, at the age of thirty, in the pages of Wordsworth. He could not have had a better master, but he should have gone to school earlier, to the school which Kingsley refers to-that excellent naturalist and still better clergyman-when he describes the youth whom Nature invites to wander with

> " And he wandered away and away, With Nature—the dear old nurse— Who sang to him night and day The rhymes of the Universe.

" And whenever the way seemed long, Or his heart began to fail, She would sing a more wonderful song Or tell a more wonderful tale.

All men to be well balanced must feed on Nature young; most of our great men have done so. Alexander Pope "lisped in numbers" in Windsor Forest, and sang of his father's house at Binfield, "a little house with trees a-row," almost as a child. Born in Lombard Street, May 21, 1688, he was happily removed early to a house his father had purchased at Binfield—"my paternal cell," he called it in his boyish verses, "with trees a-row, and like its master very low."

He lived at Binfield from the age of twelve till he was twenty-eight, and here, in one of the best parts of Berkshire for soil and scenery, in the borders of Windsor Forest, he was healthfully reared, as Shakespeare had been in another country district, and Milton-though he, too, was London-born-in another. "First in these fields," he says, "I tried the sylvan One of the Beeches in the groves of strain." Binfield Park bore this inscription till its fall, "Here Pope sung." He wrote when very young, and he must have begun to think at an unusually early age. To a great extent he educated himself, showing the strength of his genius by becoming his own professor, instead of requiring, as most readers do, several teachers and "coaches" to assist him. Four schoolmasters, including one at Twyford, had done their best to confuse his brains, until, at the age of twelve, he came to live at Binfield, where Windsor Forest became his academy, the accomplished Sir William Trumbull his companion, and the poets his guides and masters.

All country people and those who are interested in gardens must naturally like to hear of improvements in rural districts, of the increase of wealth and comfort, the extension of education and refinement, the rise of families, the building of houses, the formation of gardens, and the planting of groves and shrubberies. In all these respects Binfield has advanced very considerably since the time of its illustrious poet. Two railway stations — Bracknell and Wokingham—each within 3 miles of Binfield and about 36 miles from London—have opened its communications, and an additional church has been erected for its increased population on the high ground, which those who come to reside here for the sake of air and scenery naturally prefer.

The old church, where Catherine Macaulay, the historian, was buried in 1791, lies low, as does Albay Park, a mile beyond it, with its old family Oaks and bits of scenery resembling old Windsor Forest. Two other large houses are of the older type, Binfield Park and Billingbear Park, each belonging to noble families-the latter to Lord Braybrooke, of Audley End, Essex. The village consists of a number of red houses, nests near one another, like those of rooks or swallows, and not always of the model kind. And now we reach the high ground where Pope's father's cottage stood, and still stands in part, incorporated with a good brick house occupied by a baronet, and crowning the hill 200 feet above the old church. Some very noble Scotch Firs in the grounds have given the mansion its name of "The Firs." Pleasing outlooks over distant parts of this county and of Bucks cheer it, winding lanes environ it, coverts surround it, and singing birds make music for it.

Most of the better houses in the parish have clustered around the new church on the high ground, and several of them have borrowed the poet's name, such as Pope's Nest, Pope's Wood Lodge, and Pope's Wood House, which the gallant General Sir Trevor Shute, who fought and won the battle of Egmont in India, and led the final charge, has greatly enlarged, and has named Egmont House. A reading and club-room, too, is about to be erected by subscription on this higher ground, certain benevolent subscribers having found the source of true happiness in helping their less fortunate neighbours.

Returning to the time of George I., when country villages were far less happy in their outlook than they now are, it would seem that excess was more natural to ardent youth then as now, for Pope, sickly boy as he was, brought himself to death's door at the age of twelve through excessive application as a student. At fifteen he was learning Greek, Latin, French, and Italian, and it is not surprising that about this time he was ordered by the doctors to work less, walk more, and, if possible, to ride on horseback. Mrs. Rackett, his sister, spoke of him as having "a maddish way with him," and a sweet temper. He recovered his health in Windsor Forest, rambling about and gathering flowers; and no doubt the healthfulness and beauty of many of the parishes, which were once included within the bounds of Windsor Forest, will render them more and more desirable to those who seek for pure air and an attractive country within an hour of London.

In visiting the early home of Pope, we do not particularly care to recall his sentimental stolid poem of "Windsor Forest." He did not excel in description, and his "Windsor Forest" is not equal to the real one; but apart from his poems, we owe him our gratitude as one of the most influential improvers of gardening. The design of old English gardens consisted in a formal and intolerable arrangement of straight lines, and Oueen Caroline's winding piece of water in Hyde Park, formed by the union of several detached ponds, and called from its shape the Serpentine, was regarded as a bold innovation. The custom of the eighteenth century occasioned a comical remark by Lord Strafford. Lord Bathurst had widened a brook at Ryskins, near Colnbrooke, and, with excellent taste, had followed the natural lines of the valley, instead of forming a straight canal; and

Lord Strafford, thinking he had acted from economy, asked him to own how much more it would have cost him to have made the stream straight!

Only the influence of great writers can break through superstitions on the subject of taste, and we owe the reform of landscape gardening to some of our greatest men-to Bacon, our foremost philosopher, to our greatest poet, as some have esteemed Milton, to one of the most accomplished essayists, Addison, and to Pope. The poet Mason, one of the other leaders of the better school of gardening, says, in a note to his "English Garden," that "Bacon was the prophet, Milton the herald, of modern gardening; and Addison, Pope, and Kent, the champions of true taste." Those who would test this opinion will know where to look for Bacon's essay, where we read that the Almighty planted the first garden, and for Milton's noble verses in praise of Nature; they will find Addison's view in his paper on "Imagination," 1712, and Pope's in his satirical essay on "Verdant Sculpture" in the Guardian of 1713, and in the "Epistle to Lord Burlington," where he lays down the true rules of art, recommends "good sense," the study of Nature and of the genius of the place. It was by writings such as these that the formal Dutch school of gardening was disparaged, the pathway prepared for landscape gardeners like Kent and his successors, and the taste of the public reformed.

The turn of the tide in regard to the fashion in gardening may be observed among the writers of two generations ago. Miss Edgeworth, for example, makes one of her characters say she "hated everything straight," and that "uniformity and conformity had had their day." Horace Walpole, who described so many gardens, and suffered from rheumatism after a fête champetre at Stow, aptly described the change from that reign of monotony when, quoting Pope again, grove nodded to grove, and each alley had its brother. It was Bridgman, the inventor of the "Ha, ha!" who discovered first, among landscape gardeners, that all Nature was a garden, in fact on this subject he leaped his own sunk fence. H. E.

PÆONIES.

As Pæonies, after a generation of neglect, are once again coming forward as garden favourites, I should like to say a few words about them. There is a capital monograph of them in the twelfth volume of the Transactions of the Linnean Society, by Mr. George Anderson, who immediately after writing it was killed by a fall from a carriage. It was founded upon the finest collection of garden forms that probably ever was brought together—seventy plants, that of Mr. Sabine, of the Horticultural Society, at North Mimms. In this monograph thirteen Pæonies are described under specific names, and their characters and syconyms are very carefully worked out. I should strongly recommend those of your readers who are working at Pæonies to 'get hold of this monograph and study it carefully. It was drawn up in the year 1817, and since that time a great many new forms have been discovered.

To-day we know about two dozen that may be considered as botanical species or subspecies. Under each of these, if brought into cultivation, there is scope for a large number of varieties, distinct from a horticultural point of view. Probably each would vary widely in the colouring of the flower. In Moutan, albiflora and officinalis, which are the best known, there is red in every shade, from crimson graduating down to pink, and also pure white.

Doubling may take place in any species to a greater or lesser extent by petalody of the very numerous stamens. In flowers so large as Pæonies these changes are very conspicuous.

The following is the best classification and enumeration of the forms which I am able to give, but Pæonia, like its neighbours Aquilegia, Aconitum, and

Delphinium, is what botanists call a critical genus, and the leading specific types are linked together by many intermediate connecting stages:—

Sub-genus r.—Shrubby. Disc enveloping the base of the carpels.—P. Moutan.

Sub-genus 2.—Herbaceous. Disc not produced to envelope the base of the carpels.

Follicles glabrous.

P. Wittmanniana, obovata, albiflora, Brownii, humilis, microcarpa, leiocarpa, coriacea, Cambessedesii.

Group 2.

Follicles tomentose, erect or slightly spreading.
P. tenuifolia, anomala, Emodi, officinalis, peregrina, paradoxa, lobata, mollis.

Group 3.

Follicles tomentose, spreading stellately when mature. P. corallina, Russi, Broteri, triternata (daurica), arietina, decora, cretica.

J. G. Baker.

(To be continued.)

SHELL-LIKE LARVA CASES.

AT the meeting of the Entomological Society of London, held on February 7, 1877, I exhibited "an extraordinary case of a Lepidopterous larva from Zanzibar, sent by Dr. (now Sir John) Kirk, who had found it on Mimosa. It was probably allied to Psyche and Oiketikus, and was in the form of a flattened Helix, half an inch in diameter, formed apparently of a kind of papier-maché, with a smooth whitish outside coating."

Very recently my friend Mr. Bates gave me nine cases of a somewhat similar character, found by Dr. Baxter at Mpwaipwa, East Africa, about 100 miles inland from Zanzibar. Dr. Baxter's attention had been drawn to them by seeing them carried about by the larvæ that formed them. But these, instead of being flattened, are high, and resemble shells of the genus Cyclostoma or Paludina in a wonderful degree (fig. 137, A). They vary from 9-13 mm. in diameter at the lowest whorl, by from 9-15 mm. in height. Each forms about 31 whorls, the sutures indicating which are not very sharp, owing to a coating to be presently alluded to. In six of them the spiral turns from left to right, in three from right to left. The apex is blunt and depressed; the mouth nearly circular, and there is a deep open umbilicus; all have the mouth perfectly open. Upon making a vertical section it is seen that the whorls are perfectly sepa-They are of extreme lightness, yet the walls are nearly 11 mm. thick. This lightness is owing to the texture, which, although perfectly hard and firm, is somewhat fibrous. The material is undoubtedly vegetable matter, but whether masticated specially for the purpose, or excrementitious, is uncertain to me. I rather incline to the latter idea, because there is no opening through which the excrement could be ejected, other than the mouth of the case. The exterior has a thin coating of (apparently) silk of a pale drab colour, which reoders the cases very smooth, but not glossy; but the older cases are blackened by a coating of what is probably adventitious matter. I am unable to say on what plant they were found, but one of them is attached to a fragment of a plant, which may possibly be Mimosa.

It is well known that exotic species of Psychidæ are given to fabricating cases of extraordinary forms, but, of all that I have seen, these are the most extraordinary, on account of their perfect similarity to shells.

The cases of the South European Psyche (Cochloplanes) belix, are tolerably familiar to most entomologists, but their resemblance to/shells is less marked, on account of the debrix with which their exterior is covered; moreover, the texture is slight and yielding, and at, or near, the apex there is an opening through which the excrement can be ejected. They bear more external resemblance to the now well-known cases of the Trichopterous genus Helicopsyche. For the sake of comparison I give here figures of the cases of Psyche helix (fig. 137, p). The figures are enlarged to two diameters, but the smallest figures (indicated by ") show the natural size.

With the above described cases, collected by Dr. Baxter, are others formed of twigs, arranged longitudinally or transversely (not uncommon), and one, 47 mm. long, mimicking a shell of the genus Denta-

lium, but such, I think, have already been noticed and described. R. MacLachlan, in "Entomologists' Monthly Magazine," June, 1884, and Royal Horticultural Society, Scientific Committee, May 13.

COLUMBINES.

THE botanical characters and the relationship of the different species of Columbine are of little importance to gardeners, who think more of the ornamental qualities of the flowers. We may say, however, that Mr. Baker, in his "Synopsis of the Genus Aquilegia," which appeared in the Gardeners' Chronicle of 1878, enumerates the names of seventy species described by different writers on botany; of these he retains twenty-five as sufficiently distinct, though in the Genera Plantarum of Bentham and Hooker we find the number of species of Columbine reduced to five or six. Perhaps even of these his would be difficult to define the limits, and perhaps from a gardener's point of view greater variations may be found within a single species than are to be found between one species and another. Without inquiring what are to be the few lavoured names which are to be retained with specific honours, it may be said that for all gardening purposes five are sufficient to form the base of a collection of the fioset Columbines, and adopting Baker's names I will call these A. vulgaris, formosa, chrysantha, ccerulea, and glandulosa. There are other distinct kinds which may be desirable additions

dry and sandy border. Of A. glandulosa the name is commoner than the plant. Its headquarters in the kingdom is the nursery of Messrs. Grigor, of Forres, from whom it can always be obtained true, as they grow no other kind. I believe that the best dealers in seeds are supplied with seed of this kind from them. In the Forres nurseries it grows 2 feet high, with twenty or thirty flowers on a plant, some of the flowers measuring 3 inches across, but in England its growth is less robust.

Mr. Baker describes two varieties of A. glandulosa—one which has the flower all blue; the other, which he calls var. jucunda, has the corolla white, but differs in no other way from the type. It is the latter form which Mr. Grigor has; the other, with the less ornamental self-coloured flower, does not seem to be in cultivation. The five kinds I have enumerated may all be raised from seed, which should be sown under glass early in the year, and the seedlings should be grown oo, so as to become as large as possible before their first winter. They should always be transplanted once or twice before they are moved to their flowering place, which should be done before winter; no Aquilegia moves well after it is a year old, or flowers well after being moved in spring.

A few words must be said about hybrids. Some of the best hybrids will come accidentally, others made by design will turn out disappointing. I do not find it difficult to effect crosses provided I apply the pollen with a camel-hair brush before the flower is quite

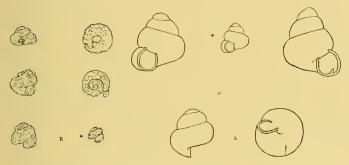


FIG. 137.-SHELL-LIKE LARVA CASES OF LEPIDOPTEROUS INSECT.

where large collections are grown, and some of these will be mentioned presently, but all the most beautiful Columbine flowers may be referred either to one of these five, or to hybrids of them.

A, vulgaris I consider the best seed parent for the tall showy kinds with large flowers and branching flower-stalks, and those with the largest single flowers, and the best and clearest self-colours, or the most distinct bicolor forms should be selected to keep. A, vulgaris includes many varietal names, as well as the kind described by Mr. Baker as A, sibirica, to which many of the handsomest of the common Columbines, especially those with a whole corolla, are probably to be referred.

A. formosa is the handsomest and brightest of those with red and yellow flowers. A. californica and A. truncata come very near it, and ought probably to be included in the name. It is, however, very important to a garden to get the best red Columbine which can be found; as the red flowers produce by far the largest quantity of pollen, and fertilise many other varieties near them. The poorest of all the reds is the common North American kind, called A. canadeosis. Unfortunately the seed of this is so easily obtained, and the plants so easily raised, that it abounds in gardens, though nothing tends more to deteriorate a good collection of Columbines than its presence. A. chrysautha is well known and easily raised and kept, though not so easy to keep true. Those with the largest flowers and of the clearest canary-yellow should be preferred. A. ccerulea is perhaps the most beautiful species of all, and the most important for forming hybrids. It is too well known to require describing. It prefers a

open, otherwise the bees are before me, and I never can depend upon the cross being made. The largeflowered forms of vulgaris are, as I have said, the seed-parents of the tallest and most showy hybrids, made with the pollen of glandulosa, or corrulea, or for The last-named kind produces the most effective crosses for size and abundance of flowers; it also has the habit of reflexing its sepals, and of protruding its anthers in a conspicuous bunch before the mouth of the corolla-two very ornamental features. I have been trying to obtain a variety of this cross with scarlet sepals, reflexed, and a white corolla, and have nearly succeeded. Red is often entirely absent from hybrids of formosa, the form being given without the colour. Second and third crosses may be successfully made, and after a little experience it will be found what combinations produce the most successful results. The best seed I have yet had has been some given to me by Mr. A. Rawson and Mr. Douglas, in which A. cœrulea has a conspicuous place.

I may say a few words in conclusion about several distinct kinds of Columbine not yet mentioned by me. The early and dwarf A. viridifiora is more curious than ornamental. A. fragans is a name common in seed lists, but I believe the plant does not now exist in cultivation. I have sown the seed of the best dealers for several years without ever producing anything like it, although I own that I have in one or two cases raised some very beautiful hybrids which have repaid me for my trouble. I have never seen in flower either A. alpina or A. pyrenaica; plants dug up in their native mountains can never be re-established, and though I believe Mr. Thompson, of I ps-wich, supplies true seed of both, it never comes up.

Plants sent from Continental nurseries have been altogether wrong. The last to be mentioned is A. Skioneri; this is curious, handsome, and distinct, but rare. The late Mr. Nelson, of Aldborough, kept it true, and from his garden I had seed, through Mr. W. Thompson, ten years ago, and have contrived to keep it ever since that time. Plants seldom live for more than two years; being a native of Central America it finds our winters too cold and our summers not warm enough, and it is hardly hardy here. It never flowers till July, and I carefully save the two or three pods of seed which it ripens. Plants I have now show as yet no signs of flower-stalk. I do not question the existence of the true plant in gardens in the South of England, but merely say that what is generally called A. Skinneri is a long-flowered form of A. canadeosis or californica. C. Wolley Dod, Edge Hall, June 1.

HUME TOWERS, BOURNE-MOUTH.

BOSOMED high in tufted trees, about I mile north of Bournemouth Pier, is Hume Towers, the commodious seaside residence of John Sellow, Esq. It is in the modern style of architecture, and is approached from the Branksome Road. From the tower, which is surmounted by a flagstaff, an extensive and pleasing view is obtained. South, east, and westward is the picturesque and salubrious town of Bournemouth, above which and the Pine trees among which the houses forming the town are built, and to the exhalation of which the salubriousness of the place is not a little attributed, tower the lofty spires of St. Peter's and other sacred edifices; and in the background is seen the undulating surface of the deep blue sea, dotted with ships of various sizes, and belonging to various nations, as far as the eye can reach; whilst away in the distance to the right and left can be distinctly seen the "Old Harry Rocks" and the "Needles." Immediately north of the Immediately north of the mansion and contiguous to the pleasure grounds in that direction is an unbroken expanse (apparently 1000 acres) of Pine wood, which forms a striking though sombre contrast to the other side of the picture.

The pleasure grounds, which, fourteen years ago, were, like the whole of this charmingly situated estate, part of the adjacent woods, are opposite the south and west fronts of the house, whence they slope sharply in the direction of the Branksome Road, and between which and the grounds a high, flourishing, and well-kept Holly hedge makes a capital boundary and screen. These well-kept grounds have been laid out with taste and skill, and judiciously planted with an assortment of choice Conifers and ornamental and flowering shrubs, and which, for the time they have been planted, have made rapid and luxuriant growth. Two beds of choice Rhododendrons in fine flower and variety were especially worthy of notice, as also are nice specimens of Araucaria imbricata, Wellingtonias (both clothed to the ground with healthy branches), Abies Nordmanniana, Pinus Lambertiana, Thuiopsis borealis, and the Strawberry tree (Arbutus Unedo), of which there are about forty fine bushes covered with large clusters of fruit, which, when ripe, contrast effectively with the oblong-lanceolate serrulated green leaves underneath. The double flowering Gorse is a capital sea-side plant. The general character of the soil in which the above-named trees and shrubs are luxuriating is peaty, resting upon a hard gravelly subsoil which is impregoated with iron, and was trenched between 3 and 4 feet deep before the trees and shrubs were planted in it.

The kitchen garden, which is south of and contiguous to the pleasure grounds, but effectively shut off from the latter by trees and shrubs, covers an area of about 2 acres (including the space occupied by the glass-houses and fruit trees), and is well cropped and, like the place in general, well managed. A noteworthy feature in connection with this department is a capital illustration of the useful and ornamental combined in the way of a fruit arbour 286 yards long, over the two side and bottom walks (the glasshouses being at the top) of this garden, which slopes gradually to the south, from which direction the arbour is entered from the ornaniental grounds. It is a substantial and ornamental framework of iron and wire, and is well covered with Apple, Pear, Plum, and Cherry trees in variety, and which in ordinary seasons yield fairly good crops, but this year Mr.

William Harp, Mr. Sellow's able gardener, and to whom the credit of making these interesting and well-kept gardens is due—will have to be satisfied chiefly with the ornamental character of this delightfully shady summer promenade.

GLASS-HOUSES .- These consist of three vineries, three Peach-houses (span-roofed), one plant-stove, In the vineries are nice even and one greenhouse. crops of average-sized bunches, those in the early house approaching maturity. The following Peach and Nectarine trees are healthy and carrying good crops of fruit in the Peach-houses, which run east and west-viz., Royal George, Grosse Mignonne, Stirling Castle, Bellegarde, George IV., and Walburton Admirable Peaches; and Elruge, Victoria, and Violette Hâtive Nectarines. The plant-stove con-tains a nice clean well-grown lot of fine-foliaged and flowering plants, chiefly of a decorative character, the most noticeable being fine plants of the Golden Fern (Gymnogramma chrysophylla), Adiantum cultratum (A. trapeziforme), Davallia divaricata, Adiantum Sanctæ Catharinæ; and ol ornamental-foliage plants Alocasia metallica, Cissus discolor, Dracænas, &c. Two grandly flowered plants of Hoya carnosaone on a pyramid oval trellis, and the other trained to wires underneath the roof-also find room in this

The greenhouse is gay with a variety of flowering including Pelargoniums, Calceolarias, Petunias, Cinerarias, amongst which were a few good doubles, bright magenta; Azaleas, in variety; Epiphyllum splendens and salmoneum, the latter a delicately-scented variety); Salvia rosea, a dwarf, compact-growing variety, and said to be a good bedder; Caroation Souvenir de la Malmaison, Tropæolum tricolorum (neatly-trained), Centaurea ragusina compacta, a very effective decorative plant, and easily increased by offsets inserted singly in 3-inch pots filled with sandy soil, and placed in a close frame, and shaded from bright sunshine until they have emitted roots, when it should be discontinued, and the plants gradually inured to light and air. Flowering shoots of Tacsonias Van Volumii and exonicusis, depending gracefully from the roof, give variety and finish to this house; and for the benefit of those of your readers who have hitherto failed to flower satisfactorily these very free-flowering climbers, I may be allowed to state that all that is necessary to Insure success with healthy free-growing plants is to train the shoots thinly and loosely to a series of wires fixed underneath the roof of a light greenhouse or conservatory, cut clear away all superfluous shoots, and keep the roots, which should be confined to either large boxes or narrow well-drained horders, consisting of three-parts sandy loam and one of peat, well supplied with water. With a passing reference to the good Mushroom-house, fruit-rooms, young men's apartments, &c., in the rear of the vinery range, and the fine banks of Rhododendrons and Holly in the background, we will conclude our brief notice of Hume Gardens, over which Mr. Harp has presided for the last fourteen years with credit to himself and satisfaction to his employers. H. IV.

RHODODENDRONS AT HARROW WEALD PARK.

THE beautiful grounds of Harrow Weald Park, in which stands the stately Gothic residence of A. Sims, Esq., have for the last three weeks been enlivened with an astonishing display of glorious colours. For the last few years the gardens and pleasure-grounds, which comprise an area of 15 acres, have been enriched by the addition of the best new varieties of Rhododendrons, Kalmias, and hardy Azaleas. plants are arranged for the most part in picturesquely disposed clumps. The subsoil, which lies only 4 inches below the surface, is the tenacious London clay. A portion of this is removed, and a bushel or more of fibrous loam is mixed with a shovelful of peatthat is the compost used. There are several instances, however, in neighbouring gardens, where Rhododendrons are thriving in fibrous loam alone, without any peat whatever. Clumps of Lilium auratum are interspersed with the American plants, which form later on an effective background to this grand Lily. I will mention a few of the most effective :-Eclipse, very large, chocolate-crimson; Generalissimo, rosy-crimson; atrosanguineum, fiery crimson with black spots; Illuminator, rosy-pink, bright and effective; Mrs. John Penn, salmon, edged with lake; Queen of the West, rose with chocolate spots; Scipio, one of the most striking of the rose-coloured section; Curator is a beautiful shaded lilac, with light throat and deep yellow spots, Among the whites I was most struck with Purity, Snowflake, Crown Prince (edges tinged with blusb), and Empress Eugénie. I should be glad of an opportunity later on to give some account of the gardens, houses, and grounds—they are well deserving of note. There is a fine collection of coniferous plants, a large bardy fernery, well planned and capitally furnished, Rosehouse, and good crops of Grapes and Peaches, just finishing off.

The most striking feature of the place, however, is the extremely elegant hexagon-shaped conservatory, with bays east and west, and a corridor with recesses for flowers. There are some fine specimen Falms, Seaforthia elegans and bortonica; several Tree Ferns, and a fernery with fountain and statuary. The little Ficus repens is used considerably as a drapery for the walls, which consist of a red sandstone. On the dome-shaped roof are Tacsonia exoniensis and Lapageria rosea. Trained on the outer wall, and on a pretty rustic arbour, I noticed the somewhat rare but beautiful old scarlet Trumpet Honeysuckle. The view from the terrace comprises a richly wooded landscape, stretching miles beyond Royal Windsor, T. W., Harrow.

THE "CHICK" HOUSE, OR INDIAN CONSERVATORY.

IN 1871 I went to the Royal Botanic Garden near Calcutta, I saw there that the then Curator, Mr. Scott, had been successful in growing Orchids and Ferns under a grass roof, such as is used by natives for growing the "Fan-vine"—a species of Piper (see Gardeners' Chronicle, p. 281, vol. xix.).

On returning to Lucknow I conceived the idea of trying a modification of what I saw in Calcutta, suited to a climate where a hot dry wind usually raged between March 15 and June 15, sometimes even later. In the Horticultural Garden I erected a house covered on all sides and top with "chicks" of reeds, called "Sentha," that is, the dry stems of the Saccharum moonja. A "chick" is a blind made either of these reeds or of strips of Bamboo, more or less thin, and fitted to doors and windows of Indian bungalows.

During the process of erecting this house I made some interesting experiments. I supported one of these blinds horizontally across some Bamboos in sunlight; then I took a sheet of paper and held it close to and parallel to the reeds. I found that the direct sunlight passed through and alternated with the shadows of the reeds. By moving the paper from the reeds I found that their shadows broadened. and eventually crossed each other, producing a light totally different from direct sunlight, and resembling at a certain distance a sort of moonlight. Thinking over the matter I came to the following conclusion: As the sun's disc at its distance from the earth is broader than the reeds, it follows that close to the reeds there will be alternate sunlight and dark shadows, but that at a certain distance the shadows and lights would mingle, and produce a subdued light, such as, for instance, would be produced under a tree by the mingling of the shadows of the leaves and the sun's rays that pass between them, same thing may be illustrated by making a pin-hole in a door and allowing the direct rays of the sun coming through it to be received on a sheet of paper behind the pin-hole. By moving the paper from the door it will be seen that the picture of the pin-hole enlarges in diameter as it recedes from the hole. The reason, of course, is that the disc of the sun being larger than the hole the rays proceeding from the edges of the disc cross each other at the hole, and diverge again ad infinitum. The difference of size between the sun's disc and the diameter of the reeds is, I take it, the reason of the beautiful subdued light which fills the interior of the "chick" house-sn suited to all plants which, in a state of Nature, are found in forests, and lighted only by the mingled lights and shadows produced by the leaves and branches of the forest trees and bushes. Before setting up my first "chick" house in the Lucknow Horticultural Garden many plants, including Ferns, could not be grown at all. By irrigating the soil under this house from a well, a moist ground and atmosphere were kept up in the driest season. The screen of "chicks" protected the plants, not only from the scorching hot wind outside in summer, but to a great extent from the frost in winter. In my annual report to Government of 1874 I find the following:—

"The most successful experiment of the past year has been the 'chick' house, or conservatory. It has answered for many things beyond my most sanguine expectations. Pteris longifolia and cretica, Asplenum esculentum and dentatum, Nephrolepis exaltata und tuberosa, Nephrodium molle and truncatum, Polypodium proliferum, lineatum, and irioides; Cheilanthes formosa, Adiantum Capillus-Veneris and caudatum—all Ferns—thrive with a luxuriance which cannot be sur-passed in their native habitats. The Acalypha tricolor, which delights in the moist, hot climate of Bombay, lit up the conservatory with its painted leaves. The superb Heliconia (now, I believe, called Musa coccinea), re-sembling a dwarf Plantain, flowered under this cover for the first time, and produced a head of brilliant scarlet The wiry Passiflora kermesina climbed up the posts with great luxuriance, and festooned itself between them, dropping here and there its graceful branches, studded with crimson starlike flowers. Selaginella lævigata, with its creeping stems and lacefronds; the Eucharis amazonica, with its waxy milk-white flowers; the large-leaved Scindapsus, exotic Palms, and Araucarias, with their varied and charming foliage-all these and many other delicate plants have tound a home in this conservatory, and promise to become a great acquisition to Lucknow. This house is 64 feet long, 40 feet wide, and 8 feet high."

A judge in the Indian Civil Service, who came out with me on my return from furlough in 1881, told me one day:—"Your 'chick' house made quite an era. We had a very nice one put up in our compound, and used to have chota hazri (early breakfast) in it every morning, surrounded by Ferns and other pretty things."

Of course such houses can be made more expensive and permanent with iron posts and framework. Later on, indeed, a very fine conservatory of this kind was erected in the Royal Botanic Garden at Calcutta. There, however, it was covered over with wire netting, and over this were tied leaves of a long kind of grass. Many other "chick "houses were erected in different places. I made a tour in South India last year. At Bangalore and Madras I saw them—although there, instead of "chicks," they use open mat-work, made of thin laths of Bamboo, with meshes about an inch or so wide.

These "chick" houses are invaluable for hot

Climates, where the frost in winter is insignificant. They temper the heat and dryness of the atmosphere to a remarkable extent. In the rains, the atmosphere inside is apt to become too damp, from want of ventilation. To counteract this, I made windows all round, closed with "chick" blinds during the hot and winter months, and opened up during the rains.

It is interesting to find that the "lath shadings" in use in France, and now being introduced into England, answer the same purpose, in mitigating the force of the direct sun-rays, and the subdued light produced under them is explainable by the same causes as stated before. The screen, of whatever material made, must be a certain distance from the plants, so that the sun-light may reach them after the shadows of the laths have crossed, in order to exclude direct rays. If the plants are placed immediately below the screen, they will, I have no douht, still be scorched where the direct rays touch them.

It would be interesting to know at what date the French began to use these lath shadings, in order to ascertain whether they took the hint from our "chick" houses. In Florence, in 1850, in one of the nursery gardens, I saw a structure something similar to our "chick" house, for summer use.

These houses can be modified in various ways. One I roofed with dried leaves of the common Phoenix Palm; another I roofed with "chicks," leaving the sides all round quite open. Being screened on the wind side by trees, the latter made an admirable place for germinating seeds of all asorts in pots and for raising young plants.

I believe that houses covered in this way might be used in England during the summer for screening plants from the sun and wind. In a country where everything is made by machinery something might be devised of a permanent nature—such as wire screens—like "chicks" and painted; or screens made of strips of zinc. Both these might, however, radiate too much heat towards the plants. The "chicks" or blinds that are now made in

England for windows, of thin strips of wood, would I think hardly answer, as they are too close, and would not stand wear and tear. In Florence I saw blinds of this kind made of a strong wiry reed, called "Giunco." Those would promise to be more durable, if the string which binds them were tanned or tarred. E. Bonavia, M.D., Etawah. [Such houses are, we believe, common in Italy—we have seen them in the Pisa Botanic Garden. Ed.]

THE PROPAGATOR.

DIONEA MUSCIPULA (VENUS' FLY-TRAP).—At first sight it would appear to be a difficult matter to multiply this plant to any extent with success, but such a view will be dispelled by the detailed methods of multiplication given below. The simplicity and comparative ease of propagation should lead the gardener to enlarge his stock of this singular and interesting plant. The three different methods of increasing the Diouxea are:—I, by division; 2, by leaf-cuttings; 3, from seeds.

I. By Division .- This operation is a simple one, and consists in dividing the plant through the centre of the stem. This should be done with a sharp knife and when the plants have been shaken out of the soil. Owing to its peculiar growth it requires some care in dividing the plant, which as a rule cannot be divided into more than two pieces. Each piece should be potted into a thumb-pot. It is well when pottingup to run a little dry sand around each piece. Each pot must be placed in a saucer, full of water, and on a shelf or platform. The soil best adapted to the nature of the plant is composed of one-half sphagnum moss, finely chopped up; one-fourth spongy peat, broken into pieces of hazel-nut size; and one-fourth river sand. To every bushel of this mixture must be added one 48-potful of charcoal, another of yellow loam, and another of ballast or broken potscharcoal and the ballast to be broken into small pieces, and the whole to be well mixed together.

2. From Leaves .- In making cuttings of the leaves of the Dionæa, none other than mature leaves should be selected. The leaves must be taken off close to the stem of the plant and afterwards dibbled an inch deep into well drained pans previously prepared. The pans should be filled with the soil mentioned above when it has been passed through a 1-inch sieve, they should also be watered before receiving the cuttings. After they have been placed upon the shelf or platform they require constant attention, and the gardener must be careful to see they are shaded from the rays of the sun, and to prevent them ever suffering from want of moisture, As soon as the leaves form plants they must be potted each into a thumb-pot, and can be placed with the other stock.

3. From Sceds .- The flowers of the plants intended for seed should be fertilised day by day. drained pans should be prepared to receive the seed; they should be filled with the soil previously mentioned, which should be sifted through a }-inch The soil should be firmly pressed into sieve. the pan, raising it an inch higher in the centre, and making it slope gradually towards the edge or rim. It is necessary to well water the soil before sowing the seeds, which need only to be sprinkled on the surface. The pans must now be placed on a shelf or platform, and special care must be taken to see that they do not become dry. When the seedlings become visible they must be potted separately into small thimble-pots. It is a good plan to place six, eight, or more of these pots into a 32-sized pan, filling up the interstices with chopped moss. These must be replaced upon the shelf, watered, and protected from the rays of the sun.

Culture.—Dionæa muscipula, or, as it is more commonly known, Venus' Fly-trap, has many characteristic peculiarities to which the cultivator has to pay special attention. It will be found to grow best under the following conditions. When potting them is should be into 60-pots, and a little dry sand should be placed around the plant itself. The pots should be placed in pans filled with water, and if both the pans and the pots are washed once a week it will not only prevent the water becoming stagnant, but will also make the plants more healthy. It is only necessary to do this in the growing season. The plants grow best upon a little raised platform, although a shelf will do, and when placed in a south-east aspect.

They like plenty of air, and if it is possible to have the ventilator raised about I inch night and day it will conduce to the health and vigour of the plant. The Dionæa can be exposed to the full sun, indeed it flourishes under its iofluence. With regard to watering the plants ought never be allowed to become dry, neither must they be watered overhead. As the winter approaches, and the plants begin to die down, the saucers in which they were placed should be taken away, as the plants then need only to be kept moist enough to sustain life in them. And, lastly, we would urge the gardener to be constantly on the watch to prevent the inroads and ravages of the wood-louse. This insect will eat its way into the centre of the plant, remain there unperceived until it has devoured the whole plant, and will if not checked destroy the whole stock. In order to pre-vent this disaster it is advisable to examine every plant, and where a leaf has died off to run in a little dry sand; also into the crown and hollow places at the bottom of each plant, at the same time pressing the soil firmly and closely round the plant so as to fill up any cavities.

CEPHALOTUS FOLLICULARIS: ITS PROPAGATION AND CULTURE: (1). Propagation. - The proper means of propagatiog this plant is by the root. the plant has been shaken out the thick roots should be cut off, and each of them again cut up into pieces an inch long. In potting them, which should be in small pots, each piece should be embedded so deeply that the top of the root is level with the surface of the soil, and a little sand should be placed around each piece of root. It is now only necessary to place them on a shelf or platform, and to see that they are never allowed to become dry. Soil composed as follows is best suited to the nature of the plant :- One part finely chopped sphagnum moss, two parts spongy peat, and one part river sand. To every bushel of this compound should be added a 48-sized potful each of yellow loam, ballast, and charcoal, the two latter to be broken up into pieces of hazel-nut size, and the whole to be thoroughly mixed together. With regard to

(2). Culture—the Cephalotus follicularis may be treated in a similar manner as Dionæa muscipula, respecting which we bave written above; but Messrs. Jas. Veitch & Son, of Chelsea, who have the most wonderful stock of this curious plant, plunge their plants in pans of white spar, and cover them with bell-glasses, keeping them always in a cold light house. The glasses are kept slightly tilted, and the plants show off their singular beauty well in their setting of white marble spar. T, O.



STRAWBERRIES FOR MARKET.

THE class for a single dish of Strawberries of the British Queen or any of its type, for which prizes will be offered at the next fruit show at South Kensington, will perhaps have interest for the few growers of old kinds, but it is certain that neither the Queen nor any of its class is held in high esteem by market growers, howsoever valuable it may be in the market. We learnt the other day from a grower that he grew a few Queens only, and was very well paid if he obtained a good crop once in four or five years, simply because the price is so much in excess of that obtained for average kinds. It would be idle to deny what is so well known in the Strawberry, and that is, that really high flavour and freebearing are seldom found in unison. The British Queen and its best allies will make good growth and seem to thrive admirably, yet rarely give a decent crop of good ripened fruit. The very fact that Nature seems seldom able to colour the points of the fruits as others are finished shows that some elements of robustness or productiveness are lacking, hence the majority of growers, though sadly, have been obliged to allow these high-flavoured kinds to fall into desuetude. To market growers any appeal to them to grow Queens is invariably met by the remark that they want to live and pay their rent, and that this sort will not help them to do it. For that reason the favoured Strawberries of the market are the richcoloured Paxtons and Presidents, and the proverbial acid but firm Napiers, though a few will grow the old Keens' Seedling, and for preserving the once famous Elton Pine. Even rarer, except in some old

gardens round London, is the Grove End Scarlet, so much favoured in still-rooms for preserving whole, as all Strawberries should be.

It is further interesting to note that in the corresponding South Kensington fruit show in July prizes are offered for the once famous old Hauthois. Naturally the introduction of these classes leads to the inference that the promoters of these prizes wish to resuscitate old high-flavoured kinds, but the result is exceedingly doubtful, for the simple reason that very few indeed care to cultivate them. After all, there are not a few who hold to the belief that really high-flavoured fruit of almost any kind sooner cloys the palate than do good juicy but less aromatic fruit, and that, therefore, the partaking of the latter is in the end more enjoyable. Probably many persons will demur to that proposition, but something is to be said on both sides. Where those who favour less flavour in their Strawberries have the advantage is in the immense productiveness of the kinds producing them-a fact that it is impossible to ignore in market culture, let amateur growers and connoisseurs say what they may. Still, seem odd that no cross-breeder of Strawberries has yet succeeded in raising for us a President, Paxton, Napier, and Héricart de Thury, that has the flavour to some extent of the Queen or of the Hantbois. Perhaps there has been too much anxiety to secure size and colour with productiveness only, hence the higher flavoured forms have been neglected. Recently very few new Strawberries have been put into commerce, and myriads of those introduced during the last thirty years have passed into oblivion. When we remember how many kinds have been raised, and yet how few of them are now popularly grown, it would seem as if there had either been too much treading in a beaten track by raisers or else that their novelties lacked merit.

If the recent paucity of new kinds implies that raisers have nearly tired of a self imposed task, perhaps they may find success in starting on a new tack and seeking how far it may be possible to engraft upon a Paxton the rich flavour of a Queen or upon a Napier that of the once famous Hautbois. Still it is certain that success will only be measured by constancy in productiveness, let flavour be ever so good. How little do we hear now of the famous old Pines with their peculiar flavour, and too often lack of stamina. Very few of the Pines are grown now, excepting in select gardens, and the Hauthois has nearly gone the way of the dodo. once fondly thought that in Dr. Hogg, W. F. Radcliffe, and some others, the Queen was reproduced in more robust and productive forms, but even these seem to exist only in nursery gardens, where happily some of the old kinds are still cared for and where they may be obtained. Still with these a time comes when no more are asked for, and then they pass away

A few years since and Sir Harry startled the world of Strawberry growers, but where is it now, and who would grow even the monstrous James Veitch except for its size? Empress Eugénie, Oscar, Eleanor, Carolina superha, Trollope's Victoria, Myatt's Alice, said to have been inferior in flavour to the Queen, where are these and many others, and how soon will the favourites of to-day follow them? X.

FLOWERS IN SEASON.

FROM Mr. Gumbleton we have received the following, some of which we hope to figure and deal with at greater length hereafter:—

HABROTHAMNUS FASCICULATUS, from the open wall. A shrub with dense purple pubescence, oblong acute stalked leaves, and terminal heads of orange-crimson flowers, each about 1 inch in length, with long vase-shaped obovate-oblong tubes with fine, short, erect, pointed lobes—a remarkably handsome shrub.

HABROTHAMNUS CORYMBIFLORUS. — A hardy free-flowering shrub, needing no protection (in South Ireland). The leaves are lanceolate, downy; the flowers in dense terminal heads, surrounded by ovate acute leaves, each about 1½ inch long, rosy-lilac, with long funnel-shaped tubes and a five-parted limb, the lobes of which are lanceolate, spreading, and alternately reflexed.

SPIRÆA ROTUNDIFOLIA ALBA.—A hardy shrub with stalked glabrous roundish leaves, with racemes

of flowers at the end of the shoots—each flower about ¼ inch across, with rounded white petals.

EURYBIA STELLULATA.—A perfectly hardy shrub, which at a first glance appears identical with Olearia Gunniana figured by us at p. 733, vol. xvii.

EURYBIA ILICIFOLIA.—A Composite Aster-like shrub with minute subsessile ovate toothed leaves, shining on the upper surface, clothed with cream-coloured down on the under surface. Flower-heads numerous, on long stalks, corymbose, each cylindrical with numerous appressed oblong scales, surrounding long narrow strap-shaped white ray-florets, flat or recurved at the tips. According to the Arboretum Segretanum this is the Eurybia erubescens of De Candolle.

GENISTA AMSANCTICA. — A hardy Broom-like shrub, the lower branches of which are tripinnately divided, all the divisions linear, spine pointed. The leaves formed on the young growths are subsessile oblong, entire, and like the young shoots covered with white silky hairs. The yellow leguminous flowers, like those of a Cytisus, are in terminal heads.

EMBOTHRUM COCCINEUM is well known for its handsome, oblong, entire, leathery, shiniog leaves, and terminal heads of very long slender brilliant crimson flowers. In Mr. Gumbleson's collection the tree attains a height of 35 feet, and is one of the most brilliant shrubs it is possible to conceive.

CEANOTHUS VELUTINUS.—A remarkably vigorous hardy shrub, suitable for walls, with bold ovate glabrous leaves, resembling those of a Melastomad, but with large terminal panieles of white flowers, like those of a Privet, but characteristically those of a Ceanothus.

LIBERTIA GRANDIFLORA is a herbaceous plant of the Iris family, with tufts of white flowers in whorls along the ends of the stem. Each flower is about 1 inch across, with small linear sepals and broad ovate white petals.

CRATÆGUS OXYACANTHA.—Under the varietal name of Gumperi bicolor (Flore des Serres, xvi., tab. 79), Mr. Gumbleton sends a very brilliant crimson single-flowered variety. The white stamens contrast well with the crimson petals, and have doubtless suggested the name.

GREVILLEA BUXIFOLIA.—We have received this from Mr. Smith, of Newry. It is a greenhouse shrub with sessile many-ranked small oblog acute leathery pilose leaves and terminal heads of stalked flowers, of a cream colour, but covered with white dowo, and with long projecting curved styles, ending in broad trowel-like stigmas. The perfume of the flowers is like that of hav.



MILDEW ON ROSES .- Every Rose grower, gentle or simple, whether he or she have cultivated their favourite flower in houses or in the open air, has been troubled with mildew. Sometimes more virulent in its attacks than at others, sometimes appearing early in the season and sometimes late, but whenever it does come sadly interfering with the appearance, and to a certain extent also with the well-being of the plants; and every one has asked the question, What is the cause of it and what the remedy? Some have said, What can you expect from such highly manured Roses? You do everything in your power to encourage it : you heap on manure, you water with liquid manure, you bring your plants into a highly excitable state, and you prepare them by their rich feeding for those ills just as the turtle and venison-fed alderman prepares for himself the vile "podagra." Others again say, Look at your situation; you are surrounded with trees-you have no free circulation of air; and in such a position what can you expect but mildew? Many-in fact the larger number of growers-attribute it to that most fruitful parent of ills human, bestial and vegetable-our cold and searching east winds, which chill the sap and encourage the growth of the fungus. We are aware that this is a stock reason for all such subjects, and as there is no reply, it often has to stand the brunt of what it is not quite certain is due to it; however, whatever causes may affect the Rose so as to produce mildew, that the cold easterly wind does so I have had convincing evidence.

In writing about Maréchal Niel the other day, I mentioned that I had two plants in large pots in my greenhouse; they are both of the same age, were planted in the same way, treated exactly alike, with

this exception, one is in a cold vinery (with no heat whatever) facing the south, the other in a glass house in which I bloom Pansies, facing the east. They have both forced their roots through the pots, and have rooted in the soil; both started well into growth. When the cold east wind set in, in April, the difference soon showed itself—the Rose in the house facing the east soon became affected with mildew, while that in the cool vinery facing south was in no way affected by it. I send you foliage of both, that you may see the difference. I dusted the most mildewed plant with sulphur; it to a certain exteot checked its progress, but it gave to all the flowers a greenish tinge, which detracted greatly from their beauty. The healthy plant has given me from sixty to seventy blooms, all of great beauty and of good size.

of great beauty and of good size.

The condition, then, which, in the case of Roses under glass, so manifestly affects them, is, I doubt not, the cause of mildew in a vast number of cases out-of-doors. The very sudden change of temperature to which they are exposed is as injurious to them as to ourselves, but we cannot provide against it out-of-doors—and, therefore, I suppose we must be content to try and check its progress when it does attack them. There is one comfort, that it rarely attacks the open-ground plants until later in the season, and it does not permanently injure these plants: a small crumb of comfort, but still better than none. Wild

THE MASDEVALLIAS.

THIS genus, the species of which are chiefly natives of the high ranges of the Cordilleras of South America,



Fig. 138.-MASDEVALLIA COCCINBA

was but poorly represented in our Orchid collections until about fifteen years ago, when Messrs, James Veitch & Son, of Chelsea, were lucky enough to obtain living specimens of their still favourite and distinct M. Veitchiana from Peru. It flowered in 1868, and, strange to say, from that one importation the whole of the plants of it now in the country were obtained. Since that time, however, new species have steadily continued to be imported, in spite of the many difficulties offered to the successful carriage of these small-growing bulbless plants from their cool and moist homes in the highlands, through the warm valleys, and across the seas to this country. M. Tovarensis (candida), with its snow-white flowers, was named in 1848, and is an early and very valuable addition, which retained its high price until the day that both Low and Sander got an importation over, when it fell from pounds to shillings. M. Harryana came - a host in itself, varying in its lovely shades from lilac to magenta, blood-red and maroon, no two plants in an impor-tation being exactly alike. With respect to adhering to the one specific name, "Harryana," to all these varieties, it gives a very marked proof of the consistence and clearsightedness of Professor Reichenbach, who steadily maintained the name in spite of the comments of many who considered their newly flowered specimens quite new and not varieties of that plant.

Then came from that indefatigable Orchid-hunter, Roezl, an account of the wooderful true M. chimzera, which he discovered in 1872, and which flowered, under cultivation, in 1875. Many a joke was passed at the time about the length of the tails, but we now know that we can beat the description. After M. nycterinia had been freely sold for it the true plant arrived, and, together with its congeners, formed what is called the "Chimzeroid section," and gave a new feature to our cold Orchidhouse. M. Lindeni, a light blue-mauve with white tube, and one of the earliest arrivals, is very distinct

from the M. Harryana which is so named; it is the earliest in spring to flower, and there is but one variety of the true plant.

This is the true species sent over by G. Wallis, in 1869. That figured from Glassevin in the Botanizad Magazine, t. 5990, having the yellow tube, tall habit, and other characteristics which seem to pronounce it a variety of M. Harryana. M. Davisii was a great acquisition, obtained from near Cuzco, in Peru, and flowered with its importers, Messrs. Veitch, in 1875. It gave the much needed bright golden-yellow flowers. M. Shuttleworthii (botanizal Magazine, t. 6372) with its compact habit and large rose and yellow blooms, is a favourite with all; and the numerous varieties of M. ignea, varying in tint from yellow to cherry-red, are most florilerous and showy. This species first flowered in 1871.

M. rosea is now established with us, and proves itself to be worthy to rank with the best, and so does Veitch's hybrid M. Chelsoni after years of probation, and all who saw the tiny plant at South Ken-sington, on Tuesday week, are delighted with the flowers of the last new arrival, M. racemosa Crossi (fig. 139) the dried flowers of which, horne from six to twelve on a spike, are of orange-scarlet to blood-red in colour, and quite distinct in shape. above mentioned comprise most of the very showy kinds, and when they are seen with half a hundred flowers on each, as we often now see them, they are indeed lovely. The Masdevallias, however, need not have gaudy colours to make them attractive, for the little M. Estradæ, the fly-bearing M. polystictum, the pretty M. amabilis, the innocent-looking M. ionocharis, the curious M. tridactylitis, with its flowers like beetles, the varieties of M. Houtteana, the waxlike M. Carderi (the bell-sbaped flower in our illustration (fig. 140, p. 741), and numerous others, by the profusion with which they produce their flowers, quite compensate for lack of size or brilliance of colour. The M. macrura, M. Schlimii, M. trochilus, M. radiosa, and many others give us large strange-looking flowers, striking and effective. In fact, so large has the genus now become, so beautiful are its members, and so easily are they managed that a separate house is devoted to them in most of our large collections, and well do they pay for the space given them,

We cannot close our note on these plants without asking, what has become of the true Masdevallia coccinea, which came originally from Pamplona (alt. 9500) and which flowered with Messrs. James Veitch & Son in 1868? Dr. Lindley described it:— "This most charming thing, with flowers as red as a soldier's coat," and our illustration (fig. 138), reproduced from the Gardeners' Chronicle, 1868, p. 75, represents it as having a kind of enlarged tube, something like that of M. Veitchiana. We often see a plant so named in collections, but it is always a variety of M. ignea. Perhaps the original species has been lost, and if so there is in it another prize to be obtained by our keen Orchid importers.

CULTURE.—Cool shade, moisture, and pure air are the chief essentials for these plants. While liking light they resent the bright sunshine being let in on them, and whereas heat stimulates some plants into growth, on these it has quite the opposite effect and only tends to stunt them and produce on them the unsightly black blotches one sometimes sees on the leaves. For the general collection in winter a lowest inght temperature of \$5° April., with a day temperature of \$5°, will be found to answer best; and in summer the lowest possible temperature that can be secured without artificial heat should be aimed at. This can best be secured by putting pleaty of water about on and under the stages, and by keeping up an evenly balanced top and bottom ventilation; indeed, althoughthe ventilators should be regulated according to the weather they should never be quite closed, summer or winter, day or night. The Chimeroid Masdevallias do best in baskets in sphagnum moss and fibry peat, and these and M. Tovarensis are known to do better in a shady part of the Cattleya-house in winter and that they flower better when so managed, but, nevertheless, if necessary, all may be grown together in a house of the temperature given.

With respect to the proper aspect for a Masdevallia-bouse, preference is given to a north or northeast frontage, but it appears that the matter is of minor importance, for many of the healthiest and best flowered plants in the country are to be seen in houses of quite the reverse aspect; as a rule, however, most Orchids last longer in bloom in summer when placed in a north or north-east house. Attending to watering is a very important matter with Masdevallias, and as a good rough rule it may be said that they should not be allowed to get dry once in the year, rain-water alone being used to keep them moist. An open woodwork stage placed over a water-tight



FIG. 139.—MASDEVALLIA RACEMOSA, VAR. CROSSI: FLOWERS ORANGE-SCARLET. FROM AN ORIGINAL DRAWING BY MR. LEHMANN. (SEE P. 736.)

one is best for the Masdevallias, as for all other Orchids.

POTTING.—Some begin to pot their Masdevallias early in December, but the greater part of the growers wait until the new year comes in, and begin the work early in January; certain it is that the plants root in winter, and the beginning of the new year is a good time to give them fresh stuff. The compost used

should be one-half living sphagnum moss and one-half fibry peat, broken in lumps, to which should be added a good sprinkling of charcoal, also in lumps. The pots being crocked more than one-half the way up the plants should be potted with the above-mentioned compost, so that no matter how much water may be given it would drain away freely, and not allow the plants to become sodden. Masdevallias, if merely potted on, have a babit of forming a close

tuft, and when allowed to do so the flowers often decrease in size, and the plants sometimes die off without warning; it is well, therefore, in growing on a specimen to keep it divided up, the pieces being potted in the same pot, as the size of the plant increases much more rapidly when so treated, and the blooms are larger and of a better colour.

APHIS ATTACK THE MASDEVALLIAS more particularly in spring and summer, but if they are continually looked after and sponged off with a little weak tobacco-water they may easily be kept under. Thrips, too, sometimes beset them, but very rarely when the plants are grown properly cool; these must be sponged off, and the plants dipped several days in succession in weak tobacco-water, and if that fails to check them, fumigating should be resorted to, but only as a last resource, for it is seldom that it can be accomplished without injury to the plants. For sugs, the better way is to make a pleasure of hunting them, and killing them late in the evening and early in the morning.

in the morning.

In the illustration at p. 741, commencing at the upper left hand corner, the first is Masdevallia Davisi, next to which, with the leaf at the back, is M. ignea; in the right hand corner. In the second row from the top, beginning at the left, is M. Harryana, below which is M. Shuttleworthii, with a front and side view of M. chimzera (spotted), to the right of which is M.† Tovatensis (white); at the lower left hand corner is M. Trochilus, and in the centre the bell-shaped M. Carderi.

∯loqists' ∯lowers.

CARNATIONS.—In Messrs. Veitch's nursery the Carnations are now coming into flower in one of the greenhouses-indeed a batch of the fine white variety, W. P. Milner, is in full flower, and very charming they look arranged in the greenhouse; quite independently of their great value as cut flowers this is the most robust in growth, and, all points considered, it is the finest of all the white border varieties. There were also a few plants in flower of The Queen. If this kind would grow as freely in the borders as the other, it would surpass it in point of quality; as it is grown under glass, the quality and refinement of the flowers are coosiderably in advance of any hitherto raised. Those who do not yet possess The Queen (Abercrombie) should at once add it to their stock; it will not fail to please. I have grown the two named above with The Bride (Hodges.) There are more Brides than one, so it is best to ask for Hodges', and see that you get it! The yellow varieties do not seem to grow so freely anywhere as we would like them to grow; and Mrs. George Hawtry, in flower here, is no exception to the rule; but it has clear yellow flowers, and as it may be safely classed with the perpetual flowering varieties, it is indispensable. There are so few yellow varieties. What has become of Ascot Yellow? It is a true perpetual, but, like the rest of the group, rather delicate; we grew it for years, but it was lost ultimately. I well remember Mr. John Standish bringing it up one gloomy day in November or December, rather more than ten years ago. It was an edged flower, but a better yellow than most of them. The Prince of Orange and seedlings from it cannot be classed as perpetuals, and they flower ten days or more later than the ordinary show Carnations and Picotees. Mrs. McLaren I was greatly pleased with; it was in much finer bloom than I had yet seen it. As it is the first perpetual floweriog crimson bizarre, it might have passed if it had not quite been up to the mark, but it is as good as many of the summer flowering type; it is of vigorous constitution, and ought to be the parent of many fine varieties that would supply us with show Carnations two months before the ordinary forms come in.

Flowering, as they do, at the very hottest period of the year, the florist's type of Caraations do not last very loog in flower, and it is undoubtedly a great advantage to get them in earlier in the year, when the weather is cooler. A Carnation in cold weather will remain on the plants for nearly a month; in July it is difficult to keep them in good condition for more than ten days. I also noticed a new variety named Thomas Wallis. It has very large, full flowers, of a reddish-scarlet colour, with a darker flake; flowering as it does with great freedom it is excellent for decorative purposes, or to use as cut flowers. Mrs. Keen is one of the darkest coloured varieties yet

raised. It was sent out by Messrs, Veitch last year, and is of the perpetual-flowering type, and a great acquisition to this section. A few pots of forcing Pinks arranged amongst the Carnations are very pretty, and in their way quite as beautifal. The old Anne Boleyn was amongst them, but it has had its day. It is now surpassed by such beautiful varieties as Lord Lyons, which is much brighter in colour, and has more refinement in flower. The white variety, Lady Blanche, is getting rather scarce in the trade, but it is yet the best white, while Mrs. Moore is the best laced variety. J. Douglas.

FORESTRY.

THE FORESTRY ENHIBITION.—During the last fortnight the Index Collection from India, consisting of 666 different specimens of timber trees, valuable either for the 'wood or other economic products, has arrived in Edinburgh. Numerous exhibits have also been received from Durma and other of the more distant countries. Messrs. Cranston & Elliott's handsome offer has been accepted, to fit up and furnish, at their own expense, the rooms at the entrance of the main gallery, which are to be used respectively as reception and reading rooms.

In addition to the foreign countries which have already intimated their intention of being represented, the Government of France have courteously allowed Sir Alex. Muir Mackenzie, Barti, and Col. Playlair, to make a selection of the native woods of Algeria, as displayed in the official collection at Algiers, for the purpose of being exhibited at Edinburgh. Professor Archer has also granted the loan of some of the beautiful Indian wood carvings, and other rare wood specimens from the Edinburgh Museum of Science and Art.

Some splendid fishing-rods, in the shape of bamboos, of great length, have arrived from Rangoon. The State of Guatemala has just intimated its intention to be represented. The newspapers from the Canadian colonies report the activity and interest which the Exhibition has awakened there, and the collections of Canadian forest products promise to be a prominent and interesting feature in the Exhibition.

The executive committee has determined to make the price of season tickets \(\frac{f_1}{i}, \text{ and to issue fornightly} \) tickets at varying rates, to suit temporary visitors. The evening illumination of the grounds and other popular attractions are receiving due attention, and with these and the electric light, which will be displayed in the grounds as well as in the galleries, the Exhibition is sure to be a favourite resort for visitors from other countries, to whom the evening promenade is a necessity of summer existence.

The Benbaceous Borden.

THE DOUBLE NARCISSUS POETICUS .- Mr. Peter Barr tells me that he has discovered the single form of the double N. poeticus, and that is N. p. var. patellaris, and he sends me specimen flowers of that variety. replied that on comparing them with my single 'recurvus," which he says is true to name, I could discover no difference. Ilis answer is, that when my eye has been educated like his by long training to distinguish Daffodils, I shall he able to see it. Well, perhaps I shall; but is it worth while to retain as distinct io our catalogues varieties which it takes thirty years' training to learn to distinguish? The moral I draw is, that bulb catalogues are very much overdone already with varieties of Daffodil, and that two-thirds of the names (I could not enumerate them in the season) might be cancelled without any loss to horticulture, and with great advantage to those who are deterred from attempting to make a selection by the bewildering length of the list of "yellow crowns" "primrose perianths." As for the particular variety, N. p. patellaris, it is not mentioned in Burbidge's monograph, or in Mr. Barr's or any other bulb catalogue I possess. C. IV. Dod, Edge Hall, June 2.

THE DOUBLING OF DAFFODILS.—I have followed with some interest the various letters on the conversion in some soils of single into double Daffodils, but as yet I am afraid I am one of the sceptics. I have here an orchard with any quantity of single Daffodils,

and they have certainly been there over twenty years, and amongst them one clump of N. biflorus. Divided by a public road there is a small garden, and next to it another orchard. In it there are from twenty to thirty clumps of double Daffodils, which I take to be the double Telamonius. Both the double and single are growing in the grass. I have never seen anything approaching a double among the single, or a single among the double Daffodils. I have also been on the look-out for possible seed among the double, and the other day found that one clump had from ten to twelve seed-pods, but on going carefully through the rest of the clumps could only find one other seed-pod. The pods appear to be full of good seed, which I shall certainly sow, and await the result. I notice that the pods of the double, although a stronger grower, are only half the size of the single. W. Rolles Fryer, Lytchett Minster, Poole.

Prchid Notes and Hleanings.

CHOICE ORCHIDS AT MESSRS. VEITCH'S. - At this season the numerous varieties of Odontoglossum crispum and O. Pescatorei make a fine display in most large collections; and these are supplemented by the yellow ground Odontoglossums. One very seldom sees such a spike of O. Pescatorei as there is here at present; it is a good variety, and on the curving branched spike I counted 100 flowers. Oncidium pulchellum is a small plant, with pinkywhite flowers, and a yellow lip prettily spotted. variety of Masdevallia Harryana named regalis is one of the finest varieties of this handsome species. Oncidium concolor, suspended here and there in the cool-house, has an excellent effect amongst the others; its clear yellow flowers are not matched by any other species of small growth. O. cucullatum is always welcome amongst the small-growing kinds, and at present is very pretty in the cool-house. Cattleya-house the gorgeous blooms of C. Mendelii, whether they are of the white or rosy sepalled varieties, attract most attention in May and June; while the visitor cannot but linger over many exquisite varieties of Lælia elegans-one I noticed with a lip of deepest crimson with rosy sepals and petals. Here is also a novelty, probably unique, named Cattleya It has rather narrow sepals and petals, iricolor. creamy-white; the lip has crimson markings, with a transverse yellow bar. The new Cypripedium ciliolare is also proving itself to be a remarkably fine species; a plant here was much finer than usual, although the ordinary forms are greatly admired. It is one of the finest of all the barbatum group. 3. D.

ODONTOGLOSSUM VENILLARIUM,—A fine specimen, bearing fifteen spikes and 150 good-sized flowers, is now in bloom at Ferrières. Mr. Bergman was the first to flower this grand Orchid in France in 1875.

CATTLEYA SANDERIANA is also now in bloom, for the first time in France, in the Ferrières collection.

LISSOCHILUS GIGANTEUS.—In the marshy spots down near the river shore are masses of that splendid Orchid, Lissochilus giganteus, a terrestrial species that shoots up often to the height of 6 feet from the ground, bearing such a head of red-mauve, goldencentred blossoms as scarcely any flower in the world can equal for beauty and delicacy of form. These Orchids, with their light green spear-like leaves, and their tall swaying flower-stalks, grow in groups of forty and fifty together, often reflected in the shallow pools of stagnant water round their bases, and filling up the foreground of the high purple-green forest with a blaze of tender peach-like colour. "The River Congo," by H. H. Johnston, F. Z. S.

VANILLA AROMATICA. — This climbing Orchid is met with in its wild state at Sante Comapan; it is occasionally met with on the Cocca trees, but it rarely fruits; first, it must raise itself beyond the shade which prevents the access of air and light—that is to say, that its flexible stems must climb to the top of the tree, from whence they fall in graceful garlands swaying to and fico, provided that the Indian, stimulated by the hope of gain, does not come, pruning-knife in hand, to clear away the dense foliage of the forest. The Vanilla also thrives on the dry and bare

rocks, which it covers in the fashion of our Ivy, and in which position it always bears numerous excellent fruits, the presence of which is revealed about the time they attain maturity, owing to the subtle per-fume which they give off. The fruit is a long pod, about 12-20 centimetres long; they must be gathered before they are quite ripe, otherwise the valves separate, so that their contents become soaked and spoilt by the rain. The sawdust-like seeds, now considered as the seat of the Vanilline, are scattered, and the aromatic perfume of the plant thus disappears. Mexican Vanilla is highly esteemed, and is cultivated in certain villages of the State of Vera Cruz. In the interest of the thrifty Indian it is to be wished that Vanilline may no longer be extracted from Fir tree sawdust, otherwise the Vapilla will lose in value daily. B. Rocal, in "Belgique Horticole."

Mr. SANDER'S ORCHID-HOUSES: VANDA TERES. -We say in French, "Il faut rendre à César ce qui appartient à César." I have read in the Gardeners' appartient à César." Chronicle and other horticultural papers of the new arrangement in Mr. Sander's houses for watering the paths, &c., and which is considered as a new idea; so it is, but it originated here, as may be seen by referring to the Orchidophile for January, 1884, which contains a plan and description of our cool Orchid-house. This house was occupied by the plants from March, 1882, and was then in full working order. In the beginning of the year 1883 I had the pleasure of a visit from Mr. Sander, who admired the system much, and said he would carry it out at St. Albans. Mr. Sander may have had the idea at the same time as we did, but still we were the first to put it into execution. I mention this merely to show that we poor French gardeners sometimes have ideas of our own. In your issue of May 10, p. 609, mention is made of "Vanda teres in excelsis" at Tring Park. I have heard of the good growth and fine flowers of these plants, but the treatment adopted by Mr. Hill was first practised at Ferrières. This our friend, Mr. Harry Veitch, can testify. We have grown Vanda teres in perfection for some fifteen years, and people have come from long distances to see it, including Mr. Veitch, Sir Nathaniel Rothschild, Mr. Hill, and many others. At that time this gem was seldom seen in flower in England or in France, while we gathered as many as 700 flowers [in a small corner of a house which contained some plants of it. Ernest Bergman, Ferrières-en-Brie, Seine-et-Marne.

FRUITS UNDER GLASS.

VINES,-During the past month the extremes of temperature and of drought, accompanied by other conditions in the weather of a variable character, have enforced unremitted watchfulness and anxiety. worst condition of all has been occasioned by the parched north-east air having to be admitted into the structures, where it readily displaced the genial moist atmosphere, and gave to the tender occupants a shock prejudicial to their satisfactory advancement. It is at times like these that ventilators with their apertures covered with perforated zinc are found to be of great When the early house is cleared of its fruit Vines should be subjected without delay to thorough syringings to eradicate red-spider and other depredators from the foliage, and the operation should be followed up until the leaves mature. The wood invariably ripens in early houses without recourse to special treatment; hot water can consequently be shut off, and the ventilators be left open. Some advocate a late development of lateral growth in order to sustain root-action, but our practice is to prevent it by disbudding, being persuaded that Vines break more satisfactorily the following season if not subjected to that excitement, at the same time we endeavour to preserve the old foliage from suffering in any way by keeping it clean and the borders well moistened. Very early forced Vines do not usually retain vigour for a lengthened time, and where renewal is contemplated it should be set about as soon as the crop is gathered. The present is an opportune time for permanently planting those that have been raised from eyes this season. We prefer inside borders for early work, and those formed of moderately coarse compost, firmly trodden, and well drained for all purposes. Before planting ascertain that the balls of soil are moist, plant them firmly, mulch with short manure, water with tepid water, and shade for a few days until the

foliage can withstand the sun. Muscat of Alexandria, Golden Hamburgh, and other kinds that are liable to have their berries scalded should when passing that stage, which lasts from two to three weeks during the stoning time, be submitted to a warm buoyant night temperature to prevent condensation of moisture on the berries. The back ventilators should be left a little open through the night, more air be admitted early, and the ventilation be conducted so as to obviate a rapid rise in the temperature.

PINES .- Judicious management of the shading is an important item in Pine culture, and where thin tiffany is made use of, and the houses are of the modern light type it should now, if the sky is clear, be brought into employment by 8 A.M., and not be removed until the sun's strength has waned : young foliage developes more healthfully and the fruits swell and colour more regularly when scorching sunshine is subdued instead of being allowed to reach them. The early Queens started at the beginning of the year will have comshould therefore be kept drier, and a circula-tion of air be promoted through the day and upheld in a limited degree during the night. Where Cayennes and other late varieties are fruited in compartments with Queens, they should have been plunged at one end, where they can be kept closer and damped between without materially putting to inconvenience the carrying out of the essential treatment necessary to perfect the Queens. If a greater number of fruits are ripening together than is required at one date, a portion may be retarded by being transferred to cooler positions where they can mature slowly. A batch of late fruiters, which should consist of Black Jamaica, Charlotte Rothschild, and Smooth Cayenne, should be induced, by keeping them rather dry at the roots, to show their fruits at the beginning dry at the roots, to show their fruits at the beginning of next month. These will prove of invaluable service in early winter, Young plants of the last two varieties should be shifted into their fruiting pots when in proper condition, and be incited, as should be all sections of successional plants, by early closing with brisk temperatures, and plenty of atmospheric moisture charged with ammonia, to make rapid, vigorous progress. Drawing need not be apprehended at this season if the plan of giving air early is adopted. Available suckers of the Smooth Cayenne and Chartes Rotherhild should at all times be utilized. They Available suckers of the Smooth Caspene and Challedte Rothschild should at all times be utilised. They associate well together, are invaluable for autumn and winter use, and, indeed, can be made to ripen fruits satisfactorily at almost any time of the year.

STRANBERRIES.—All except the latest varieties will have been consumed, and success with these depends in a great measure upon the structure in which they are grown; those having a southern aspect are not well adapted for ripening fruit in at this season, when the sun has long-continued force. The kind of house we use, with good results, is hip-roofed and faces the east, having stages some 2 feet 9 inches from the glass; the plants are consequently only indirectly exposed to the sun during the hottest part of the day, and the fruits do not scald, as there is a sufficient space between them and the glass for a clear passage of air. Preparations will now have to be made to raise the stock of plants for next season. Unhappily the present state of the weather is unfavourable to the growth of runners, and where ther has been no special treatment adopted to produce them there will probably be some difficulty found in securing strong early plants. For the purpose of yielding runners young plants should be plauced out in well prepared open quarters in August, in rows 3 feet apart. By mulching with short manure, denuding them of flower-spikes, and watering when necessary, a quantity of vigorous offsets will be more readily commanded than can be obtained by any other mode of culture. In layering 3-inch pots should be employed, which, baving been filled with sound loam, lightened with manure from spent Mushroom-beds, should be plunged in the mulching material and severally furnished with a young plant, which can be best kept in its place by a small peg. The method of layering at once in fruiting pots has been extolled, and it cannot be denied but that it is done with feasible reasons, yet after comparing the individual advantages we still cling to the old practice. Respecting varieties, it may be said that it is a mistake to have many, even where very large numbers of plants are forced. Of the many kinds we have tested the following have been selected as suiting our purpose well and they should be started in the order name

Plants and their Culture.

STOVE FLOWERING PLANTS FOR AUTUMN AND WINTER DECORATION, - Now that considerable relief is experienced from the usual overcrawded state of the houses during the spring months by the removal of the bedding and other tolerably hardy plants to the open air no delay should be allowed in looking after the old stools and securing an early hatch of cuttings of the most useful plants for the above purposes. Very early starting of such material is not to be recommended, even if more room than usual is at disposal, but when pressed for space, as is the case with most gardeners, it is far better delayed till there is sufficient room to give each and all of such plants every opportunity of making a sturdy growth. A good stock of short-jointed cuttings will in a brief space of time be available for insertion. If a brisk bottom-heat is at command to facilitate rapid root action so much the better, but as soon as each kind is well rooted see that they are inured to the ordinary atmosphere of the house. If struck in cutting pots, shake out and pot singly without delay. The mistake is oftentimes made of allowing young stock to remain crowded together in the pots in which they were inserted as cuttings. Rather than allow this it would be better to defer propagation for a short space of time. Voung stock that has been starved and stunted in this way rarely make a vigorous clean growth afterwards. We prefer, in many instances, to insert the cuttings singly in thumb-pots when there is room at disposal in the propagating pit. This is by far the better mode of procedure. A dwarfer plant is thus obtained, and is also more quickly worked off to make room for another lot. A properly constructed propagating pit is an essential aid in the increase of all the necessary stock of tender exotics. There is scarcely any time of the year when it is not capable of being turned to a good account in the production of the requisite material to meet the demands of the present day. It is also a far better plan to be at all times working up a successional stock of young plants to take the place of those that have become stunted and unhealthy. If this system were adopted, instead of retaining plants from year to year when they have gone far past their most useful days, our houses would oftentimes look far more effective. The days of large overgrown plants, except for special exhibition purposes, are fast going by. One plant is oftentimes seen occupying the space of three or four that would give a better return. To keep a plant for the sake of keeping it when it is really past its best should not be tolerated by any means. The labour, too, that is frequently expended on the cleansing of stove plants from mealy-bug and other filth might be considerably lessened by throwing away those that are the worst affected, and thus endeavour, by closer attention to the remaining stock, to completely exterminate the pest we have more specially named. Then by propagation when free from this pest of our hothouses the refurnishing can he speedily effected.

To revert, however, to the propagating pit, we might just state that we find ours simply invaluable for rapid reproduction. At one end of a lean-to stove an extra wall, one brick thick, has been carried to the necessary height. This space has within it two 4-inch hot-water pipes that furnish plenty of hottom-heat. Bearers over the pipes carry some slates on which is laid some cocoa-fibre refuse as a plunging medium. Some plants we strike in this material and then pot them up when well rooted, but we generally prefer to insert the cuttings in pots and We have already worked off then plunge them. some young stock of Eranthemum pulchellum and E. Andersoni, that were struck in thumbs and are just shifted into 4-inch pots, in which they will stand for some little time. Later on both of these species will be kept somewhat cool and airy, in order to develope as compact a growth as possible. Poinsettias that are now started into growth, although not pruned back, are furnishing nice young shoots for propagation. As each succeeding one is taken off another will push forth below the former, and continue to give us several shoots in succession. Euphorbia Jacquiniæflora affords us cuttings in a similar way, the earliest of these are struck, but later hatches can still be inserted. Centropogon Lucianus should not be over-looked; plants of this useful winter flowering subject when of one year's growth will, however, make the

more robust shoots, but some young ones should always be allowed for. Flumbago rosea and P. coccinea should receive similar treatment and vigorous growths freely encouraged. Some cuttings of the Scutellarias should be got in soon by those who grow them; they are fine showy objects when in flower, but not always the most floriserous, at least such has been our experience. Justicia carnea and J. speciosa will also be found very useful for large collections, old plants will generally furnish several flower-heads during the season, but if cut hard back at this period of the year, and repotted when starting into growth, a hetter return may be anticipated in the autumn. Do not overlook the useful and floriferous Thyrsacauthus rutilans, of which some few cuttings should be secured and grown on without pinching. Plants that were struck last year will this season make useful stuff either for intermixing with the taller plants, or for training up the roof of the stove; in this latter manner the pendent racemes of brilliant coloured flowers would be displayed to excellent advantage. flowers would be displayed to excellent advantage. Where seedlings of Begonia insignis and B. Knowsleyana were raised early in the year, such will now be making nice young plants, that with attention will become well furnished by the autumn. Cuttings of either species should be got in as soon as possible in the event of no seedlings having been raised. B. Moonlight is another good winter-flowering variety, with blossoms of a yellowish-white, which are very freely produced. Seedlings of Aphelandra auranwith blossoms of a yellowish-white, which are very freely produced. Seedlings of Aphelandra auran-tiaca Roczlii, which are always preferable to cut-tings, should be kept in a light position in order to preserve as dwarfa plant as possible. If raised early, they will now be fit to shift into 4-inch pots, which will flower them very well. Of bulbous plants, the uncommon yet heautiful Urccolina aurea (pendula) should be encouraged to perfect a good growth. The Gesneras should now be looked after also. If they have been kept dry up to the present time, a good watering should now be given them with an increased temperature. This will soon ioduce them to show the property of the signs of activity, then they can be shaken out, and rearranged in smaller pots with care. The same operation can also be done before growth commences. They thrive well in a light soil with a preponderance of leaf-mould, and when well started into growth a pit or frame with a slight bottom-heat will suit them to the letter. James Hudson, Gunnersbury House Gardens, Acton, W.

The Orchard House.

We are now applying a surface dressing to the whole of the pol trees; it is placed on thinly the first time. It was some trouble to get the malt or kilndust we have usually had, we have therefore used some stable manure from a yard where the horses are littered with peat; this, in the proportion of half loam and half manure, makes a good dressing for many fruit trees. It is also being used for Vines and Fig trees in pots; these have been done about ten days, and the dressing is already quite permeated with roots. When this is the case, another thin layer of the dressing should be applied. We do it at intervals of about two weeks, and the continued supplies of should two weeks, and the continued supplies of should two weeks, and the continued supplies of stimulating food to the trees give vigour almost beyond belief. I never use any liquid manure, hut trust entirely to these dressings to give the trees all they require. Success is not problematical, but assured, if the trees are kept quite clean and well supplied with water. It is the inattention to watering that causes the fruit to drop during the period of stoning, and prevents what remains from swelling to anything like a fair size. Figs swifer from attacks of red-spider, as well as the Peaches and Nectaries; thorough syrtingings are therefore necessary night and morning to destroy it. As soon as the fruit begins to swell after stoning it is much benefited by a moist atmosphere and plenty of heat, shutting up the ventilators in the afternoon, so that the temperature rises to 85° or 90° by sun-heat. During this critical period the atmosphere ought to be at the saturation point, and in hot weather the trees may be watered twice daily at the roots—I allude, of course, to pot trees. If they are planted out I would give a thorough soaking of water to the roots, sufficient to soak the border to the bottom, at the first swelling of the fruit. It swells very rapidly after the stoning, and for this reason daily attention is necessary to hinsh it off well. The inexperi

APPOINTMENTS FOR THE ENSUING WEEK

TUESDAY, June 10

ROYAL Horicultural Society: Meeting of Fruit and Floral Committee, at 1: AM.; Scalerific Committee, at 1: AM.; Scalerific Committee, at 1: AM.; Scalerific Committee, at 1: AM.; Scaler of Imported and Established Orchids, THURSDAY, June 17, Sale of Imported Orchids, at Stevens' Rooms. June 17, Sale of Imported Orchids, at Protheroe & Morris' Rooms. Sale of Imported Orchids, at Protheroe & Morris' Rooms.

N view of the failure in many places of the LARCH, the necessity of looking for a substitute becomes imperative. Nor can we doubt that such a substitute may be found. Among the most promising are the Corsican Pine, Pinus Laricio, and its many varieties; the Nordmann Fir, Abies Nordmanniana: Cupressus nutkaensis, Sequoia sempervirens, the Douglas Fir, Abies Douglasii; Abies grandis, &c. No doubt also some of the Japanese species, such as Abies brachyphylla, Veitchii, sachalinensis, may ultimately be found available, but at present they are either too expensive or too little is known as to their rate of growth or the quality of their timber, and the same may be said of many of the Californian and Oregon trees, like Abies grandis or Cupressus Lawsoniana. For the present we must be content to grow them and many others purely as ornamental trees. We cannot be too thankful to such men as Mr. PARKER HAMOND and others who, by their enlightened experiments, are doing much to solve the problem, and prove by demonstration the suitability to our climate or otherwise of the numerous species that have been introduced of late years. From this point of view the establishment of arboreta, wherein the trees are accurately determined and named, becomes of much importance. The arboretum at Kew becomes yearly of more importance, and we can but hope that one result of the forthcoming Forestry Exhibition in Edinburgh may be the establishment on a proper footing of the arboretum attached to the Botanic Garden of that city. Not only should the nomenclature be verified and carefully kept by means of suitable labels, revised by competent authority at regular intervals, but observations on the preference of particular trees for particular kinds of soil, the rate of growth, the degree of hardiness, the quality, strength, and specific gravity of the wood noted as opportunity offers.

Much attention should also be given to the discrimination of particular varieties. It is well known, for instance, that some varieties of Scotch Pine (Pinus sylvestris) are much preferable to others. The botanical distinctions may not be easy to define, but no one can doubt their intrinsic importance, either from the point of view of pure science, or from that of practical industry. The variations in question have doubtless more or less direct connection with diversities of soil, altitude, and climate generally. The numerons varieties of the Corsican Pine illustrate this. Though they run one into the other in most perplexing fashion, yet it is not difficult to sort them out into geographical varieties, according to the countries in which they grow, and the altitude at which they are met with. We have already described and figured many of these, such as the Black Austrian, so hardy in seaside districts, the true Laricio, and the true Karaman Pine, which, we believe, is that grown at Kew under the name of Pinus neglecta. What is often called Pinus caramanica is nothing but ordinary Laricio from which the true Karamanian Pine differs. We have so lately described and figured this, that we should not again advert to it were it not for an obliging letter we have received from M. HENRY VILMORIN, accompanied by specimens, which we are pleased to see confirm the view we took. M. VILMORIN tells us that his grandfather had the tree in cultivation at Verrieres more than fifty years ago, but that it was removed. Cones of it will be seen in the collection to be exhibited by Messrs. VILMORIN at the Forestry Exhibition, and seedlings have been raised from it, some of which have produced cones, and from one of them (probably) specimens have been sent to us which agree with what we consider the true Karaman Pine as figured at p. 481. We quote from the Pinetum Britannicum the following remarks as to the varieties of P. Laricio, adding that the leaf-structure (a point not attended to when that account was written) is the same in all the varieties, and that there are differences in the colour of the young shoots and of the buds which we may refer at length on another occasion.

"The differences by which characteristic specimens of these forms may be distinguished from each other, are the following. Taking the normal P. Laricio as the type of the whole of the Laricio forms, then P., pyrenaica may be said to be an offshoot in one direction, having the leaves longer and more slender, and somewhat falling back, while P. austriaca (including Pallasiana) is an offshoot in another, having the leaves shorter and more rigid, more numerous, and of a darker green, and standing bristling straight out. The cone of Laricio is generally smaller and less tumid than that of austriaca, while that of Pallasiana is larger, longer, straighter, and more like the Plinaster than is that of austriaca. The prickle on the scales of the cone is stronger and more persistent in Pallasiana and austriaca than in the Corsican Laricio and pyrenaica.



FIG. 140.-PINUS (LARICIO) HELDREICHIL.

"The habit and form of the trees is another character by which to distinguish them. The branches as well as the leaves of P. austriaca are much more numerous and upright-growing, so that it makes a narrower and closer tree than Laricio proper. Pallasiana, again, is a still broader growing tree, the branches springing from near the ground, and spreading out so as to give it the appearance of a broad, compact pyramid. Pyrenaica, on the other hand, when growing alone is more like Laricio, although in its native mountains it is bare until near the top, leaving only a tufted summit somewhat in the fashion of P. pinca—a character probably due to their having been crowded in their youth.

their having been crowded in their youth.

'The variety which grows in Calabria, Pinus calabrica, is more cylindrically conic, its branches more upright and, as it were, adpressed to the stem, forming a narrower and more compact head, looking in general more like a Cembra. In plantations of this variety there are usually a great number of trees with two or more leaders. This may be due to the more upright direction of the branches above alluded to. This variety was named calabrica by TENORE, and stricts by CARRIERE and other horticulturists. M. CARRIERE and other horticulturists. M. CAB be a distinct species. 'This form, perhaps, indeed, this species,' says he, 'is very constant in its reproduction, and among the individuals of which I have spoken none has wandered from the characters above mentioned.' But we find Professor Scholuw observing no such difference; he says, 'The variety called calabrica by TENORE, of which I obtained specimens from the BOHAMEL'S figure, and with the great tree of this species (Larico) in the Garden of Plants at Paris.' Pinus Heldreichii and Pinus Fenole, ANTONE and KOTSCHW, are synonyms of a variety of calabrica. It is said that it will, in a given time, become one-third thicker than the ordinary variety, and as high. Pinus Laricio.'

We take this opportunity of figuring a cone of P. Laricio var. Heldreichii, received from

Dr. CHRIST, of Basle, through the mediation of Mr. NICHOLSON (fig. 140). It will be seen that the cone hardly differs from that of Laricio proper, though Dr. CHRIST, in his original description, says that the umbo or point of the scale in Laricio is shining, while in Heldreichii it is dull—"opacus."

In a letter before us Dr. CHRIST speaks of this as a very remarkable mountainons and alpine variety of Laricio, of dwarf proportions, like Pinus Pumilio, and native of the high mountains of Greece, Olympus, and Thessaly. There is a tree so named in the Kew arboretum, but as we are not quite sure whether it really represents the variety in question, we defer making any further comment upon it.

— PERSONAL ADORNMENT.—On the occasion of the evening jake of the Royal Botanic Society, on July 2, an exhibition of floral decorations will be held as usual; an interesting class for the ladies should be that in which special prizes are offered for arrangements of flowers, leaves, &c., for personal adornment, such as wreaths, chaplets, and the like, and also for use in dress trimming and ornament. The conditions provide that these may be prepared ready for attachment to the dress, or the dress may be exhibited as ornamented.

— THE LATE MR. ATKINS' COLLECTION of herbaceous and alpine plants has been secured by Messrs. PAUL & Son, the Old Nurseries, Cheshunt, to prevent its dispersion. It is a most interesting collection, particularly rich in the forms of hardy Cyclamens, Saxifrages, &c.

— ROVAL HORTICULTURAL SOCIETY. — We understand that at the meeting on Tuesday next Messrs, Kelway & Son, of Langport, propose to make a large display of double and single Pyrethnums and Pæonies—an exhibition which they intend to keep on view for a fortnight.

— OUR NATIVE SHRUBS AND TREES forms the subject of a series of ten weekly lectures which were commenced on Wednesday, May 28, at the Crystal Palace, the lecturer being Mr. DAVID HOUSTON, F.L.S., of the Birkbeck Institution.

— A Manual of the British DiscomyCETES, with descriptions of all the species of fingil
hitherto found in Britain, iocluded in the family, and
illustrations of the genera, is in preparation by Mr.
WILLIAM PHILLIPS, F.L.S., of Shrewsbury, and
will shortly be published. Mr. PHILLIPS has, we
understand, had the advantage during the publication
of his Evicultaci Britannici of examining British
species collected in a fresh stage, of consulting the
splendid herharium of the Rev. M. J. Berkeley,
and also those of the late Mr. F. CURREY and other
collectors, and of studying all recently published
excitectif published by Continental mycologists. In
the execution of his task he has been promised the
valuable assistance of Dr. M. C. COOKE, who has
kindly placed at his disposal the notes relating to this
family collected for a revised edition of the "Handbook," and he confidently anticipates the co operation
of all English mycologists.

— KEW GARDENS AND THE HEALTH EXHIBITION.—On Whit-Monday, the Royal Gardens at Kew were visited by \$4,000 persons, or 22,600 more than the corresponding Bank Holiday last year. The number of visitors to the International Health Exhibition was \$4,679.

— NEW HARDY RHODODENDRONS AT MAN-CHESTER.—A box of trusses of new hardy Rhododendrons, raised by Mr. ISAAC DAVIES, nurseryman, of Ormskirk, attracted much attention at the Whitsun show at Manchester, and they served as an intimation that the raising of new varieties is not confined wholly to the South of England. The following varieties are fine in shape, handsome, and in some cases novel in appearance, and produced in fine trusses:—General Graham, Mons. Thiers, Respleodent, Oliver Cromwell, and Flower of May. One thing appears to be wanting at this particular show—namely, a competent tribunal to act in the



Fig. 141.—GROUP OF MASDEVALLIAS. (SEE P. 736.)

capacity of a floral committee, and award certificates to plants of descriving merit. There were present many subjects, new and novel—as, for instance, Mr. TURNER'S new perpetual Carnations—that such a body might have appropriately recognised in the way suggested. Manchester is such a plant growing district, and it is said one of the best markets for novelties, that there would be something appropriate in making the Whitsun show the occasion of an exhibition of what is distinctively new; and there are subjects raised in the midland districts that cannot be sent to London in good condition, but might be shown at Manchester.

- MULCHING HERBACEOUS PLANTS. - The advantages of mulching the surface of the ground occupied by many kinds of vegetable crops is generally admitted, and in dry summers in such parts of the kingdom as are subject to a light rainfall the good results of the practice become doubly apparent, especially where water is given, which when combined with mulching has not only a much greater effect on growth, but there is a great saving of labour, as the water applied under such conditions lasts much longer through the check which the mulching materials offer to evaporation. But it is not alone in the kitchen garden that the advantages of mulching are seen, but equally so with herbaceous plants, although in the case of the latter the operation is not by any means so common as it deserves to be. An inclination to have the surface trim and smoothly raked often prevails, to the detriment of the plants, an objection being raised to the presence of anything in the shape of loose material on the surface, which is supposed to be inseparable from an untidy appearance; but such is not the case if only a mulching of the right sort is used. On beds and borders filled with herbaceous plants manure in any form does not look well; but if leaf-mould sufficiently decomposed - say such as results from leaves which have lain together for a year and a half, so as to have become sufficiently reduced -is applied, it not only answers the purpose greatly reducing the amount of evaporation from the soil, and keeping the roots of the plants near the surface in active condition, but looks nice, and keeps down weeds as well. Where spent Hops can be had, and which before use are allowed to lie together for a few months, so as to get dark-coloured, they make excellent mulching material for berbaceous borders.

THE BOTANICAL GARDENS, MANCHESTER. -Gradually, under the intelligent supervision of Mr. BRUCE FINDLAY, these gardens show signs of very satisfactory improvement. Alterations are being made, new houses erected, and a large extent of garden added, while some rockwork which appears to have been a very successful venture adds another feature of interest to these charming gardens. Though the Whitsun season this year fell between the time for the appearing of the spring and summer flowers-just when one had declined and the other had not commenced to unfold their charms-there is yet much about the grounds of a very interesting character, and that despite the drought. The Thorns are in the full glow of their beauty, and the dry weather has been favourable to the prolongation of their bloom. Various species of Cratægus are in flower; so are Chestnuts, Laburnums, Lilacs, &c. The houses are very gay, and in excellent order. In one of the new plant structures are some very fine specimens in pots of Schizanthus pinnatus, such examples as one rarely sees, large in size, and finely bloomed. Despite the drought, the turf was fresh and green, and in such a condition to delight the eyes of the visitors to the great Whitsun show.

— A New Recreation Ground for East London.—Owing to the exertions of the Metropolitan Public Garden, Boulevard, and Playground Association, who have provided seats and an extra caretaker, the extensive churchyard surrounding St. Dunstan's, Stepney, about 5 or 6 acres in extent, bas been thrown open to the public for their use and enjoyment. This quiet resting-place is likely to be highly appreciated during the heat of the summer and autumn months—a pleasant change indeed for many from the hot and dusty thoroughfare, and, looking at the conduct of those who have already availed themselves of the privilege, one not at all likely to be abused.

-- THE FLOWER SERMON. On Tuesday evening the church of St. Katherine Cree, Leadenball

Street, was crowded to hear the Rector, the Rev. W. M. WHITTEMORE, D.D., preach his thirty-second flower sermon. He took for his text the 3d verse, 2d chapter, of the Song of Solomon—"The Apple tree amongst the trees of the wood." He said that the Apple tree, beautiful as it was, and rich and fragrant as was its blossom, was after all only a common tree. Yet it belonged to that grand order of which the Rose was the type and the queen. He drew from this fact the lesson that the position of his hearers might be a low one, and yet they might belong to the highest order. The Apple blossom did not fall off, but the different parts were used to form the Apple; and so a child's present life was moulding The Apple blossom was an its future character. arrested branch which was sacrificed, so that there might be fruit; and he drew the lesson that the blossom was a striking illustration of the great law of self-sacrifice which ran through all creation. Earthly luxury was unfavourable to spiritual blossom. If a gardener wanted a fruit tree to be barren, he plant it in very rich soil. A gardener preferred Apple trees which bore their fruit early, for whatever the trees might suffer from the colds of winter, they would still suffer further from the ravages of insects. It was better to be religious while young than for children to wait until they were older. There were probably three thousand varieties of the Apple, and yet they all had the same essential character. In these days of controversy they might learn the lesson from that fact that the Church of Christ had its variations and differences, but with all those differences there might be one law, one faith, one baptism. -Each person present brought a bouquet, and the Rector announced that all the bouquets which were lest would be sent to the Seaman's Orphanage or to the dark homes in the vicinity of the London docks.

- PRIMULA SIKKIMENSIS. - In a cool moist position at the base of the old rockery at Kew is a clump of this beautiful Himalayan Cowslip. While it reminds one very forcibly of our native Cowslip, the primrose-yellow flowers are much larger and more decidedly pendulous. The clump under notice is in full flowering order and very graceful, and were it not for the naturally elongated flower-scapes giving it a rather straggling appearance, this species would be more highly prized than it is. The plants were raised from seeds last year collected in the Sikkim Himalayas at an elevation of 11,000 feet, and sent to Kew through the medium of the Calcutta Botanic Gardens. It is of great advantage to rear young plants from seed frequently, because, although the plant is hardy in this country under favourable conditions it is apt to deteriorate or even dies during our mild and damp winters. When the leaves die down in autumn the crown is more or less entirely covered by the soil, so that due care is necessary to guard against digging them down, or pulling them out by

- GOOSEBERRIES,-Whilst some market growers are lamenting the general destruction of their Gooseberry crop others, more fortunate, are hoping to reap from their crops a little recompense for the loss of other fruit crops. Naturally it is asked, Why have some such good crops of Gooseberries and others such poor ones? Too many would perhaps reply that the frost has struck with more force in some gardens than in others, but such a reason would be neither satisfactory nor correct. The chief, if not only, cause of the difference in crops is found in the different modes of pruning, for whilst those who have hardor prining, for whist mose who have hard-pruded find their produce almost nil, those who have been sparing of the knile have an abundance. Really hard thinning of the bushes exposes the embryo fruits to the full severity of the frost, whilst dense bushes give ample leafage and plenty of shelter. Something may be due to sorts, but not much, as there is no great difference in the best market kinds, but the famous Lancashire Lad, without doubt, is not only one of the hardiest of kinds, but it is also one of the most productive, and possesses that admirable habit whereby the fruit is least exposed to the weather. Sparsely pruned bushes, no doubt, do not give such fine fruit as do those more hardly pruned, but then these latter far more than compensate in bulk, and as the larger portion of Gooseberries are gathered for market in a green state, mere size is not a very desirable feature. Again, the hard thinning which heavily laden bushes receive thus early, not only relieves them of their burthen early, but enables the fruit left to ripen to attain to a good size. Clearly the advantages of light pruning of Gooseberry bushes are many.

- Plagioliston Horsmanni.—This new bulb, of which a figure is given in the Gardeners' Chronicle, vol. xx., o.s., fig. 16, may now be seen flowering in the Begonia-house at Kew. Since having a little more time to establish itself in this country, its true character becomes more evident, The present specimen is altogether stronger than that figured, and producing more than three times as many flowers. From its nearest ally, the Eucrosia, it differs botanically in the much longer tube of the perianth and the fan-shaped arrangement of the segments, while from a horticultural point of view the difference is more evident, if less valuable. Its pure white flowers would furnish a beautiful contrast, and at the same time constitute it a fitting companion to the Eucrosia, with bright scarlet flowers marked on the exterior of the segments with a green It is rather remarkable and much to be regretted, that the latter should be so much neglected in gardens as it is.

- ROYAL NATIONAL TULIP SOCIETY. - The annual exhibition of this Society took place at the Botanical Gardens, Maochester, on Saturday, May 31, a report of which appears elsewhere. Great regret was expressed by the growers and exhibitors of the Tulip at the enforced absence, through illness, of the President of the Society, Mr. SAMUEL BARLOW, J.P.; and at the dinner which always follows after the prizes are awarded the following resolution, on the motion of Mr. J. THURSTON, of Wolverhampton, seconded by Mr. B. SIMONITE, was unanimously passed:—"That the members of the Royal National Tulip Society desire to express their deepest regret that the impaired health of their esteemed friend, SAMUEL BARLOW, Esq., compels him to retire from the position of Hon. Treasurer and Secretary of the Society, which offices he has, for such a lengthened period, filled with so much satisfaction: and they sincerely hone that he will soon be restored to his usual health, and be enabled to officiate in his old capacity of President for many years to come. The members of the Society specially and unanimously desire to offer, with their best wishes, their most cordial thanks to him for his services as Hon, Treasurer and Secretary, which he has so freely given to the Royal National Tulip Society." It was further resolved that this resolution be sent to Mr. BARLOW.

- MEDINILLA AMABILIS .- In point of attractiveness and general horticultural interest this plant, which was introduced about ten years ago (see Gardeners' Chronicle, vol. i., p. 371,) may looked upon as of secondary importance to the older and better known M. magnifica. It is, nevertheless, of the same bold and robust habit of growth, with ample foliage (the venation of which is rather abnormal amongst Melastomads) and compound terminal, conspicuous cymes of flowers. The chief point of distinction lies in the small caducous floral bracts of this species, compared with those showy organs that play so important a part in M. magnifica. The individual flowers, however, are larger and paler, rosypink, enlivened with the stamens, half the number of which have three colours-namely, violet, crimson, and yellow. There are flowering specimens of both species in the Victoria-house at Kew.

- VARIETIES OF ANTHURIUM ANDREANUM. -From the first appearance of the flowers of this fine Aroid it was evident that, as in the case of A. Scherzerianum, there would prove to be many forms of the plant differing, not alone in the size of the individual flowers, but also to some extent in their form and intensity of colour. In some the spathe, in place of lying flat so as to show the surface fully, has an ngly twist at the extremity; in size there is great difference in the flowers of individual plants, some being double or treble as large as others, and, as a matter of course, so much the more prized. But beyond this there is as much difference in the form of growth in the plants, some preserving a close, compact habit, the crowns as they are formed keeping close to the surface of the soil, whilst others assume a somewhat scandent character, the additional crowns as they appear mounting up considerably above the pot in which they are grown, with an apparent disposition to keep on further in this direc-tion as they increase in size. As some guidance to

those who may happen to be purchasers of this Anthurium, we may state that in a number of the climbing habited forms of the plant we have seen they were all comparatively worthless, the flowers in each case being poor from the first, and getting smaller as the succeeding crowns got higher above the soil. As will be easily understood, the comparatively few exceptionally large-flowered forms of the plant that have appeared are highly prized by cultivators of stove plants.

WEATHER ASPECTS. - The weather-wise comfort us with the assurance that we shall have no rain till the turn of the days, by which they mean midsummer, some few weeks hence. Perhaps we ought to be thankful for so much cold comfort, as some others, equally weather-wise, declare that we shall get no rain till the autumn. Really, having regard to the fact that the five months of the year now gone have been probably the driest five months with which a year has opened for a generation or more, there seems no reason why that five months might not be lengthened to ten months, or even for the entire year. History is said to repeat itself, and so does Nature, but such excessive repetition becomes monotonous, and a really dry year may be a hit of a novelty, if not a very desirable one; indeed we shall too soon hear of suffering from want of water, and abundant scoldings for our want of forethought in not storing that stern necessity when it can be had. Still it must be pleaded that for several years we have had little cause to complain of drought, and a big outlay that can be made profitable but one year in seven or so will hardly pay. None the less, greatly blessed are those who have an abundance of water to hand. We hear, for instance, on every hand, Strawherries never looked better than now, and perhaps they may, but how much longer can the best breadths in the kingdom hope to endure and produce a corresponding crop of fruit without speedy rain or an abundant artificial supply of water? Grass makes poor growth, and over extensive areas the hay crop will be almost nil without rain. The same remarks apply in a score of ways, and it is but natural that long-continued drought should create exceeding anxiety; indeed, the misfortunes which frost has wrought for the fruit growers drought may he repeated for the vegetable growers. If it be not a Hihernianism, we should say that the very finest day of the present year will be that one which gives us a pouring and continuous rainfall-and that, as these sheets are passing through the press, is in course of realisation.

THE FAIRCHILD LECTURE. - On Tuesday night the Fairchild Lecture was delivered at the Shoreditch parish church. This is one of the oldest foundations in London. By the will of a pious gardener of Hoxton, THOMAS FAIRCHILD, 1728, a sum of £25 was vested in the churchwardens for the delivery of a lecture every Whitsun Tuesday on one of the following subjects: -"The Wonderful Works of GOD in the Creation," or "The Certainty of the Resurrection of the Dead, proved by the certain Changes of the Animal and Vegetable Parts of the Creation." The first sermon was preached by Dr. JOHN DENNE, on Whit-Tuesday, May 19, 1730, from St. Matthew, vi., 28-30 (the Providence of GOD as seen in the Lily and the sparrow). From that time until now-a period of 154 years-the lecture has been regularly delivered at Shoreditch Church. On this last occasion the lecturer was the Rev. JAMES BENNETT, of Park Church, Chelsea.

— Geranium fileum. — This Crane's-bill is generally considered to he not a true native, although long ago naturalised, and presenting all the appearances now of a genuine British plant. In most botanical works it is recorded as growing wild in England, as well as Scotland sometimes. It is one of those species possessing a characteristic individuality from the deep purplish-black flowers, which are orbicular in outline and spread out flat. Besides, it is a good old inhabitant of the herbaceous border, from which it has been hanished to the more obscure cottage garden or botanical collection. When seen in a wild state, however, it seems to acquire fresh interest, and ought to be more frequently seen in gardens. In hedge hanks towards the middle of Surrey some fine patches appear happy and quite at home.

—— NEW FLOWER VASES, &C.—These were an object of considerable interest at the Manchester Botanical Gardens, and they served to illustrate the

axiom that everything in this world can be utilised. Here were charming flower vases, tumblers, jugs, cups and saucers, and many other things, looking as if they were made of a richly-veined dark horn or black marble, but really manufactured out of blast furnace slag, millions of tons of which abound in the neighbourhood of great ironworks. It is really the refuse of earth, iron, and glass, after the liquid metal has heen drawn from it; it has been used for brick-making, repairing of roads, and other purposes, and failed, but is now happily utilised as above stated; and there is this peculiarity about it, that the manufacturer has no control over the pattern; that is formed in the mould as the heated slag is poured into it; and though no two articles are really alike, they yet match exceedingly well. The slag is re-melted at a great heat, then poured into prepared moulds, and subjected to hydraulic pressure. There is danger of the articles cracking in the act of cooling, as the darker part cools before that which is so handsomely shaded and feathered with white; but this is of hut comparatively small moment, as the cost of the slag is but trifling. The articles exhibited on this occasion were the property of Mr. J. BEESLEY, Fern House, Rolland Road, Lozells, Birmingham; and we understand that the idea of utilising the slag in this way was first carried into practical effect in Germany. Generally the ware, if it may be so termed, is of the most elegant and ornamental character, and perfectly free from porosity.

— ANNIVERSARY DINNER OF THE AGRICUI-TURAL SEED TRADE ASSOCIATION.—This meeting was held last Friday evening in the Holborn Restaurant, the leading firms belonging to the Association heing represented. Mr. David Syme occupied the chair, and Mr. Wm. Neustetel the vice-chair, Amongst those present were Messrs. N. Sherwood, N. David, Jas. Glenn (Belfast), D. Allester, W. Bates, — Marsh, — McAtee (Baltimore), John Donaldson, Alf. Newton, &c. After the usual loyal and other patriotic toasts the Chairman proposed "Prosperily to the London Agricultural Seed Trade Association," which was responded to by Mr. Allester, Secretary. Several other toasts followed, and a most enjoyable evening was spent.

— THE WEATHER.—General remarks on the temperature, rainfall, and duration of bright sunshine, for agricultural and sanitary purposes, during the week ending June 2, 1834, issued by the Meteorological Office, 116, Victoria Street, London, S.W.:
—The weather during this period has been on the whole cold, and often very cloudy; the air has been dry and searching, and at times frost has occurred on the ground. The winds have been mainly north-easterly or easterly, but towards the end of the week they shifted somewhat suddenly to the south-west-ward, and occasionally blew strongly on some parts of our northern and north-western coasts. The temperature has not varied much. It has been below the average by 3° or 4° over England, by 1° or 2° in Scotland, and about 2° in Ireland. The highest readings occurred over England on the 27th, and in the West of Ireland the maximum (70° to 72°) values were registered on the 27th or 28th, when the sky was clear, and a moderate breeze from the eastward carried the warm air from the inland to the western coast stations. The lowest of the daily maxima (33° to 35°) were registered in England early on June 1. The lange has been somewhat large. The rainfall has been deficient over Great Britain and Ireland. In England there has been none, but in the Channel Islands a considerable quantity fell during the earlier and later days of the week, at which time local disturbances were observed about the mouth of the Channel Islands and earlier and hater than the control of the procession observed:

—These have been very slight, so far as depth is concerned; but, as before noticed, the shallow one which appeared over the Bay of Biscay between the 27th and 29th, caused a large fall of rain in the Channel Islands and west of France, and those which came over our western coast at the end of the period gave a moderate fall at the western stations and a large fall in the Channel Islands, bound the control of the period gave a moderate fall at the western stations and a large fall in the Channel Isla

— GARDENING APPOINTMENTS.—Mr. CHARLES WARWICK, lately Foreman at St. Ann's, Co. Dublin, as Gardener to Lord O'NEILL, Shane's Castle, Co. Antrim.—Mr. WILLIAM DIVERS, Fruit Foreman to Mr. GILBERT, Eurghley, as Gardener to J. T. HOPWOOD, Esq., Ketton Hall, near Stamford.

TOBACCO IN PORTUGAL.

THE British Consul at Oporto recently furnished a report on Tobacco growing in this port-wine district, a branch of culture brought about by the failure of the Vine crops owing to the disease. The best qualities of Tobacco-Turkish, Havana, and Manilla-are grown in more southerly latitudes than that of the Upper Douro, which is about 41°; but the cold of this mountain region in winter is great, and its heat in summer i far greater than its latitude might seem to promise. A very good French authority, M. Jules Guyon, says, "Wherever the Vine will thrive no crop is more profitable than Tobacco, and a district where wine can be grown with qualities of flavour, body, and essential vinosity, superior to any in the world, may be expected to grow Tobacco of superior excellence; but many other requirements go to the making of good Tobacco besides climate. The first operation is to sow the seed on a prepared seed-bed in early spring. Great care is necessary in weeding, watering the seedlings, and in protecting them from wind, sun, excessive rain, and the attacks of insects. In two or three months, according to climate, the seedling is ready to be planted out, io ground manured as we in England manure for Potatos. A garden line is employed in planting, and a little more than a yard is allowed in France by the regie from plant to plant, but Spanish and American authorities consider this space to be far too great.

The young Tobacco is sheltered in case of excessive sun, and the field watered before planting ing takes place if the soil be dry. In from fifteen to twenty days the ground is cleaned with the hoe, and the plants are slightly earthed up. When the flower-bads hegin to show the lower leaves are removed, leaving only about twelve, more or less, according to the kind of Tobacco, and according to whether quantity or quality of Tobacco is looked to whether quantity or quality of Tobacco is fooked for. About a fortinght after this operation the Tobacco is ready to be gathered. It is then that the real difficulties begin, and the treatment it now receives determines whether the product is to be classed as very bad, fair, or good. A process akin to the making or stacking of hay takes place, but a process which requires infinitely more care, more watchfulness, and more attention to detail. hay, the Tobacco has to be partly dried and then fermented, and it has then to be dried again. The plants are harvested by being cut down and left for a few hours on the ground, preferably in the shade, where, by partially losing its sap, the plant becomes limp and flexible enough to be carried without injury being done to the leaves. The Tobacco is then taken to the drying-house, and hung up in bundles on rods crossing the rafters; and so it remains three or four days. The bundles are then separated into smaller ones, which allow of fuller exposure to the air. In about a month the Tohacco has gained some colour, and its aroma. It is then gathered into heaps, the heaps resting on a framework of wood raised from the floor and covered with mats, weights being placed above the mats. All these operations are critical, and vary in duration with the temperature and humidity of the air. A slight fermentation takes place at first in the heaps, followed by a drying up of the juices of the plant, after which the colour deepens and the aroma is heightened.

When, in from twenty to thirty days, this last operation is concluded, the Tobacco is ready for classification, according to size, colour, and appearance of the leaf, the highest class being the dark brown kinds with large smooth leaves, through the lighter shades of brown and yellow, to the greenish, black or yellow leaves, spotted, toro, rough and discoloured, which form the last class. These are the processes which every grower of Tobacco has himself to perform. It will be seen that they are almost of the nature of a manufacture, and require patience, skill, knowledge, great attention, and a good deal of actual labour. In France, accordingly, good deal or actual labour. In France, accordingly, the cultivation of Tobacco is almost entirely one of the petite culture. It would be too much to expect such qualities of skill and attention from a farmer of the ordinary type, accustomed to the routine of four or five crops only, and the charge of two or three kinds of domestic animals. The yeoman farmer of Portugal is necessarily much more than this, he is accustomed to the difficult culture of Maize, as well as to that of the ordinary cereals; to growing many varieties of pulse, of Gourds, and of Water Melons;

he is a wine farmer and a wine maker; he grows Olives and presses the oil; he is skilled in mining for water, and in the process of irrigation. The farmer of the Douro undertakes still more, and is more skilful and enterprising than the men of other parts of the country. His wine making is a very delicate operation; he is a shrewd, patient, and cautious as the Norman, and is as versatile a cultivator of the fruits of the earth, as the farmer of Provence. There is no doubt, therefore, that so far as good and careful cultivation is concerned, the Douro farmer is quite capable of undertaking to grow Tobacco. On the other hand, the reporter says in his opinion it is open to doubt whether the soil of the Upper Douro, stony as it is, and poor as it is, except in the bottoms of the narrow valleys and ravines, is rich enough to support so exbausting a crop as Tobacco, without frequent, copious, and expensive additions of manure. It is a soil so poor and so dry, that even the Olive trees on its hillsides are conspicuously stunted in growth. If such manurings are necessary, then its carriage through the steep and wetched roads of the mountains would add greatly to the first cost of production. The great want of water is, perhaps, another drawback to successful cultivation.

CHINESE VEGETABLE PRODUCTS.

In a report of a journey through the provinces of Tsu-ch'uan, Yünnan, and Kwi-chou, from Feb. 11 to June 14, 1883, some interesting notes occur on the vegetable products of the country traversed. At one part of the journey brick tea is described as being made up into packets of 18 catties in weight. The tea in first enclosed in what looks like dried Banana leaf, and theo cased with coarse matting. The packets are long and flat, and are piled one above another on a wooden framework extending above the carrier's head. At the bottom are usually a couple of half packets, which afford a good rest for the pole which the carrier places under his load when he wants a rest. The maximum load I have hitherto noticed was ten whole packets and two half packets, weighing 198 catties-a good load to have on one's back for fifteen days-the time usually taken by these carriers between Ya-chou and Ta-chien-lu. The ordinary load was eight and nine packets. The freight between these two places is 300 cash a packet, so that if the journey is performed in fifteen days the wages of a carrier of ten packets amount to 200 cash a day. Among carriers of such heavy weights one would expect to find men of remarkable physique, but they seemed to be distinguished for "want of leg." The same applies to the salt-carriers. They travel slowly, resting every few yards and giving vent to their feelings, which on such a day must have been anything but amiable, in a low whistle, or rather half-whistle and sigh. The brick tea manufactured at Ya-chou for the Tibetan market is altogether different from the brick tea manufactured by foreign merchants at Hankow. The former is entire leaf and twig loosely pressed, while the latter is tea dust firmly compressed into actual brick-shape." "Beyond Tung-ching Hsien the valley contracts, and the hills on either side become more precipitous, rocky, and uncultivated; frequently the bed of the stream occupies the whole valley, while the road runs along the hillside. Some distance south of the city the hills are thickly dotted with the Tea shrub growing on very rocky ground, and we met a number of carriers with bundles of brown leaves and twigs, which we took for dead leaves collected for firewood, but which turned out to be 'tach'a,' great or coarse Tea. It was bound for Ya-chou, and will doubtless find its way back along the same road to Tibet." At another point of the journey the Mulberry, Orange, red Date, and Pear trees were frequently met with; the Orange is described as a tall tree with a small fruit with a thick and wrinkled skin, so thick in-deed that the edible portion of the Orange is reduced to a minimum. A very remarkable fibre, about which something more will, it is hoped, be soon found out, is described in the following para-graph:—"At Hai-t'ang I procured a specimen of a coarse cloth, manufactured from the fibrous root of a grass which grows in the gullies of the mountains in the neighbourhood. It is called the 'fire cleansing cloth,' and is used for dusting and other purposes. The peculiarity of the cloth is that when it is dirty it is put in the fire, the dirt is consumed, and the cloth is taken out clean and uninjured, and ready for use. I can vouch for the truth of this, having made the experiment myself." The white wax insect is said to be the chief produce of Chien-chang. Little white wax, however, is produced as compared with other producing districts, such as Chia-ting Fu, which depend entirely on the Chien-chang valley for their supply of insects, and it has hitherto been matter of surprise that the valley of Chien-chang should produce the insects and not the wax, and Chia-ting the wax and not the insects. The reason is perfectly simple, however. In the Prefecture of Chia-ting the Wax tree is extensively grown; in the valley of Chienchang it is not. The white wax insect does not grow on the Wax tree, but on the Tung-ching tree which is widely grown in the Chien-chang valley. A small twig of this tree, the scientific name of which does not occur, is described as containing about half-adozen round excrescences about the size of a Pea, and innumerable smaller excrescences like minute shell-fish clinging to the bark. On opening one of the brown glazed Pea-shaped excrescences thousands of minute whity-brown creatures, whose movements are all but imperceptible to the naked eye, are seen. In less than a month's time the excrescences would be collected, transported, and suspended on the branches of the Wax tree. At first they spread themselves on the upper side of the leaves during the night, but hide during the day from the sun under the leaves. After a time they spread over the branches, and secrete the wax.

The narrative from which the foregoing information is gathered is worth the time occupied in its perusal. It is printed by Harrison & Sons.

WEEPING TREES.

AMONG the variety of subjects chosen for planting we do not find that those with a pendulous habit of growth meet with that amount of recognition their general effectiveness entitles them to. If we take the trees as usually seen, they are planted with a niggardly hand, as if their presence would spoil the landscape, and on the principle of having one here and another widely distant. yet too much inclined to follow the dictum of the older landscape planters, who, we know, were possessed of crotchets, but whom we too religiously follow in their instructions, instead of breaking loose from them. We are aware there are some who would no more tolerate a weeping tree than they would decorate their board in the old Roman fashion with a skull, because of the funereal bias of association of ideas. To our trees it is now often conceded by men of taste that, given a tree that shall look well and really be effective as such, a group of the same will be still more so; therefore a large group, composed mainly of trees of a pendulous habit-say of Beech, Ash, or Willow-must form a desirable addition in a garden large enough to admit of it. On the same principle a large piece of water of several acres in extent has a distinct and appropriate margin, if this consists chiefly of such trees-the charm consisting in their shoots and branches touching or tending downwards in perpendicular lines towards the great horizontal line of the water, at the same time that they hide entirely or else partially obscure the outline of the bank, and so add to the charm of mystery belonging to all that we cannot fully see. These are the summer aspects only of deciduous trees. In winter all is bare, although even then there is a beauty in such trees.

Of weeping evergreen subjects we possess nothing worthy of the name fit for such positions as those in which we would place the Willow, Ash, and Beech, or the Sophora pendula. Some few Conifera have a the pendulous Wellingtonia; and there is a drooping, tangled variety of the common Spruce named viminalis that would fit that description. There is a drooping Holly, but as it is usually seen it is a stiff, ungraceful subject; in fact, a weeping Holly seems almost a misnomer and an impossibility, so rigid is the habit of the species generally. It is a matter for regret that no examples of avenue planting are to be found composed of such trees as Fagus sylvatica pen-This is a beautiful object in soils suited to the Beech, and on these it will be found to grow quickly. The free and fantastic habit of its growth would, in part at least, tone down the artificiality that is associated with the avenue. Nothing can look more formal and ungraceful than an avenue of any species of Coniferous trees, but pendulous trees of this variety, planted alternately with, and slightly in advance of, say, Copper Beech, Tulip trees, or Gymnocladus cana-densis, or even the common form of Beech, would have a very pretty effect when in leaf; and even in winter the variety of habit in the two or more different kinds of trees would not be without its charm, M.

WINTER IN THE TROPICS.

IT seems to be hardly realised how wintry is the aspect of the dry season in the Tropics. Many more of the trees in Africa are deciduous than we often imagine in our conjured-up mental visions of a fair tropic land, where perpetual verdure reigns, and the vegetation is a vague, indefinite mixture of limp Palms, with fronds like ostrich feathers, and rampant Bananas raising their florid greenery above the masses of formless creepers; but, nevertheless, when about a month has elapsed after the last rains are over, the aspect of an African hillside has much of the cheerless desolation of winter about it. The once imposing Baobabs, whose masses of verdure were fair to see, are reduced to mazes of leafless twigs; the ground is covered with a brown carpet of fallen leaves; many trees, though retaining their foliage, put forth no fresh shoots, and are yellow and seared with the hot sun; here and there an evergreen stands out, like an English Yew or Holly, in almost heartless contrast of dark cold green, amid its faded withered fellows, and next to it, perhaps, is a white skeleton of what was a short time since a tulted tree. The tall herbs, erewhile gay with gorgeous flowers, show now nothing but yellow stalks and shrivelled seed-vessels, in which perhaps there still lurks a point of colour in the red or orange seeds that gleam from under the brown husk. The many tiny flowerets, the mosses and fungi, are scarce to find; only certain repulsive plants-things with fleshy, mutilated limbs, weirdly swollen, distorted, and covered malicious prickles stand forth in disagreeable prominence, screened from view no longer by the fair and delicate creeping Ferns and clambering Lycopodiums, and seeming to stand unchanged and prosperous when all else fades and dies. In the great meadows through which the path meanders, the waving grasses are laid low, and in their place are dismal tracts of black ashes where the bush fires have just swept by. But the dry season is hardly death so much as recuperation. It is a short pause-a sleep in which the expended forces of Nature are once more gathered in. Just as the earth in its summer solstice spins out from the sun's control like a restless child, and then, wearied with its wilfulness, lets itself be slowly drawn in again to run its sober winter journey, so its tiny children, who have rioted in all the exuberant excesses of spring and summer, need the repose of the slack months to restore their energies. " The River Congo," by H. H. Johnston, F.Z.S.

CLIMBING PLANTS IN TREES.

THESE give an appearance of robust luxuriance and unrestrained vigour, reminding the spectator ol those tropical and half-tropical climes where Nature, under the influence of perpetual heat and moisture, runs riot, producing oftentimes vege-table giants. Some of the most astonishing of these are the climbiog plants, that ascend the tallest trees of the forest in search of light and space where they can develope their foliage and flowers, travelling from tree to tree, and some throwing out roots in the air, that reach to earth, there taking fresh roothold, and extending still further in their stem growth. Our plants, checked in their growth by frost and cold through half the year, cannot vie with these tropical inhabitants of the jungle and the forest, and our nearest approach to them is to be found in the larger forms of Ivy, in Ampelopsis bederacea, in Wistaria sinensis, the Vine, Clematises, and Periploca græca. But the largest and strongest of our climbers, the one that approaches the nearest to these, is Aristolochia Sipho. Smaller creepers we have io abundance, but our purpose is with the most rampant ones, good for ascending our biggest trees. When once this becomes established, it will grow fast enough. It is no use to merely dig a hole at the treeroot and stick the plant in expecting it will do well; but a good sized hole must be got out near the stem. There are no fibrous roots in that part to draw the goodness out of the soil you give, unless the tree is young, and in that case you had better plant no creeper; or better, a hole may be made some distance off, training the main shoot underground when it has

got as thick as the thumb, in the meantime allowing it to grow attached to a stake for support. If merely assisted in its upward climb with a tie here and there, this plant will quickly reach the summit of a tree 50 feet high; it will not then strangle a tree like Ivy with its clustering thick growth, but will creep outwards, if the tree is a solitary one, to the extremities of the limbs, letting fall slender shoots and festoons of handsome, broad, heart-shaped foliage, and in warm summers an abundance of its curious pitcher-like hrown flowers. Ampelopsis hederacea sorts makes a good creeper, the growth being rapid, and its autumn tints most gorgeous. This is not a self-clinging plant, and must, therefore, have assistance at first, although later the interlacing stems clasp the stem and branches of a tree, and will merely require that its leading shoots be led upwards and outwards. A. tricuspidata or Veitchii is a very handsome kind, but is less suited to climb a tree than to drape a low fence, the pediment of a statue or a vase, or to be allowed to cover a low stump or pillar, and having, contrary to the other kinds of Ampelopsis, a clinging habit, it gets on without much assistance. Periploca græca is a most hardy, quick growing, deciduous creeper, growing to great lengths in one season; the foliage is deep green in colour and lanceolate in form. This is fit for any place where a creeper is desirable; the flowers are inconspicuous, and purplish in colour. The Clematis, Vine, Ivies, Honeysuckles and Wistarias are too well known to need description, although it may not be amiss to note that Clematis flammula is one of the very fastest growers, and has deliciously scented white flowers, which appear in immense bunches on old plants. C. vitalba should also not be omitted-indigenous to our country, and found in our southern hedgerows, smothering other plants out of existence. The Trumpet Honeysuckles, Bignonia radicans, and some such Roses as Boursault, Prairie Rambler, Avrshire. and Jasmine are all good in positions where there is much light, as the beauty of all these few last consists more in their flowers than in the foliage, so that as simple climbers rampant and full of leaf those mentioned at the beginning of this article being the best for the purpose. F. M.

DEUTZIAS.

THESE profusely blooming miniature shruhs, which are so easily grown in the open air or in pots, should be in every garden. Useful as forced plants for early winter and spring flowering as are D. gracilis and D. crenata, they are but rarely seen growing in clumps or masses by themselves-a mode of treating them that displays them to the greatest advantage. If the lighter habited and earlier blooming D, gracilis be intermixed with D, crenata. D. scabra, or the pink-flowered D. sanguinea florepleno, a long succession of bloom can be secured, the sorts flowering at different times in the order they are named. Any of them look well as small groups on the turl, and the larger growing as single specimens, make excellent effects with their long unrestrained garland-like flowering branches drooping all round the plant in May and June. The Weigelas, massed together and bordered with Deutzias, make a very chaste combination, that may be improved by the addition of flowering bulbs and hardy herbaceous plants or summer flowers. The pruning of the Deutzias of all kinds is best done just after the flush The pruning of the of the bloom is past; they may then be cut back more or less, according as the variety is a weak or a strong grower. All of them flower on the previous year's wood and on spurs made on still older wood. D. scabra and D. crenata should have the main shoots left at the length of 3 or more feet, and if the plants occupy a sunny position in the garden, where well-ripened shoots may reasonably be looked for, the plants soon attain a good size, and bloom abundantly. They are not fastidious as to soil, but do better in an eariched light soil than in one that is heavy and cold, Soils of the latter character are the better for an addition of sand, peat, and even ashes, the latter being placed at some depth under the plant. The plants can be propagated in the same way, and at the same time of the year, as Roses, Currants, &c., or from cuttings in a mild bottom-heat in spring, taken from plants that have been brought on in heat. The cuttings must be potted off when rooted, and grown on in pots for a time in a close frame, giving air as the season advances, till full exposure can be used without checking growth. During the winter plunging

in tan or leaves to protect the roots from frost will carry the plants over that period of the year, and the next spring such examples as are required for out-ofdoors use can be planted in lines in the reserve garden, where they must stay till they attain a size proper for planting out in their permanent stations. Young plants in pots are liable to attacks from thrips and green-fly, and, under a warm dry treatment, to red-spider, but under more natural conditions they are seldom molested by iosects.

DUPPLIN CASTLE.

MR. HUNTER's Woods, Forests, and Estates of Perthshire, is chiefly valuable for its numerous notes on trees, but he adds to the title "with Sketches of the Principal Families of the County," and that part of his narrative will prove of the greatest interest to the general public. At some future date, perhaps when the seedling Oaks of Perthshire have become decrepit dotards, when the Battle of Dupplin, fought five centuries ago, has receded 500 years further into the past, and near it the epoch of oblivion which overtakes all such events, even the romantic history of heroic Scotland may be read with much less interest than it is own. But at present the story of Scotland's struggles and the history of the origin of her leading families, possesses all the interest of a most exciting novel, to which the dignity of truth is added.

Dupplin has been a battle-field—thanks to a prevailing taste in the country it has now become the scene of some of the most successful arboriculture in Perthshire. Sir John de Hay, of the twelfth century, was the ancestor both of the Marquis of Tweedale, and the present Earl of Kinnoull, of Dupplin Castle, The titles of Earl of Kinnoull, Viscount of Dupplin. and Lord Hay were won by Sir George Hay in the years 1627 and 1633, as High Chancellor of Scotland. The ninth Earl paid the great family of Drummond the compliment of assuming their name and arms as heir of entail of his great-grandfather, William Drummond, Viscount Strathallan. And now we may pass from the family tree to the trees on the estate. The double Oak avenue, the double avenue of Beech trees, and the Lime avenue are all remarkable; some of the Beeches are among the finest in Scotland, measuring 151 feet at 5 feet, with boles of 30 feet, and total height of 120 feet. It is pleasing to meet with "Oswald's strip" of Abies Douglasii, named from the late respected head gardener, and growing rapidly on the light and friable well-drained soil which the roots delight to fasten upon and penetrate with ease, and where they find abundant constituents of their growth. A Silver Fir in the policies girths 16 feet at 5 feet, and has a straight stem of 30 feet; but an older tree of the same sort measures 17 feet at 5 feet, with a bole of 40 feet to the part where it branches, and a height of 120 feet. This is one of the earliest planted Silver Firs in Scotland, but throughout the Land o' Cakes there are no Silver Firs that equal those of Inverary, where scores of trees, among thousands of noble specimens, 14 feet, 15 feet, and 16 feet 4 inches at 5 feet from the ground, taper gradually so as to present an uninterrupted trunk, measure timber to a great height, and lift their topmost leader 130 feet or 140 feet from the ground. And, since Inverary recurs to mind, let us mention the avenue of Beech near the town, measuring in girth 15 leet 7 inches, 17 feet, and 18 feet 6 inches at 5 feet from the ground, height and breadth being in just proportion.

Still the avenue of Silver Firs on the north side of the burn at Dupplin is worthy of the notice it obtained during the visit of the Queen and Prince Albert in the days of lang syne, when the Royal and accomplished couple visited many great houses in Scotland, and crossed the Grampians to Blair Athole, travelling in simplest fashion, and stopping the night at an ion near the pass, where the maids were too frightened to wait at table. In Leaves from the Journal of Our Life in the Highlands these excursions are well described, and the beautiful situation of Dupplio Castle is mentioned, with its wide views; the Lower Strathearn below the hill, with the river winding its crooked way towards the Tay, the railroad passing presently under the Hill of Moncreiffe, the Ochils westwards, and the village of Bridge of Earn nestling under the shadow of Moredun top in the opposite direction. Many noble seats, too, are seen, such as "lordly Duncrub," Freeland, Condie, and Ardargie, and far in the west the woods and mansions of Ardoch. Among the numerous trees measured by Mr. Hunter is a fine Spanish Chestnut, girthing, as he notes with his usual precision, "20 feet at 5 feet, with a very good bole, but rather kootty." A Duplin Araucaria imbricata is also described and figured, as it deserves, being a tree full of pricky foliage from the top to the ground. A height of \$\frac{1}{2}\$ feet, a stem of 5 feet 7 inches at 1 foot above the ground, and a circumference of the branches of 65 feet, are measurements most satisfactory in a tree of this kind thirty years planted. The pinetum—not yet noticed—contains many notable Conifers, and those who read of the dimensions of these rarer specimens, as well as of the trees generally, and whose own trees are less favourably placed, will envy perhaps the soils and sites of Dupplin. Mr. Hunter adds an account of that other property belonging to the lord of Dupplin, Kinaoull 11ill, near Perth.

VEGETABLE PRODUCTS OF BORNEO.

SOME interesting notes on the products of Boroco are contained in a recently issued report. The chief of these products are gutta-percha, india-rubber, and rattans. Of the first of these the writer says :--"Various kinds and qualities of gutta-percha are afforded by various Sapotaceous trees, but the pure red Bornean gutta is yielded by Dichopsis Gutta. species of the genus Dichopsis, however, yield guttas which, being of inferior value, are frequently mixed by the native collectors with the more valuable red variety. The red variety is obtained from red and rough-stemmed trees, which are generally found growing among old jungle on the hill-sides to a height of from 100 to 150 feet, with a diameter to 3 feet. The natives, who roam the jungle collecting this raw product, proceed as follows:—On coming across a tree old enough to cut-one having a diameter of, say, 12 inches-they fell it, cut off the top, and ring the bark at distances of about a foot. The sap for two or three days gradually drains away, and as it does so is collected in any convenient vessels, such as leaves, cocoa-nut shells, &c., from which receptacles it is transferred to a pot and boiled with a little water for half an hour or so. The milk is boiled to prevent it from hardening on exposure to the air, as if allowed to do so it becomes comparatively valueless. It is very difficult to estimate the comparative yield of each tree, as the quantity varies so much, according to the size of the tree and time of the year-the flow of the sap being greatest when the tree is producing most leaves; but a small tree will generally yield a quarter of a picul (33 lb.), while the largest ones may yield even as much as three-quarters of a picul (100 lb.) each. The value of this red gutta varies according to its purity, from 40 dollars to 80 dollars per picul. Another species of Dichopsis (D. macrophylla) yields an inferior gutta of white colour. This species is of smaller growth (50 to 60 feet high), and differs also slightly in the foliage. It yields proportionately less gutta, often only 20 catties (261 lb.) per ton.

INDIA-RUBBER, OR CAOUTCHOUC,-This is ohtained from three varieties or species of roughstemmed woody climbers, known as Manungans (Willughbeia sp.), which attains a length of over 100 feet, and a thickness of about 8 inches. The juice is obtained in much the same way as gutta, and is prepared either by boiling like gutta, or by steeping in a solution of salt. This wasteful method of collecting guttas and rubbers has naturally caused an exhaustion of the supply from the more accessible districts; the rubber trees, bowever, are probably not so thoroughly exterminated as the gutta tree, owing to the greater tendency of the former to be reproduced from suckers (especially when young plants are cut down), from cuttings of the stem rooting accidentally, and from the fruit, which being edible, is much sought after by monkeys, birds, wild pigs, &c.

RATTANS, OR CANES.—These are the stems of various species of Calamus, as C. Rotang, C. rudenum, C. verus, &c., which are found distributed all over the district. Two different kinds are known to the collectors by various names according to any special quality they possess. These canes are termed rattans to distinguish them from the Malacca cane (C. scipionum), the stems of which are much thicker and used, after heing bronzed by heat, as walking sticks,

Under the head of "Agriculture" it is stated that the only plants cultivated in Western Borneo for exportation are the Gambier (Uncaria gambir), Pepper (Piper nigrum), and the Sago Palm (Metroxylon Sagu). Gambier and Pepper are cultivated only in the immediate neighbourhrod of Sarawak, while the Sago Palm is grown on almost every river in the Sarawak and Brunei territories, but curiously is not found in North Borneo, to the north of the Papar River, which enters the sea some 50 miles north of the island of Labuan. Its absence in North Borneo is remarkable, as it is again found in abundance still further north in the Philippine Islands. The cultivation of Pepper and Gambier is carried on together in the same plantations, and has, in the hands of skilled Chinese cultivators, proved successful; but the cultivation of the Sago Palm and the preparation of raw Sago is the only cultivation (if planting the shoots and protecting them from wild pigs can be called cultivation) congenial From numerous enquiries made during to Malays. the past few months, not only among natives who grow Sago, but of Europeans who have lived many years in Sago-growing districts in Western Borneo, the writer of the report says he feels assured that the growing of Sago by Europeans would prove remnunera-tive. "Although," he proceeds to say, "the growth of the Palm is rapid, the tree must reach maturity before being cut, and thus ten years must elapse before any return is obtained for the capital expended; but even allowing for compound interest on the capital, the profit, by the lowest estimate, is from 20 to 25 per cent. The estimates I have met with for planting Sago are, as a rule, misleading, being evidently founded on statistics obtained in exceptionally favourable localities. The most important factors of success in growing Sago are locality and soil. I aminformed that in some localities Sago trees flourish on hillsides, if so such localities must have exceptional soils, or another indigenous variety of Sago tree may exist; but practically Sago trees flourish in the level plains periodically manured with fine mud from the neighbouring hills by the overflow of the river. The presence of a whitish clay as a component part of the soil seems essential for the fullest development of the tree, one of its uses evidently being the mechanical one of retaining moisture. I have found Sago trees growing in certain localities to be between six or seven times more productive of starch than the same variety of Sago growing on soil which to the inexperienced eye seemed to differ very little indeed, if at all, from that in the more productive localities. A Sago plantation demands no skilled labour, entails very little expense for up-keep, and is one of the safest investments. The necessity of waiting ten years for returns is, however, enough to deter many Europeans from cultivating this product, which is so peculiarly suited to the climate and soil of Borneo, and the preparation of which is so readily and cheaply effected by the

natives of the country."

The exports of Sago in 1882 from Singapore fell much below that of the previous year, mainly due, it is said, to the low market value of Sago-flour during 1882. The quality of Sago-flour exported from Sarawak is said to be better than the average imported to Singapore.

TIMBER.—Under this head it is said that the chief wood exported is iron-wood, the botanical source of which is not known. It is of excellent quality and high value, and is said to surpass every other wood in durability. It is already becoming scarce in the vicinity of the capital, from whence its export has been prohibited, but large supplies are still obtainable,

UNSEASONABLE SEASONS.

WE English are not unfrequently taunted with being always talking about the weather, and there is a grain of truth in the accusation. Vet it is only natural that people should often be found speaking of that which circumstances compel them to thick much of, and those who thus give a thrust at our peculiar idiosyncrasies forget that in the matter of climate our experiences are very different to theirs. The inhabit ants of Continental Europe know what kind of weather to expect at each turn of the season and generally get what they look for; their summers may occasionally turn out somewhat drier than usual, or their winters a little more severe, but they are not subject to having their calculations respecting their work and pleasures turned topsy-tury in the way we

so often find ours, and through which we get a habit of frequent allusion to this, the ruling factor in so much of what we do, or leave undone, and about which we are ever under an uncertainty unknown in most countries.

Proverbially changeable as our climate is from day to day, it follows that we are seldom subject to extremes of long duration. A summer with a three months drought and a cloudless sky, even in the driest of the southern counties is a rare occurrence, and snow without thaw seldom stays more than as many weeks. Once or twice in a quarter of a century we may have a few roasting days with a temperature approaching that of the Tropics, setting us thinking of the miseries those compelled to reside there suffer; now and then we get just a taste of a northern European or North American winter, with, for a night or two, the mercury all hid in the ball of the thermometer, which sets us shivering, and gives room for long lamentations about the wide-spread destruction in our gardens. If in winter we get a few weeks with the wind in the Gulf Stream, and thereby noseasonably warmed, we usually have a correcting influence from the opposite quarter, which arrests the otherwise premature movement that would occur in plant life.

From time to time, generally at long intervals, there comes an unseasonable season, like the last winter, wherein the customary changeableness in temperature was all but absent, when, except for the short days and clouded sky, we might imagine that the two last months of the old year and the two first of the new had dropped out of their course-an occurrence the more noticeable, from the fact of its following that of 1882-3, wherein the mildness was only a little less marked than in the last winter, but which did not exert near such an influence in exciting growth in most plants as in the past season, when a good many things scarcely ceased to grow at all. Not the least noticeable thing connected with this untimely movement in vegetation was that it was prematurely excited almost as much on northern aspects as in warmer positions facing south; this no doubt was owing to the all but absence of sun over a good part of the kingdom for the first six or seven weeks of the year, and which was providential in its effects on trees, by keeping back the bloom which otherwise would doubtless have been much earlier, and more in danger than it was.

In the past extraordinary winter the movement was not confined to the flower-buds and flowers of such plants as first show their activity in the bloom. or in such as push their leaves and flowers simultaneously, like the Gooseberry, but extended to many others. Amongst evergreens that usually remaio dormant until the spring has fairly entered Euonymus of various kinds in February had young shoots 6 inches long with leaves threefourths their full size. Some Aucubas, and several kinds of Ivy on north walls, such as the large-leaved Hedera Regneriana, II. canariense, H. digitata, and others, were never quite at rest all the winter, some Ivies having in such sunless positions young growth a foot long with the new leaves of the soft green colour peculiar to them. Cydonia japonica, in common with many plants from the same country, was much influenced by the season. Berberis nepalensis, at the middle of February in exposed places north of London, had its flowers fully open; B. Aquifolia, a little later. Kerria japonica, on a north east exposure, had its flowers showing colour during the last week of the month, with plenty of young leaves. The flowers of the red Ribes had attained half their size, showing their bright red colour at the middle of February. In warm sheltered places the first blooms of Almonds were open at the close of the month.

Individual plants of the common Whitethorn in the hedges in many places had their leaves unfolded nearly as large as a shilling. Tea Roses were never during the winter fairly at rest; some of the varieties with a strong constitution, like Gloire de Dijon, haviog kept on opening their autumn-formed buds in succession all the winter, whilst some of the earlier varieties, like the blush and the crimson Chioas, showed their spriog buds very early. Maréchal Niel on a south wall had young flower-buds on it nearly as large as horse Beans at the beginning of February. Of early spring flowers Primoses and Walliflowers were open at Christmas, whilst Snowdrops, Crocuses, Scilla sibirica, and Violets were open early in February. The flowers of various Daffoldis were showing colour

by the middle of the month, and several varieties of Pansy were blooming as they usually do a month or six weeks later; the flowers of Crape Hyacinth (Muscari) were showing through the crowns of leaves ten days later, and scores of other early spring flowers were proportionately before their time. In the last week in February a young wasp was caught and killed, a queen having been seen buzzing about a fortnight earlier. The rooks began to build in the middle of the month, but after a day or two stopped, seeming undecided what to do; but began again before the close. One remarkable thing was the absence last winter of the foreign feathered visitors that usually come to us at that season, and which, when once here, do not make any mistakes in leaving before the hard weather is done with T. B.

Home Correspondence.

Health Exhibition: the Vegetarian Dinner. -On principle every horticulturist should partake of the vegetarian dinner in the chief gallery of the Health Exhibition-for is not every scientific plantgrower and botanist a sort of vegetarian? dinner consists of three courses, and the charge is so moderate-6d.-that the expenditure of cash need not be too seriously felt even by the most humble fungologists. The dinners are produced, as stated on longologists. The conners are produced, as stated on a large placard in the dining-room, under the auspices of the "Order of Danielites." It is not every one who "dares to be a Daniel," but let us pass into the symposium of "Akreophagy"—a word used on the bills outside—and lounge with the lotus-eaters of the Homeric tales. The handsome room is hung with pictures in oil and adorned with printed moral maxims. The room is stated to be "ventilated by maxims. The room is stated to be "ventilated by Abolus waterspray." The diners are waited upon by sweet vegetarian virgins, and all the profits we are told are given to the poor of London and other large towns. The god of the winds is not wanted in the hall of the Akreophagi to dispel the enticing odours of the savoury vegetable viands—the beans, the peas, the inviting onion, and the odorous cabbage. In the first course we have a choice between the first course we have a choice between lentil soup, not spoiled by the addition of beef, and tapioca and not spoiled by the addition of beet, and tapioca and milk soup. We tried the latter, it was truly a treat for an epicure. If we had partaken of both it would have been 2d, extra; this extravagance we could not venture upon. The second course on Tuesday week included curried haricots, maccarantheses and Pen fittings, we tried the mecanonic roni cheese, and Pea fritters; we tried the maccaroni. and have no hesitation in saying that we felt quite a different person after its consumption. The last course included Fig pudding, Rice pudding, Health pudding, blancmange, and stewed Gooseherries. We longed for "Health Pudding," but it was unhappily "oit;" and although the pretty maid told us we "off;" and although the pretty maid told us we could buy the recipe at the door in the Penny Vegecould buy the recipe at the door in the Fenny Pregaterian Cookery, we have failed to see it in the eighth cidion. This work may resemble Sachs' Handbook in some of the good new things being in the last edition. We therefore fell back with good nature on Fig pudding, a gastronomic esculent of great potency. The drinks are choice and various—nectars for the gods. The smiling maid advised us, after the Fig ambrosia, to try a brimming goblet of Sparkling Kalopine. This transcendently exhilarating delicacy is costly—3d. a bottle; but what is 3d. for a bottle of celestial Nepenthe qualied where E-bolus sings in the airy halls of the Akreophagi! If all the visitors to the next meeting of the Royal Horticultural Society will pay a visit to the Vegetarian Hall and try a sixpenny next meeting of the Royal Horticultural Society will pay a visit to the Vegetarian Hall and try a sixpenny banquet—ninepence with sparkling Kalopine—we promise them that they will soon feel like different men. A book is sold in the Hall termed How to Marry and Live Well on a Shilling a Day—we are anxiously studying this valuable little treatise. W. G. S.

— There ought to be some considerable sym-

There ought to be some considerable sympathy between gardeners and the socio-economical movement known as vegetarianism. Of course those who live by the culture and sale of fruits and vegetables have no unnatural jealousy of the prosperity which seems to wait upon those who supply the world with animal food, but it may none the less seem natural that if much less of animal food be partaken of much more of fruits and vegetables would be consumed. Vegetarians hardly trouble themselves about such considerations in pushing their ideas. They hold rather that vegetarianism is a humanitarian movement in the sense that it renders needless any form of crucity to the lower animals, whilst they farther contend that physically man is not a carnivorous creature, nor is he like the hog, omnivorous; but is a combination of the frugivorous herbivorous, and graminivorous animals, and that consequently he should be wholly vegetarian. It may interest all those gardeners who would like to test in a short way the value of a vegetarian diet, and who will visit the

National Health Exhibition during the summer to learn that there is on the east side of the lower or great arcade a place specially set apart for the serving of vegetarian diamers which are furnished under the auspices of a society, and consist of three courses of vegetable matter, all admirably cooked and served for the small charge of 6.6. Extras ruo at the same simple rate. The waiting is all done by well-dressed attendants. There are no tips, and bread and water are supplied all this gratis. I partook of one of these dinners the other day, having, as a first course, capital Lentil soup; for second, Haricots and Potatos; and third, Fig pudding—a very delicious and enjoyable mid-day meal. Other courses on that bill of fare were tapioca and milk soup, Pea fritters and Potatos, rice pudding, blancmange and stewed Prunes. Not the least interesting fact was that this vegetarian department is immeasely patronised, and bids fair to become one of the most popular items of the great show. A. D. Does any one go a second time? We shall not. E.]

Fruit Trees in California.—Vour allusion to Californian vineyards in your article on "The Mannfacture of Raisins" leads me to thak that a few notes on Californian fruit culture in general, and the time of year when the different trees flower and ripen their fruit, may be acceptable. I will preface my remarks by saying that the source from whence I have derived my information is a reliable one—a genteman who has spent nearly thirty years in the State, and devoted considerable time to agriculture and fruit growing. All fruit trees grow with great rapidity in this State, but the richest alluvial soils are net with on the banks of the Sacramento River, and down in the valley of the Sacramento the best Pear trees flourish. They constantly set as many as three crops in one season. The trees bloom at the usual time in March, with the Apples, Plums, and Cherries, and then, at the expiration of some weeks, fresh flowers will start again, and set another crop, and so on during the flowering time; but it is rarely that more than two crops ripen. "I have eaten," says my authority, "from my own trees in the same season Duchessed 'Angouleme and Bartlett's Pears, fully ripead and of the usual size, of the second crop, the same trees having produced and ripened afine fruit crop that year." This gentleman always raised his Pears oo standards, but a great many growers have them dwarfed on the Quince. He, however, considered that they grew too fast to bear fruit well when so cultivated, although some trees bore must abundant crops when thus managed; for instance, a Glou Morceau Pear, dwarf tree, planed in the year 1855, when it had grown only one year from the bud, was in three years' time to feet high, 4 feet through the top, and measured round the stem at the ground just 10 inches, braoching about 1 foot from the surface. Strawberries begin to ripen in California as early as the month of March, and continue to do so until December. They are the only fruit that require irrigation in the State, for the westerly and southern breez

Lathyrus Drummondi, &c.,—This really heautiful perennial Pea is now coming into bloom in wondrous fashion, indeed till this year I had never realised how grand a climbing Pea it is, but a well established clump of roots in a suitable spot has made splendid growth that is covered with bloom-buds, and many flowers are open, showing that lovely rich reddish-carmine hue which marks this Pea. Blooming thus early it will have a long season, and seems to be quite, as early as the twin flowered Lathyrus grandiforus, that superb variety which, if early, is sooner over. How very beautiful this latter kind is when grown in quantity may be seen at Windsor, where in the forecourts of some of the houses which look on to the Great Park it is largely grown. Perhaps the least noteworthy of all the Everlasting Peas, the red form of Lathyrus latifolius, is the most common one, but it is only because the beauties of the white, pink, striped, and blush tinted forms are little known that they are so little cultivated. Very beautiful effects might be obtained by planting these various Everlasting Peas in clumps here and there, and when well established—and that must be the work of a few pers—and that must be the work of a few pears—then training them up to stout stakes every summer. Some half dozen tens to each clump would keep them well in place, and very beautiful they would look. Not least, they would furnish a large supply of very varied and charming flowers for cutting. When seed of any of the kinds can be obtained—and all do not seed freely—it is a good plan to sow half a dozen in a 6-inch pot, and when the plants are up to plant out where they are to remain. Some kinds, perchance, can only

be obtained by root-pieces, and thus constancy to character is ensured. Certainly as hardy decorative plants Everlasting Peas seem to have been largely overlooked. A. D.

Climatic Changes.—In discussing the question as to whether or not the climate has undergone change in a cooler direction the point for consideration is, not so much whether certain trees will or will not grow, or refuse to fruit, but rather whether the average temperature is below that of fifty or a hundred years ago. That keen observer of Nature, Gilbert White, in describing the winter of 1784-1785, tells us that the cold was intense, the thermometer often going below zero. On the other hand, some summers just at that time were not only excessively bot, but so abnormally hot as to call for his special notice. Had these been ordinary seasons they would have called for no special comment, but the very fact that they receive such shows that they were abnormal, and not common. White mentions that which may interest Northern gardeners to learn, "that in the northerly climate of England the summers are often so defective in warmth and sunshine as not to ripen the fruits of the earth so well as might be wisbed." Thus it is evident that average seasons were pretty much a hundred years since as now—some hot, some cold, and some temperate. The chief point for discussion, however, is as to the distribution of temperature through the year. Of old we certainly seemed to have more clearly dividing lines between winter and summer than now exists. If the winters were colder the summers were hotter, whilst now, if the winters are mild the summers are seldom hot. We had this year really more pleasant spring-like weather in February and March than we had in April and May, and if we take that fact as a guide in our discussion we shall doubtless come to an exact conclusion. If we could have the low temperature of the two latter months during the two former ones all would be well, but the diversion of much of the once customary winter cold to the spring seems to be the distressing cause of our garden missortunes; otherwise the average temperature of the year remains, perhaps, about the same. Southron.

Utilising Weeds: Gas Lime, and other Expedients.—Some twenty years ago, then a pupil at the Government Farming Institute at Glasnevin, I remember reading in the Gardeners' Chronicle of that time — when that journal took a special in-terest in farming as well as in gardening—a strong article against the common practice of getting rid of article against the common practice of getting rid of weeds by burning. I cannot remember the alternative then recommended; but with your permission I will refer to the method I have taken of utilising such villainous root weeds as "Squitch," Crowsloot, Creeping Fiorin-grass, Docks, Thistles, Plantains, &c., and a host of others that no ordinary treatment will rid the larm or garden of. About three years since, having several acres of very neglected land to cultivate that had been let in "con-acre," and that it was no one's interest to clear for several wears one. was no one's interest to clear for several years pre-viously, I collected at considerable trouble and expense some 500 loads, principally of Squitch or Couchgrass; some of the stems (creeping) of this looked grass; some of the stems (creeping) of this looked thick, black, and venerable from age, while a yard long for pieces was about the average. I was strongly recommended to "try fire;" but when one remem-bers how little is left after that species of "cremabers how little is left after that species of "cremation," I did not think I should lose the material for such a valuable compost. All I should have left would be about I per cent. of ash—say ten loads or so out of the 500—that is, ninety per cent. of the organic, or most vabluable part, would have been lost, at least to me. I tried death by smothering as well as burning, and used "rock lime," that is, unslaked from the kiln. I first calculated that the lime in slaking, spread on the heap, would produce so much heat as would kill all the weeds in contact therewith: secondly, that the all the weeds in contact therewith; secondly, that the resulting air-impervious cement formed by the slaked lime on the top and sides would kill all vegetable and weed life; and thirdly, that the following year, sliced down, turned, and mixed, I should have a very nselul compost. All three calculations were fully and amply realised. I mentioned the plan, though nothing compost. All three calculations were fully and amply realised. I mentioned the plan, though nothing new, in the local journals, and am aware many have adopted it as an excellent means, without any expense, of procuring a valuable and always athand compost. Where lime cannot easily or inexpensively be procured I would recommend the following expedient:—If stable manure can be had for the purpose, use it with the weeds in alternate layers, when such a heat is produced as is alternate layers, when such a heat is produced as is alternate layers, when such a heat is produced as is continuous to all vegetable life, and the resulting compost is better than before, in fact admirable potting stuff, for top-dressing lawns, or any other similar time stuff, for top-dressing lawns, or any other similar ting stuff, for top-dressing lawns, or any other similar purpose. If the stable manure is not fresh then you purpose. If the stable manure is not Iresh then you merely manure the weeds. If coal-ash is sifted and beaten so close around and on top as to exclude air it will have the same effect. This year the local gas company have kindly placed at my disposal as much gas-lime as suits my purpose; this is instant death to all vegetable life, while the resulting compost after a year is even more valuable. W. J. Murphy, Clonmel.

Hardy Succulents at Floore.-This extraordinary collection is now at its best as regards flowers, we have never seen it so floriferous before. At the present time the different varieties of Echinocereus ocanthus are a mass of bloom, some of the plants aving from seventy to seventy-seven flowers expanded at once, and the various shades of orange, crimson, and purple exhibited by the flowers have a dazzling effect. Beside the above, Echinocereus paucissimus, E. Fendleri, E. pheeniceus, and E. viridiflorus, with its curious green flowers, are very full of flower. Mammillaria Hyderi var. applanata are particularly good this year. Few are aware of the beauty of these plants, or they would be more generally cultivated; all they require is a good pit or frame with good watertight lights. No covering of any kind is used winter or summer except the lights; sometimes they are frozen as bard as bricks in winter, but if perfectly dry frozen as hard as bricks in winter, but if periectly dry no harm ensues; and in summer they are syringed and the lights closed about 3 o'clock, when the temperature rises to 100 or 110, which they enjoy, as no daoger is apprehended as long as the temperature is kept under 115. Those content of the alphane graden made a receive ledge planted in the alpine garden under a rocky ledge to protect them from wet have much increased in size, but owing to their situation they do not receive In size, but owing to their situation they do not receive the same amount of sun as those in the pit, consequently they do not flower so freely, but grow more uluxuriantly. In this collection the following species are doing well:—Echioacereus viridiflorus, E. Simpsoni, E. pheniceus, E. procumbens, E. Krausii, E. candicans, E. pecinatus; Opunia comaochie, O. Whipplei, O. Engelmanni, O. arborescens; Agave utahensis, A. Parryi, A. deserta, and several others. I may observe that the minimum thermometer on grass registered on April 20, 16°; 23, 13°; 24, 16°.

Garden Insects .- The cold north and north-east winds with which we have been visited of late have winds with which we have been visited in the have been anything but favourable to plants, the growth of which has been slow, and, what is worse, there is much leaf-cucling, showing plainly that there is "worm i' the bud," or that losects are rife, as is generally the case after such weather, for, to use a generally the case after such weather, for, to use a gardeniog phrase, the shoots cannot get away from them, or in other words their progress is slow, and maggot or aphis have every chance of effecting a footing. The rate of increase of the latter is some-thing marvellous, for no sooner is a cluster seen than it spreads, and in a few hours is all over a tree. This shows the great importance of waging war at first sight if the enemy is to be vanquished and exterminated before he does mischief. To make the battle short, sharp, and decisive the attack must be attack must be made in earnest and no quarter given, or, Phoenix-like, the fly springs up again, and though life may have been well nigh spent, in a day or two they are round, and again as active as ever. If we can only get them in a circumscribed space, and fenced round with glass, as we do in houses, we have them at our mercy, as let them initiate themselves into whatever mercy, as let them initiate themselves into whatever vegetable folds they may, smoke is searching enough to find them out and despatch them. This, however, depends on the kind of tobacco-paper used, as the material differs greatly, some being very good, safe, and strong, and other worthless rubbish, and almost dear at a gift, as the consuming of it often does much harm to the foliage. After trying many makes I have arrived at the conclusion that the best is the cheapest, and in some cases where tender leaved plants have to be fumigated, I am of tender leaved plants have to be furnigated, I am of opinion that only genuine ishag Tobacco ought to be burned. Unless care is taken there is much waste in doing this, as to get the most out of it the combustion should be slow, and another great point is, when the smoke is given off, and in the house, to keep it there as long as possible that it may effect its work, and destroy all the unwelcome marauders. With this end ia view a still night should be chosen, and if wet, so long as the foliage is dry inside, all the better, and if not, the shading or blinds, if any, should be let down and heavily syringed, as then the water fills up the material and the laps in the glass, thus sealing, as it were, the openings, and making air-tight the case. This done, the smoke tells, and in order that no aphis escape the funigation it should be repeated early the following morning, and the house kept closed as the following morning, and the house kept closed a long after as is safe to the occupants. To wash of the dead parasites and refreshen the plants it is necessory to give a good syringing, or to make use of the garden-engine, charged with clear water, which will at once cleanse the foliage and make it look bright. To contend with green or black-fly outdoors different tactics have to be pursued, and there is nothing for it but a resort to one or other of the insecticides, of which there are many, that known as Nicotine Soap being, perhaps, as good as most of them, as it contains being perturbed the active properties of Tobacco, and is potent, without being dangerous to young shoots or tender leaves on which it may be used. A cheap and good insecticide may also be made by boiling 2 lb of Quassia chips with \(\frac{1}{2} \) lb. of soft soap in

5 gallons of soft water. By steeping a pound of Tobacco in the liquid it will be strong enough to be diluted to three limes the quantity, and by using it at a temperature of about 90° it is very effectual. For Roses, Peaches, and Nectarines, Plums, Cherries, or, indeed, on anything, it may be applied with safety, but whatever be chosen in the way of insecticide, it should only be left on a few hours, and then thoroughly washed off by the aid of an engine, which, if used occasionally after, and the stream well directed will keep the plants clean. Tobacco dust is exceedingly useful, and if gardeners and rosarians were armed with it in a distributor carried about in a pocket, they need not be quite so much plaqued, as they could discharge a volley at sight and pass on, leaving the aphis falling off to the ground. The maggot is a more troublesome foe, as be is so insidious as to hide himself by colling the leaf around him in a most dexterous way, and to think of bunting him out is quite out of the question, as to do that is a work of time and requires great patience. To settle matters quickly there is nothing like a squeeze between the finger and thumb, which makes the maggot collapse at once, as may be felt, and much satisfaction derived therefrom. The Gooseberry caterpillar is not quite so bad, though in many gardens it is very troublesome, but by handpicking it may be got rid of, as also by dusting with Hellebore powder, or syringing with water in which leaves of Foxglove have been boiled or steeped when hot. For red-spider there is no remedy so efficacious as sulphur, which may be mixed in soap, but water and syringed on to the foliage and wall, but where trees are mulched and have the garden engine played on them this insect ought not to appear, or, should it do so, it should not gain sufficient footing to played on them this insect ought not to appear, or, should it do so, it should not gain sufficient footing to do any barm. J. S.

Gladiolus Colvillii, The Bride,—This plant deserves extensive cultivation for conservatory decoration, judging from a few pots of it I saw at Stibbington Hall, Wansford, a few days since. It had a very chaste and pleasing appearance intermixed amongst the usual occupants of a conservatory, and being only about 1 foot in height, its white flowers slightly marked with pale yellow, rivalled in beauty the Orchids, of which there were many very choice varieties in the adjacent houses. The appearance of these gardens in every respect—the gravel walks were the best I ever saw—reflected the greatest credit on Gladiolus Colvillii, The Bride,-This plant the best I ever saw-reflected the greatest credit on Mr. Milne who has charge of the garden department. W. H. Divers, Burghley.

The Ginger Beer Plant,-There stands before me in an ordinary white glass bottle that fungoid phenomenon, the so-called Ginger Beer plant. I had heard much of this very curious thing of late, but till now had not seen it. An old neighbour, who is very enthusiastic about it, has brought me, however, the bottle that is before me, and its contents ever, the bottle that is before me, and its contents are water sweetened with sugar, some pieces of whole ginger, and the "plant"—which in bulk is perhaps enough to fill an ordinary teacup resembles most closely Tapicca as purchased from the grocers. It is white, in many pieces and form; and when handled is found to be fairly firm, somewhat slippery, and very light. Still its normal position seems to be at the bottom of the bottle, until, in the process of change which goes on within, the pieces ascend to the surface, and there remain for a time, and presently return to the bottom, so that whilst the contents are said to beworking these Tapicca-like pieces of fungus are constantly ascending and descending. It is evident said to he working these Tapioca-like pieces of fungus are constantly ascending and descending. It is evident that carbonic acid gas is also being fast formed from the sugar, and this, too, is constantly ascending to the surface in small globules. Even portions of the ginger at times are affected with the motions going on, and ascend and descend as do the lighter and more buoyant fungus. This so-called plant certainly cannot be credited with the production of ginger beer. It simply produces an actated liquid in this way, that the lungus seems to convert the sugar or saccharine into [alcohol and water, accompanied by the emission off carbonic acid gas; and evidently as the pieces of carbonic acid gas; and evidently as the pieces become charged with the gas they become buoyant and ascend, lalling again when the buoyancy is lost. In twenty-four hours the sugar and water are converted into a pleasant sub-acid beverage, and either the converted into a pleasant sub-acid beverage, and either the converted into a pleasant sub-acid beverage, and either the converted into a pleasant sub-acid beverage, and either the converted of the converted to ginger or essence of lemon creates a non-effervescent drink far more pleasant than is ordinarily manufactured. Fresh water and sugar should be added about every twenty-four hours, A. D.

Gardening in 1597.—I send you the following extracts from an old black-letter book on gardening which lately came into my possession:—

"At what time trees ought to be planted and set,—All kinde of trees may bee planted, transported and cut in March, but it is better they be turned in October, for the frost hurteth them not so much as at other times: for learned men say that in dry townes and warm countries they plant in October or November, and that in moist townes and cold vallies they plant in February or March:

in none other time may yon plant or graffe. When you will plant or set againe wild stumps, if there be anything broke at the root, cut it off. Every plant must be set two foot one from another, or at least one foot, especially when they should bear strong fruits: likewise when thou wilt set strong seedes, as Nuts, Almonds, and Peaches. When a man will plant two stumpes, so must they be of two yeare old, except the Vine. These things you must understand of those plants or stumps which are planted with roots." with roots.

with roots."

"How the Stumpes and Plants must be Prepared and Dressed, which you will Plant.—The plant or spront you must cut round about, so that you leave the very end of it, and put it then into a hole; but if the stumpes great cut it cleane off, and then put onely the undermost part into a hole, long or short, as you will; but if you find two stumpes growen together, you must take heede that the spront growe upright, and if it will not you must constraine, and tie it to a sticke."

Here follow certain instructions how must be kept, and how you must labour them :

"How to keepe plants, stumpes, or trees, from the wild beaster, that they havt them not.— When the path of the beast is free and remediess, there must be put poles, and with thornes the same young trees must be enclosed."
"That the Hurrs doe not hurt them.—Spit on thy hand, and annoine the sprouts therewith, and no Hare will hurt them."

"I'rt them."

"I'rt the Deares spoill them not.—Take the pisse of a Dear and Apples or other fruites maybe made redde.—If you will graft upon a winds stumpe, put the sprouts in ble will graft upon a winds them, and the fruit will be

red."
"Otherwise.—Take an Apple branch and graft it upon an Alder stumpe, and the Apples will be redde. Likewise if you graft them upon Cherry trees."
"How Sower Fruites be made Sweet,—Which tree beareth sower fruites, in ye same pearee a hole a foote or somewhat lesse above the roote and fill that with hony, and stop the hole with a haw-thorae branch, and the fruit will be sweet."

W. Swanston, Belfast.

will hurt them

The Common Hart's tongue Fern. - This Fern belongs to a very handsome genus, and although it is probably one of the most common of our British wild plants, it is likewise one of the most beautiful of them. We possess a great many varieties of this Fern, most of them produced by cultivation; but I believe I am correct in stating that the I lart's-tongue is the only representative we have in England of the is the only representative we have in England of the genus Scolopendrium, and that the generic name was given it because the long lines of spore-cases on the underside of the fronds were supposed to resemble a centipede's (Scolopendra) feet. There js but littledanger of Fern collectors making a mistake with respect to this plant and confusing it with any other species, still it may be well to mention a few of its distinguishing marks. The fronds are long, sword-like, and a shining bright green. The stem is scaly, and the root-stock is slightly creeping. It can be easily increased by division. The seed cases stand upwards. The seed cases stand upwards increased by division. The seed cases stand upwards, and are placed between the veins at some distance from the midtibs. The seed-vessel cover is special, some-times linear, in other cases hollow. The finest Hart's-tongues Fern 1 have ever seen in an uncultivated state were in North Wales, but I am told that the climate of Ireland is still more favourable to their growth, and that fronds a yard long have been found near Dublin, Wiltshire, too, has been mentioned as a good locality, and I have met with some splendid exceinment in the I (armethic woods but the Fern is specimens in the Hampshire woods, but the Fern is not particular as regards its babitat. It will take root not particular as regards its habitat. It will take root in the walls of ancient ruins, grow between the bricks in the walls of anciënt ruins, grow between the bricks in the side of old wells, flourish under the shade of overhanging Oaks, and clothe the sloping, sunny wayside banks with beauty. A small specimen I dug up ten years ago in an adjoining lane, and planted in a cold greenhouse, produced magnificent crisped fronds last year. They looked like green satin frills. Another planted in the same way produced forked fronds. It really made a most striking-looking and attractive object. The plants were in the first place broad and strap-shaped for nearly a foot long; they then became branched, or forked, making two small fronds of about 4 inches long, and in these instances these smaller fronds again became cleft, so that the these smaller fronds again became cleft, so that the original frond was twice subdivided, having six lobes in all. Every one who saw it noticed its singulobes in all. Every one who saw it noticed its singu-lar appearance, but I am sorry to say that the froods it has put forth this spring in the open—for changing my house at Lady Day, I had to remove it—do not show any intention of branching. It has reverted to its original form of hedgerow growth. Any open fibrous soil mixed with leat-mould, or sand suits this Fern, and it likes moisture. Every grower of our native Ferns should try to procure all the varieties of Hart's-tongue, since they are hardy, evergreen, and exceep. retus submut ty to procure an the varieties of Harristongue, since they are hardy, evergreen, and exceedingly handsome. The best known are the P. vulgare polyschides, a narrow-leaved kind, found near Bristol; the S. vulgare undulatum, which I think my "green frill" must have been, and the S. vulgare multifidum, of which my lobated steeping was no doubt an average from the processing the proces of which my lobated specimen was no doubt an example. Dr. M. C. Cooke in his Fern Book for Everybody, states that there are eighty-five varieties of the

Scolopendrium vulgare, all of them named, but as I bave never seen a list of them, I cannot mention any particular specimen save the broad-branched form alled ramosum majus, which I at first had hoped forked Fern would turn out to be, but it unfor-tunately did not show the curious curved points which in the early variety turn towards each other like a lobster's claws, and the Endive-leaved variety called laceratum. Helen Watney, Heatherview.

THE INTERNATIONAL EXHI-BITION AT ST. PETERSBURG.

(Concluded from p. 711.)

GROUPS of decorative flowering plants in com-petition for the best and choicest arrangement are very creditable, but they are very similar to those of our own exhibitions, and include the same kinds. Mr, F. Noieff, of Moscow, for a group of ornamental plants in flower, obtained the prize of the President of the society. It consisted of a central mass of Lilium candidum, bordered with Lilium longiflorum, then a band of splendid double white and coloured Stocks in small pots, and a final edging of Astilbe japonica and Violas. Another group by the same exhibitor consisted of a central mass of Azaleas bordered with some splendid pots of Mignonette, and tiny but well-flowered plants of Deutzia. For a collection of fifty ornamental stove and greenhouse plants the prize of the Horticultural Society of Hamburgh and neighbourhood was awarded to the Botanic Garden, Mr. E. Ender gardener, and among other choice plants he had Theophrasta Jussiæi in flower. For a mixed collection of ornamental plants in flower the prize of the Vice-President of the Imperial Society was given to an arrangement from the gardens of the Grand Duke Constantine Nicolaïevitch. It stood on a plateau before the English garden and surrounding a daïs, on which stood a fine Chamærops bumilis arborea, and on each side the busts of their Imperial Highnesses the Emperor and Empress. Most un-common, in pots for this purpose, were double Dahlias and Foxgloves, which appear not at all unworthy of pot culture from a decorative point of view. Hyacinths were exhibited in several effective groups, and they were considered good for Russian growth though they were somewhat drawn. Mr. Eilers, one of the chief local nurserymen, exhibited Lily of the Valley in quantity and in good state except that, like the Hyacinths, they were somewhat drawn. A fine specimen of Viburnum macrocephalum was exhibited, which shows how fine it is for the green-

house.

Conferr were well represented, and the principal collection was that of Mr. F. de Sitter, of Apeldooro, Holland, to whom was awarded the 1st prize—an Intermediate Gold Medal. These specimens waried from about 4 to 6 feet in height, and, like some other collections, were scattered for effect over the entire building. Most of these specimens were faultless, and, among others, Retinospora obtusa fillera, R. plumosa aurea, Thuiopsis nutkaensis pendula, and Thuiopsis to make a selection. The finest collection of the genus Araucaria were noteworthy, but it is difficula to make a selection. The finest collection of the genus Araucaria we have ever seen exhibited was from the Tauride Imperial Gardens, St. Petersburg—Mr. Fr. Scissmayer, It included twenty-eight reputedly distinct kinds, and the great majority were quite distinct for garden purposes. A. brazilensis pendula, 20 feet high, was very good, the branches beneath the leader pointing straight to the earth. A. excelsa pendula is also gracefully pendulous. One of the most effective is A. Regeli, which is very bright green in colour, and densely furnished with branchlets, which curve downwards. A. Van Geert is one of the most distinct, with Lycopodium-like branchlets. President Greig, Napoleon Baumann, Waranzowi, and Niepraschki, are also noble kinds.

Miscellanea.—We have now to pick up various mis-

Waranzowi, and Niepraschid, are also noble kinds.

Miscellanea.—We have now to pick up various miscellaneous exhibits, hitherto passed by, but from the great number of the plants alone (nearly 600) it will be impossible to notice all. A fine group of eleven Theophrastas, all distinct, and the so-called Theophrasta imperialis, cannot be missed, as every plant was individually perfect, not a leaf tarnished, and jit well illustrated the ornamental effect of the members of the genus. For a single specimen of Theophrasta macrophylla a Large Silver Medal was awarded, and it is really very fine, about 5 feet high and about 5 feet through. All these are from the gardens of the Grand Duke Constantine Nicolatevitch. Moutan Paconies were exhibited by Mr. P. Fertsch, of St. Petersburg, a small group, but showing how fine they are for pot culture. A Large Silver Medal was awarded to a little group from the Fotantic Garden consisting of Statics Suworovi, with rosy flowers, special conditions of the Carden Constitute of the Carden C

flowers from Mr. L. Spath, of Berlin. It gave the idea flowers from Mr. L. Spath, of Berlin. It gave the idea that for early spring decoration there are lots of such plants with pretty foliage which might be forced with advantage. Amoog dark foliaged plants principally were Betula alba purpurea, Annygdalus persica folias purpureis, Prunus cerasifera folias purpureis, Quercus sessiiflora purpurea, and several others. Yellow-foliaged plants, apparently good and effective, were Coryus Avellana aurea and Alnus glutinosa aurea. White varies-

forms.

Fruit and vegetables were not numerous. For Strawberries in pots a Large Silver Medal was awarded to Mr. Sohrt, of the Imperial Gardens, Tsarskoie Seloe. Grapes were small and so also were the Apricots, with one exception to which a Small Gold Medal was awarded. A collection of vegetables from Mr. W. E. Gratscheff was a notable feature in the exhibition, and to it was awarded the prize of the Municipal Council of St. Petersburg. Potatos were in great variety, and in proportion equily so were the Radisbes, which in Russia appear to be in demand in all colours and shapes.

Cut flowers in stands and in wreaths were made up/with good material, but were generally too heavy and massenders.

Out flowers in stands and inverted to be been accomplished to the stands and inverted to be been and material, but were generally full Roses and material, but were generally full Roses and material, but would perhaps be difficult to get any other result. Mr. Eilers contributed the best arrangement, and was awarded a Gold Medal. In this arrangement the combination of Forget-me-Nots and Lilies of the Valley was its most pleasing feature. This exhibitor showed an excellent window decoration, in which Phrynim sagnueum was effective. Everlasting flowers and grasses in all colours and dyes were in grand display, and were very fine as these things go. Apparently real fronds of Cycas revoluta, silvered, are not to be despised in their proper position as ornaments. One exhibitor deals largely in Edelweiss, and showed a large horse-collar like arrangement composed of it, and a swan of the same material, priced at \(\frac{1}{2} \) \frac{1}{2} \)—an exhibit in thoroughly bad taste. Artificial flowers were exhibited made of various seeds and husks, and though ingeniously constructed were far from beautiful.

taste. Artificial flowers were exhibited made of various seeds and husks, and though ingeniously constructed were far from beautiful.

Among artificial flowers the least objectionable were Roses made with feathers, and very cleverly put together. Miss Rowers, of Melbourne, contributed most beautiful water-colour pictures of Australian plants. One of these was composed of four species of Anigozanthus, and was very characteristic. Another fine picture was composed of Encalyptus ficifolia and E. diversicolor. This series, indeed, was worthy of much praise, and a Gold Medal was awarded to it. Models of hothouse construction were exhibited as adapted to the exigencies of this northern climate, but they do not seem to be important, and are precisely as we see them in use everywhere. There were nomerous Wardian cases for window culture, and aquaria with the various gold his (some with double tails, as illustrated some time ago, we believe, in the Lecture Hour). In one aquarium the notice of a sparant of apparently very consense in the longer stem by which the air can be sucked away. Implements were exhibited, but there appeared to be nothing in principle different from hose we are familiar with. The majority of them were for

watering and syringing purposes. From the Botanic Garden at Nikita were exhibited extremely fertile branches of Coniferce, and photographs of the principal

Reports of Societies.

Manchester Botanical and Horticultural: May 30 to June 6.—On this occasion the Council and their indefatigable Secretary scored a distinguished success. It was the seventeenth exhibition held by the Society, and Dr. Watts, the Chairman of the Council, stated at the judges' luncheon, that it was one of the largest exhibition held by the Society had beld, and if not the best certainly one of the best. Last year the enlarged exhibition hone and the annexe sufficed to take the whole of the exhibits, but on this occasion, owing to the increased number of exhibitors and entries, it was necessary to call into requisition the tent which formerly was rected by the side of the old show-house, and this, in addition to the other parts of the show, was full to repletion. The peculiar conformation of the show-house admits of but little in the way of effective grouping, while in the tent all the exhibits were arranged on tables, but in the annexe Mr. Findlay had judiciously and artistically arranged his material, and the effect was very fine, especially when looked at from the raised mound near to the Trafford Road. The weather was fine, and the attendance of visitors on the opening day exceeded that of any previous exhibition. On Saurday also the attendance was favorable, and a fine Whit-Monday no doubt attracted a large number of visitors.

Original Trafform of the Schember of the Sitters. Manchester Botanical and Horticultural: May

of any previous exhibition. On Saturday also the attendance was favorable, and a fine Whit-Monday no doubt attracted a large number of visitors.

ORCHIDS.—These were not only very largely but very finely shown, and Mr. B. S. Williams, who has attended every exhibition for the past seventeen years, said he had seen nothing like it before. R. P. Percival, Esq., South place of the seventeen years, said he had been controlled to the seventeen years, said he had been controlled to the seventeen years, said he had been controlled to the seventeen years, said he had sonly a few being what is termed made-up specimiers, and years with the class for fifteen Orchids in flower Mr. Percival was easily sts, with a magnificent specimen of Ledia purporata, quite 4 feet through, and having twenty-one flower-stems, carrying on the aggregate eighty flowers, and such flowers too; Cattleya Mendelli, perhaps one of the finest examples ever seen, with over fitty flowers; Thunia Bensoniæ, with over twenty-two spikes; Denderboium Iparesisanum, with some twenty flower-stems; D. fimbriatum oculatum, Cattleya Mossie, with about forty flowers, a superb specimen; Oncidium concolor, Anguloa Clowesii, a very fine piece indeed; Cyptipedium barbatum, Vanda saavis, V. tircolor, Odontoglossum veillarium, very activation of the cattleya Mossie, with about forty flowers, a superb specimen of bigb-class cultivation. This collection formed a very conspicuous object at the rend of the exhibition house, and made a very attractive foreground to Mr. S. Schloss' splendid exotic Ferns. ad, O. Schneider, Esq., Fallowfield (Mr. U. Holmes, gr.), with some well grown plants. Mr. Percival was also rst with nine Orchids, staging another very fine to lended; including two superb specimens of Cattleya Mossie, Odontoglossum cellarium, occulatum, Cheth, S. Schloss' plendid dextic Ferns. and O. Schneider, Sq., Lendelii and C. Mossie, Dendrobiam formosum giganetum, D. chrystoxum, D. thyrsiflorum, Odotoglossum erresurents. C. Alendelii and C. Mossie, Dendrobiam premors

Broome, Esq., Didsbury. In the class for ten Orchids made-up specimens are not permitted to be shown, and here the rst prize was again taken by Mr. Percival, with a very fine lot, superbly grown and flowered, besides being large in size, the subjects being Lælia purpurata, Odontoglossum vexiliarium, O. citrosmum, O. Alexandree, Cattleya Mossiæ, C. Sanderiana, very fine; Vanda snavis, Cypripedinm caudatum, C. Domicianum, and Anguloa Ruckeri, carrying some very fine flowers, ad, Joseph Broome, Esq., with some very good specimes indeed, including such a piece of Vanda teres as one seldom sees, D. Wardianum, D. Farmeri, D. Falconeri, and D. nobile, Cattleya Mossiæ, Aérides Fieldingii, &c., 3d, Mr. O. Schneider. In the class for staging the following in fine condition —C. Mendelli, C. amethystina, C. Skinneri, C. intermedia, and C. gigas. In that for three Vandasthe Earl of Wilton, Prestwich (Mr. W. M. Baillie, gr.), was 1st, with two specimens of V. sauvis and one of bicolor; ad, S. S. Malley, Esq., Fallowfield (Mr. George Jackson, gr.), with three plants of V. stavis.

In the nurserymen's division, there was a goodly dissipant but by bespense.

Esq., Fallowfield (Mr. George Jackson, gr.), with three plants of V. stawis.

In the nurserymen's division, there was a goodly display, but the absence of Mr. B. S. Williams from the competition lessened the number of plants. The best sixteen specimens came from Mr. J. Cypher, Cheltenham, who had well-grown and bloomed specimens of the following:—Cattleya Mossice, C. Mendelii, C. Warneri, C. Mossize esuperba, C. superba splendens, very fine in colour; and C. Gaskelliana, Cypripedium Laurencianum, and C. nivenun, Dendrobium thyrsiforum, very fine; D. Jamesianum, &c.; 2d, Mr. H. James, nurseryman, Lower Norwood, whose leading examples were Cattleya Mendelii, C. Mossize deiteata, Leelia purpurata, Epidendrum vitellinum, Masdevallia Veitchii, &c.; 3d, Messrs, Heath & Son, nurserymen, Cheltenham. Mr. H. James was placed 1st with teo Orchids, staging Oncidiom Marshallianum, very fine; Odontoglossum excillarium, O. Pescatorei, with a very fine branched spike; Cattleya Mossize, Cypripedium barbatum grandilforum, Leelia purpurea, and Vanda correlescens Jamesianum, with flowers much smaller than those of the species; sepals and petals pure white, with a rich blue-purple lip, and protted plag in of hee taskes it a wariety of V. corrulescens; ad, Mr. J. Cypher, whose leading plants were Dendrobium thyrsiforum, D. nobile, D. Bensone, D. Wardianum, Cattleya Mossize, C. marginata, &c.; 3d, Messrs, Ann Gress-Mossise, C. marginata, &c.; 3d

Messrs. Heath & Son.

STOVE AND GREENHOUSE PLANTS,—In the amateurs' class the best eight plants came from S. Schloss, Esq., Bowden (Mr. C. Paul, gr.), who had two large specimen Azaleas, one red the other white; a very fine specimen Stephanotis floribunda, not sufficiently in flower; the finest Anthrium Scherzerianum in the show; Bongain-villea glabra, Clerodendron Balfourianum, and Erica ventricosa; ad, the Earl of Wilton, Mr. Baillie's leading plants being Allamanda grandiflora, Darwinia tulipifera, D. Hookert, Bongainvillea glabra, Azalea Roi Leopold, and Erica perspicua nana, &c.; 3d, Mr. E. Cliffe-Glover, Leck (Mr. C. Roberts, gr.). In the nurserymen's class for ten plants Mr. Cypher, who of late years has had it pretty much bis own way at Manchester, had some very hine fresh specimens of high-class quality, including a fine white Azalea magnifera, a splendid example of Erica depressa, E. Cavendishiana, Azalea Extranei, Franciscae actimia, Dracophyllum grande, Authrium Scherzerianum, Darwinia tulipifera, very fine; and Aphelexis macrantha purprene. 2d, Mr. H. James, whose leading plants were Azalea tyeryana, Erica coccinea minor, Erica ventricosa magnifica, E. Cavendishiana, E. ventricosa bicolor, Clerodendron Ballourianum, Pimelea decussata, and Darwinia tulipifera. 3d, Mr. F. Turdgey, Waltham Cross. Waltham Cross.

Waltham Cross.

AZALEAS.—These were fairly numerous, and on the whole pretty good, and were of excellent service in the annexe, where they formed striking patches of colour. In the annexers division Mr. John Rylands, Stretford (Mr. Geo. Roberts, gr.) was 1st, his best plants being Glory of Sunninghill, Duc de Nassau, Roi d'Hollande and triumphans. 2d. Mr. J. Broome, who had Perryana, Charmer, Roi d'Hollande, and Comte de Flandre, as the best in his group. 3d. Mr. S. Schloss. In the nurserymen's class for eight specimens, Mr. C. Turner, Royal Nursery, Slough, had a very good to indeed, rather above medium size and finely bloomed, viz.:—Charmer, Duc de Nassan, Duchesse A. de Nassas, Souvenir de Prince Albert, Mons. Cuvellier, Reine des Fleurs, &c. There was no other competitor in this class.

ERICAS.—These were better shown by nurserymen than by amateurs. Mr. Cypher had the best six, nice fresh plants, consisting of E. Caveodishaoa, E. affinis, E. tricelor rosea, E. ventricosa coccinea minor, E. ventricosa magnifica, and E. ventricosa rosea. Mr. Tudgey was placed ad, having some good specimens, ventricosa magnifica, and grandiflora, adpressa, and eximia superba being the best.

ROSES.—As both Mr. Turner and Mesars. Paul & Son, of Cheshunt, were exhibiting on this occasion, a good show of these resulted. With twenty plants in pots not more than 9 inches across, Mr. Turner was well ahead with excellent specimens of Camille Bernardin, Madame Eugène Verdier, Céline Forestier, Viconate Vigier, Charles Darwin, Juno, Edouard Morren, Marie Bammann, La France, Marquis de Castellane, J. S. Mill, Duchesse de Vallombrosa, Comtesse de Sereneyi, &c. 2d, Messrs, G. & W. Yates, nurserymen, Marchester; 3d, E. Tudgey. In the class for a group of thirty Roses in any sized pots, Messrs, Faul & Son, Old Nurseries, Cheshunt, were placed 1st with an excellent

lot of plants that formed a most valuable contribution to the show. The leading varieties were J. S. Mill, Madame Victor Verdier, Charles Lawson, very fine; Madame Clemence Joigneaux, Beauty of Waltham, Madame Lacharme, Edouard Morren, Villeret de Joyeuse, Catherine Soupert, Ulrich Brunner, Souvenir de Madame Berthier, a dark Victor Verdier, Marie Van Houtte, François Michelon, &c.; 2d, Messrs. G. & W. Yates; 3d, Mr. E. Tudgey. In the amateurs' class for six Roses in pots Mr. John Heywood, Streffurd, was 1st; Roses in pots Mr. John Heywood, Streffurd, was 1st; Marie Browner, Heaton Mersey, 2d. As might be expected these fell much behind the nurserymen's plants.

CLEMATIS.—Messrs. R. Smith & Co., St. Johu's Nursery, Worcester, were the ouly exhibitors of these, and they must be congratulated on the excellent specimens produced. The leading varieties were Princess of Wales, Madame Van Houtte, Sensation, Lord Neville, Fairy Queen, Madame Van Houtte, Sensation, Lord Neville, Fairy Queen, Lady Caroline Neville, Grande Duchesse, of Miles and Markette and Markette of the Amateurs' class for six Clematis Mr. J. Dickins was rst, and Mr. J. Blewwood 26. Heywood 2d,

SONERILAS.—This interesting class brought some very fine and well grown plants, but only partially in flower. Mr. J. Broome had some well grown specimens in the class for six, staging margaritacea, Hendersoni, argentea, Rowley, Marmorata, and Nelly; 2d, Mr. S. Bairlein, who had a very fine pan of S. margaritacea.

argentea, Rowley, Marmorata, and Nelly; 2d, Mr. S. Bairlein, who had a very fine pan of S. margaritacea.

MISCELLANEOUS FLOWERING PLANTS. — Of these Calecolarias were an interesting show, and the leading plants were very good, being clean and well grown. Mr. A. Schill had the best ten plants among anateurs, Mr. Tootal was 2d, and Mr. J. M. Hetherington 3d, in the nurserymen's class for twelve plants Messrs. R. P. Ker & Son, nurserymen, Liverpool, were a long way rst with well grown plants of a good strain. Mr. Turner took down to Manchester eight specimen show, and the same number of fancy Pelargoniums, and consequently had it his own way, though Mr. C. Rylance had some excellent plants also. Mr. Turner's eight show comerised Amethyst, Illuminator, Prince of Prussia, Prince Leopold, Kingston Beauty, Duchess of Bedford, and two others; 2d, Mr. C. Rylance. Leopold, Kingston Eeatty, Duchess of Bedford, and two others; 2d, Mr. Rylance. Mr. Turner's eight fancies consisted of Mrs. Pottle, Fanny Gair, East Lynne, Lady Carington, Electric Light, Mr. Hart, Prince Teck, and Lady Harvey; 2d, Mr. C. Rylance. In the amateurs' division for six show Pelargoniums, Mr. Bridge, Roly, Liverpool, was 1st, with good plants of Volonté Nationale, Trnomphe de St. Mande, Albina, Duchess of Edinburgh, Mrs. Ashby, and Royalty; 2d, Mr. T. Dickens. No fancy Pelargoniums were shown in this division, but D. Adamson, Esq. Didshury, had the best six zonais; Mr. J. Silkenstalt being 2d. In the nurserymen's class Mr. C. Rylance had eight excellent specimen zonais, well grown and bloomed; Messrs. R. Fleming & Sons, Liverpool, being 2d. Mr. C. Flylance was the only exhibitor of eight zonal Pelargonium, start shown in this division, but D. Adamson, Esq. Didshury, had the best six zonais; Mr. J. Silkenstalt being 2d. In the nurserymen's class Mr. C. Rylance had eight excellent specimen zonais, well considering the lateues of the season. Glovinas were a charming feature; the leading collection of ten plants comprised large and finely grown specimens

HARDY PLANTS.—As usual, these were numerous and good; but we missed Mr. W. Brockbank's choice collection, as he has such a wealth of these interesting plauts. The best thirty hardy herbaceous and alpine plants came from Mr. T. Dickeus, Higher Broughton (Mr. W. Cr. Bennett, gr.), who had well grown and alpine plants came from Mr. T. Dickeus, Higher Broughton (Mr. W. Cr. Bennett, gr.), who had well grown and state of the plants of the plants came from Mr. T. Dickeus, Higher Broughton (Mr. W. Cr. Bennett, gr.), who had well grown and state of the plants came from the plant

FOLIAGED PLANTS.—Some truly magnificent examples of these were shown, and they greatly helped the striking appearance the exhibition-house presented. The best ten came from Mr. John Rylands, and consisted of stratug appearance the exhibition-house presented. He best ten came from Mr. John Rylands, and consisted of Prichardia pacifica, Areca lutescens, Latania borbonica, Adocasia Lowii, Cycas revescens, Latania borbonica, Adocasia Lowii, Cycas revescens, Latania borbonica, Crotra de Meismanni, and C. Williamsii, ampestirio, Crotra de Meismanni, and C. Williamsii, S. Schloss, sie and finely developed; ad, Mr. S. Schloss, sie and finely ervoluta, Gleichenia Mendelli, very fine; Anthurium Veitchii, A crystalliaum, Cocos Weddeliana, &c. ; 3d, Mr. E. C. Glover. In the nurserymen's class for cight plants Mr. J. Cypher staged a fine lot, Consisting of Cycas orientalls, C. circinalis, C. revoluta, Tbrinax elegans, Dracena hybrida, Latania borbonica, Kentia canterburyana, and Croton Williamsii; 2d, Mr. E. Tudgey, with fine examples of Cycas revoluta, C. circinalis, Kentia canterburyana, and Croton Williamsii; 2d, Mr. E. Tudgey, with fine examples of Cycas revoluta, C. circinalis, Kentia canterburyana, and Croton Williamsii; 2d, Mr. H. Janes,

FERNS.—In the class or eight exotic Ferns, Mr. S. Schloss was 1st with a grand lot, all of great size and fanely grown; they consisted of Gleichenia flabellata, G. rugestris glauescens, G. spelmece, G. rugestris, glauescens, G. spelmece, G. rugestris, etc. and a discovered per special spelment of the state of the spelment G. Mr. E. C. Glover. Alt. J. Rylands had the best six Adianum, decorum, primatum, uteam, cuncatum, gracillinium, decorum, primatum, and Farleynes; Mr. J. G. Silkenstadt was 2d; and Mr. Hodgkinson 3d—both with good specimens. FERNS.-In the class or eight exotic Ferns, Mr. S.

DRACENAS.—Mr. J. Broome was placed 1st with six showy, well-defined plants of Youngl, Shepperdi, Baptisti, anerleyensis, Goldicaua, and Weismanni; 2d. Mr. S. Baerlein, Didsbury (Mr. W. Williams, gr.), who had Lindeni (very fine), indivisa, anabliis, Rossi, and Salmoneana; 3d. Mr. Sykes, Stockport. In the unreserymen's class for twelve varieties, Messrs. R. P. Ker & Son, Liverpool, staged a very fine lot, prominent being Macleayi, Rebeccee, Robinsoniana, Mooreana, albo-marginata, Gladstonei, Goldienas, Salmoneac, recurva, Mrs. Frenke, Baptisti, and Lindeni; 2d. Mr., I. James, with fine plants of Shepperdi, Lindeni, Fraseri, nycterinia, terminalis alba, amabilis, and Gladstonei.

CROTONS. — In the nurserymen's class for twelve varieties, Messrs. R. P. Ker & Son were placed 1st with superb examples of equal size, finely grown and coloured, comprising Weismanni, interruptus aurens, Princess, Queen Victoria, Conntess, Baroness Rothschild, Hawkeri, Evansianus, Warreni, and Williamsi, No other exhibitor competed. In the annateurs' class for six plants, Mr. J. Broome was 1st, with good specimens of Andreanus, Williamsii, Prince of Wales, Queen Victoria, Evansianus, and Burtonii, all finely grown and coloured; 2d, Mr. E. C. Glover, with Queen Victoria, Baroness Rothschild, pictus, and Johannis as his best.

PITCHER PLANTS.—These were a very fine feature, and Mr. J. Broome was awarded the 1st prize for a very fine collection of ten, consisting of Nepenthers Rafflesiana, Henryana, and Mastersiana (specially fine), Wilhiamsii, Kennedyana; Sarracenia Mitchelliaua, Maddisoniana, Unrupurea, flavopicta, and Drosera capensis; 2d, Mr. O. Schneider, with fine examples of Nepenthes Hookeriana, N. Dominiana, Sarracenias Mitchelliana, Chelsoni, illustris, purpurea, and Swaniana; 3d, Mr. James Fildes, Charlton.

NEW PLANTS.—The best twelve in the nurserymen's division came from Messrs. R. P. Ker & Son, and consisted of Areca Verschaffelti, Lienala grandis, Ficus elastica albo var., Pitchardia Vuylstekeana, Schismatoglottis Roebelinii, Anthurium ferrierense. Davallia Tyermanni, Croton Countess, and Croton Flambeau, as the best marked among them; ed., Mr. II. James, who had Lealia purpurata var. virginalis, Nepenthes Mastersiana, Odontoglossum polyanthum, Anthurium ferrierense, &c. In the amateurs' class for six new and rare plants, Mr. J. Broome was 1st, with Nepenthes bicalcarata, with twelve very fine pitchers; N. robusta, Sarracenia Atkinsoniana, S. Swanaana, Anthurium Andreanaum, and Draczena Lindeni.

TREE AND OTHER FERNS.—Tree Ferns were shown in pairs and their great size helped to swell the effect in the annexe. Here also were the collections of hardy Ferns, all, as is usual at Manchester, well cultivated. There was but one collection of six filmy Ferns, that from Mr. John Rylands; it consisted of very fine examples of the following:—Todea superba, T. pellucida, Hymenophyllum demissum, H. flexuosum, and Trichomanes radicans.

PALMS AND YUCCAS.—The best four Palms came from Mr. S. Baerlein, who had large examples of Livistonia altissima, Cocos Weddelliana, Geonoma Schottiana, and Kentia australis; 2d, the Earl of Wilton. Mr. John Rylands had the best four Yuccas, staging three plants of aloifolia variegata and one of quadricolor; Mr. Jeroome was 2d, with two of the former and two of

TABLE PLANTS.—These were represented by the young, light, and graceful plants one usually sees, and they were both numerous and good.

GROUPS ARRANGED FOR EFFECT.—These were objects of considerable interest and decorative value in the annexe. That arranged by Messrs. R. P. Ker & Co.,

covering 450 superficial feet, was of a very high order of merit; scarcely any flowering plants were used, but the rich colours of many of the elegant Crotons employed gave great life to the arrangement. It was one of the most deservedly admired of the objects in the show. Messrs. W. & J. Birkenbead, of Sale, stood next in order with a group formed wholly of Ferns. In the annateurs' class the groups occupyied goo feet, and here Mr. Smith stup for Mr. Rylands a charming piece of decorative art, which was some way ahead of the others. Mr. S. C. Glover was 2d, and Mr. S. Schloss 3d.

art, which was some way anead of the others. Mr. S. C. Glover was ad, and Mr. S. Schloss 3d.

FRUIT.—Some very good fruit was staged on this occasion. The best collection of eight dishes came from gr. In the stage of the stage

ASPARAGUS.—Special prizes were offered for hitty heads in a bundle, the best coming from Mr. G. T. Miles, Mr. Thomas Pitt, Berry Hill, being 2d, and Mr. G. Pollock 3d.

BOUQUETS.—In the nurserymen's class for three bouquets Mr. J. Cypher was 1st, Mr. J. R. Chard, Clapham Common, 2d, and equal 3d prizes were awarded to Messrs, Sherratt & Pointon, of Congleton, and Mr. T. Walkden, S.Je. In the amateur class Mr. R. P. Gill, Ashton-on-Mersey (Mr. W. Flant, gr.), was 1st, with two bouquets, Mr. J. Heywood being 2d.

two bouquets, Mr. J. Heywood being 2d.

MISCELLANEOUS PLANTS.—Several fine and interesting groups of plants were staged not for competition. In the exhibition-house was a very extensive collection from Mr. B. S. Williams, Victoria Nursery, Holloway, containing a great deal of novelty of a very extensive chiectory of the control of the MISCELLANEOUS PLANTS .- Several fine and inter-

The Royal National Tulip: May 3t.—The annual exhibition of this Society took place at the Botanical Gardens, Manchester, in connection with the great Whitsun Show, Mr. Findlay providing accommondation of the state of the season, indeed south of the Treut the Tulips were all over, while at Stakehill Mr. Barlow's fine collection was not at its best. As far north as the North Riding, Mr. Horner's flowers were nearly over, though he was able to bring a twelve of such fine quality as to win for him the premier prize. At Wolverhampton Mr. Thurstan was about at his best. It is not, therefore, to be wondered at that the exhibition was thinner than usual. Further, the flowers were seen to disadvantage, for in order to provide staging space some of the plants had to be temporarily removed, so they became scattered, and it is a little difficult to gather up all the details of the competition. competition.

In the leading class for twelve Tulips, two feathered and two flamed in each class, the Rev. F. D. Horner

was placed 1st, with feathered bizurres, Royal Sovereign and Garland; flamed do., Omar Pacha and Dr. Hardy; feathered roses, Industry and Heroine; flamed do., Rose Celestial and Annie MacGregor; feathered byblœmens, May Queen and Mrs. Cooper; flamed byblœmens, Talisman and Duchess of Sutherland. 2d, Mr. James Thurstan, Wolverhampton, with feathered bizarres, Sulphur and seedling; flamed bizarres, Sir J. Paxton and Dr. Hardy; feathered byblœmens, Adonis and seedling; flamed byblœmens, Talisman and Duchess of Sutherland; feathered rose, Mrs. Thurstan, a seedling raised by Mr. Thurstan—a perfect masterpiece among feathered roses, with a rich scarlet-rose and finely pencilled feather on a white ground: this was awarded a First-class Certificate of Merit, which it thoroughly well deserved: and Heroine. 3d, Mr. James Knowles, Ashton; j.th, Mr. John Moore.

certificate of sterrit, which it introducingly wed reserved; and Heroine. 3d, Mr. James Knowles, Ashton; 4th, Mr. John Moore.

In the class of the stress of

week. Mabel; and byblemen, Lord Denman. 2d, Mr. Lanner. Thurstan, with bizarre, Sir J. Paxton; rose, Mabel; and byblemen, Talisman. 3d, Mr. J. Kitchen, with bizarre, Dr. Hardy; rose, Aglaia; and byblemen, Talisman.

Class 6 was for one feathered and one flamed flower, and here Mr. Prescott was 1st with feathered bizarre, Lord Lilford; and flamed bizarre, Sir J. Paxton. 2d, H. Fearnley, with flamed bizarre, Dr. Hardy; and a feathered rose, unknown. This class was for maiden growers only, and two prizes only were awarded.

Class 7 was for one feathered and one flamed Tulip in each class, and here the competition was very brisk, Mr. H. Housley being placed 1st, with bizarres, Sir. J. Paxton flamed, and Masterpiece feathered. 2d, Mr. J. Moore, with flamed bizarre, Dr. Hardy, and feathered rose, Heroine. 3d, Mr. W. Dymick, with flamed bizarre Dr. Hardy, and feathered rose, seedling.

Then came class 8 for the cut blooms io each of the six classes, and a great number of flowers were staged. We take the feathered flowers first, and here the properties of the six classes, and a great number of flowers were staged. We take the feathered flowers first, and here the properties of the six flowers first, and here the flowers, the flowers first, and here the flowers first, with flowers, the flowers first, and here the flowers, the flowers first, and here the flowers first, and here the flowers first, with flowers, the flowers first, with flowers, thands, and here the flowers first, with flowers, the flowers first

Great Flower Show at St, James' Hall, Manchester: May 30 to Yune 4.—This was an exhibition of considerable extent, completely filling the immense Concert Hall in Oxford Street. It differed from the show at the Botanical Gardens in that it was made up to a large extent of hardy Rhododendrons and Anerican Azaleas. These were used in immense quantities, particularly the former, and they were arranged with skill and taste by Mr. J. Forsyth Johnson, who had entire charge of the show. A series of sloping stages was placed all round the immense ball, varying in size and height, and on these the plants—all in Bower—were staged, backed by coniferous plants. There was an immense bank in front of the spacious crelestra, one of the best things the fluid adherent converted and with a fill of about 2 feet to the floor, which was covered with turl. This bank was surmouted with hurge specimen Rhododendrons and Ghent Azaleas, full of bloom. About this spacious hall were large plants of Unpressus Lawsoniana and Rhododendrons of enormous size, also covered with flower; and there were also huge pyramids of Rhododendrons and Azaleas, with here and there a flat stage, on which was placed a number of Tea Roses in pots in bloom. So judiciously were the various groups distributed that from every point there was an almost uninterrupted view across the hall. The plaots were supplied by Messrs. Fisher, Son & Sibray, Sheffield; John Hooley, Cheadle; Isaae Buck, Bowdon; C. Noyes, Stockport; John Taylor, Ireland; Clibran & Son, Altincham; and the Liverpool Horticultural Company. It was understood that they were all purchased popularis, including 150 Roses, 80 Rhododendrons, 69 Azaleas, and acoo Panaies. Mir Johnson deserves high praise for his effective arrangement.

pleyed peoc plants, including 1500 Roses, 800 knowledendrons, 650 Azaleas, and eaco Paneise. Mr. Johnson deserves high praise for his effective arrangement.

Bath and West of England Agricultural (Maidstone): **Yinte 2—6.**—The horticultural attractions of such an important agricultural gathering as that which has just been held in the control of the garden, although wanting in variety and abundance, was nevertheless the centre of an admiring crowd of visitors, who were lavish in their praise of the Orchids that had been kindly sent by a few noted growers. These flowering plants possessed the charm of being more than novelites to most of the yeomen and their wives and daughters, and enthusiastic indeed were their terms of admiration in wittessing them for the first time. Next to these the capital display of garden vegetables found a very appreciative crowd of beholders among the same people, and with country folk generally, possessing, as most of them do, a practical acquaintance with the different points that go to make good specimens in this class. The indefatigable promoter of the horticultural section was the paint to secure the co-operation of gentlemen and their gardeners resident in the country of Kent, although it must be stated, that the finest group of Orchids came from Dorset, and a few other attractive plants from London and Worcester. In addition to the display of plants, a special feature was a mound covered with rockwock, arranged in horizontal layers, which contained many interesting fossils embedded in the limestone locally known as Kentish Rag, supplied by Messrs. W. H. Bensted & Son, from the famous Iguanodon Quarry, near Maidstone. The mound was only partially planted with Ferns, and with a few Japanese Maplesthat the New Bulb Company, Colchester, placed at Mr. Boscawen's disposal. The Orchids, formi

by the extreme narrowness of the show table—space in the right place being the chief want of the arrangements, the sides of the tent having but few productions, whilst the centre table was an assemblage of closely packed plants, out of which nothing could be well seen, with the exception of the tall Palms. Nr. Geo. Bunyard, The Nurseries, Maidstone, contributed a mixed group, consisting of Dracena australis, Chameropes excelsa, small flowering plants of show, fancy, and decorative Pelargoniums, Ferns, Prunns Pissardi, and a large triangular-shaped mass of flowering plants, such as Rhododendroos, Azaleas, and other shrubs, which served to separate the entrance from the exit doors. From the same there came Ferns in considerable numbers, for planting on the rockwork. A prize (a cup) for the best flowered Orchid was awarded for a Vanda snavis, with five spikes, shown by Mr. Haycock, gr. to Roger Leigh, Esq., Barham Court, the plant was very beautifully in flower, although not being remarkable for large size. Pollage plants were contributed by Mrs. Spottiswood, H. A. Brassey, Esq., Ashley Dodd, Esq., and by Mr. G. Eunyard. These having been placed on the accuracy of the middle able. The same contributes sent a few plants are retributed by drag ones. There were good-sized Palmain vaniety, Cycads, Anthuriums, Allocasias, Sanseviera sebrina. The same contributors sent a few plants of a large size of Statice Holfordi, Clerodendron fallax, Erica Caventishaum, and a few other varieties of Heaths. Some large specimens of white Marguerites, full of bloom, and measuring a feet or more in diameter, were sent by Mr. Waterman; several Clematises and three small hampers of hardy plants in bloom came from Messrs. R. Smith & Co., nurserymen, Worcester. For some handsome plants of Adiantum farleyense in big pots, Mr. Mackensie, gr. to the trustees, Linton Park, was awarded a 1st prize.

For a Kent show—a county boasting of its capabilities for advanced fruit culture—the meagre display observed was the more to be remarked, Mr. Hayco

to the first-named.

President Strawberries and a moderately sized Smooth Cayenne Pine-apple, a number of Iruits of Nelons-Scarlet Premier and Best of All—came from Mr. McKenzie, Linton.

The horticultural building and heating firms were present in considerable numbers—their motels of planthouses, frames, wall-cases, Tomato-frames, handlights, with various devices more or less simple for opening with various devices more or less simple for opening front or top lights, and for propping up frame-lights, made an imposing addition to the show. The larger exhibitors were Mesrs. Wright & Holmes, Mesrs. Edgcumbe Rendle with samples of patent glazing. Mesrs. Richardson, Darlington, bad a house in the Queen Anne fashion of glazing—at least over the front over them and at the ends of house in the spandril is filled with small panes inserted in rather heavy sash-work.

Variorum.

CLIMBING PALMS .- The banks here begin to be most markedly festooned and trellised with a curious Calamus, or climbing Palm, the fronds of which are prolonged into a bare creeping stalk, furnished with curiously reversed hooks, so that once the frond falls against a branch it attaches itself securely by means of these recurved thorns, and thus climbs higher and higher, often fringing the top of the forest with graceful beads of swaying fronds, which with their waviog whip-like terminations point straight skywards, as if seeking for greater heights to climb. The motto of this Pulm should certainly be "Excelsior," and it might also be taken as a vegetable type of ambition, Beginning in the lowliest form, the young Palm looks like a broad-leaved Bamboo with divided leaves suggesting strongly its poorer and simpler relations; it soon begins to aspire, and from being first a groundgrowing shrub, it throws out a long flexible stem, rising far ahove the first humble set of fronds, and by means of its sharp hooks making use of every support in its way to climb higher and higher. Soon the leaves or fronds become more elegant. They split up from their previous bifid condition into many fla-

ments, and at length the once lowly, feeble thing, by making use of everything that comes in its way and can give it a lift, looks proudly forth from the top of some giant tree, and for a while content with the attainment of its ambition, has time to pause and throw out its flowers, which turn to bunches of scarlet Dates. Its fruit has a thin, sweetish pulp around it, which seems harmless, at any rate to man, but I have never noticed any bird or beast devouring it. The colour of the leaves is a yellow-green, and it forms a decidedly bright addition to the river landscapes. "The River Congo," by H. H. Johnston, F.Z.S.

ANTS IN HOUSES .- Two parts of the house in which I am now living were suddenly discovered to be infested with these little animals, but great pests. I amused myself two or three hours for several nights by catching them with a small brush, dipping the same in water in a pudding-basin with a spirit-lamp under to keep the water as hot as possible. Hundreds and hundreds I caught and scalded in this way, but still the enemy did not decrease. When, one night, my knees having had long enough acquaintance with the floor, a sudden thought came over me, or, as some would say, a spirit whispered to me, "Why not try Keating's powder?" The powder was obtained from headquarters. The enemy's camp was reached as near as possible, and was well peppered, as also were their meeting-places and promenades. After a couple of days' enjoyment-or otherwise-of the powder, the enemy was discovered as little black specks distributed over the field of battle as thickly as the Arabs we were lately told of. My enemies I swept up and cremated, but did not urn the remains. earned the pleasure of getting rid of them, for now none are to be seen. Y., in the "Builder,"

The Meather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON,

DAY.	BARON	IETER.	т	EMP T	ERAT HE A	USE IR,	OF	duc fr Glai Tab	rome- il De- tions om sher's les 6th ition.	Wind,	4
Month and Day.	Mean Reading Reduced to 32° Fahr.	Departure from Average of 18 years.	Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 50 years.	Dew Point.	Degree of Humidity. Sat. = roo.	Average Direction.	RAINFALL
May	In.	In.							0		In.
29	23.99	+0,21	53·S	45·S	8.0	48.S	- 7.3	41.4	78	E.	0.00
30	29.85	+0.06	68.5	43.8	24.7	\$5.1	- 0.9	46.5	73	E.: N.E	0 00
31	29,89	+0.10	58.2	42.5	15.7	50.2	— 6.1	44.2	81	E : N.E	0.00
June	29.69	-0.11	65.0	46 I	199	54.0	- 25	49.8	85	N.; S.W	0.00
2	29.45	-0.35	69.0	46.c	23.0	56,0	- 0.7	47.6	74 }	E. : S.S.E.	0.00
3	29.42	-a.38	6r.8	49.0	12.8	55.0	_ r.9	47.0	75	E.: E.N.E	0.00
4	29.60	-0 20	ς6.o	50 0	6.0	52.3	- 4.8	49.1	89	W.	0.05
Mean	29.70	-0.10	61.9	46.2	15.7	53.0	— — 35	46.5	79	E.	0.0

May 29.—Fine day; dull. Fine night; clear.

20.—Fine bright day and night.

21. The bright day and night.

21. The day and night.

22. The day; cocasional gleams of sunshine. Fine clear night.

23.—Dull day and night; strong wind.

4.—Fog all the morning. Dull day. Wet night.

LONDON: Atmospheric Pressure .- During the week ending May 31, the reading of the barometer at the level of the sea increased from 30.09 inches at the beginning of the week to 30.43 inches by midought on the 26th, decreased to 30.24 inches by 3 P.M. on the 27th, increased to 30.26 inches by 9 A.M., on the 27th, increased to 30.26 inches by 9 A.M., decreased to 30.22 inches by 3 P.M., and increased to 30.26 inches by midnight on the 28th, decreased to 29.99 inches by 3 P.M. on the 30th, increased to 30.07 inches by 9 A.M. on the 3tst, decreased to 30.04 inches by 3 P.M. on the same day, and was 30.11 inches by the end of the week.

The mean reading of the barometer for the week was 30.17 inches, being 0.02 inch higher than last week, and 0.22 inch above the average of the week.

Temberature.— The highest temperature in the

week, and 0.22 inch above the average of the week. Temperature. — The highest temperature in the shade in the week was 71°, 3, on the 27th; the highest on the 29th was 53°.5. The mean of the seven high day temperatures was 61°.7.

The lowest temperature was 42°.5, on the 27th and 3tst; on the 25th the lowest temperature was 49°.5.

The mean of the seven low night temperatures was

The mean of the seven low night temperatures was 44-9.

The greatest range of temperature in one day was 28°.8, on the 27th; the smallest was 7°.1, on the 25th. The mean of the seven daily ranges was 16°.8.

The mean temperatures were—on the 25th, 52°.2; on the 25th, 56°.6; on the 25th, 56°.5; on the 27th, 56°; on the 25th, 48°.7; on the 29th, 48°.5; on the 30th, 45°.1; and on the 31st, 50°.2; and these were all below their averages (excepting the 26th and 27th, which were 1°.4 and 0°.6 above) by 2°.8, 6°.9, 7°.3, 0°.9, and 6°.1 respectively.

6°.1 respectively.

The highest reading of a thermometer with blackended bulb in vacuo placed in the full rays of the sun was 129.5, on the 26th. The mean of the seven readings was 98.1.

The lowest reading of a minimum thermometer

with its bulb placed on grass was 34°,5, on the 27th and 31st. The mean of the seven readings was 37°.1.

Rain.—No rain fell during the week.

ENGLAND: Temperature,—During the week ending May 3t the highest temperatures were 80° at Nottingham, 78°.5 at Bradford, 75°.1 at Wolverhampton; the highest at Sunderland was 60°, at Hull 61, and Sheffield 64°. The general mean was 60°.2. The lowest temperatures in the week were 34°.8 at Cambridge, 37° at Hull, 37°.2 at Nottingham; the lowest at Plymouth was 46°.3, at Truc 43°, and at Blackheath 42°.5. The general mean was 40°.4. The greatest ranges were 42°.8 at Nottingham, 37°.1 at Wolverhampton, 36°.7 at Bradford; the smallest ranges were 18° at Sunderland, 23° at Sheffeld, and 24° at Leicester and Hull. The general mean was 28°.8.

The mean of the seven high day temperatures was

The mean of the seven high day temperatures was highest at Nottingham, 67°, at Truro 64°.9, at Plymouth 64°.5; and was lowest at Sunderland, 53°.4, at Sheffield 57°.4, at Hull 58°.7. The general mean

was 61°.3.

The mean of the seven low night temperatures was highest at Plymouth, 50°.5, at Truro 40°.3, Brighton 40°.6; and was lowest at Cambridge 40°.3; at Wolverhampton 41°.6, at Hull 42°. The general

Wolverhampton 41.6, at 11un 42. The general mean was 44°.6.

The mean daily range was greatest at Nottingham, 23°, at Cambridge 22°.7, at Wolverhampton 20°.5; and was least at Sunderland, 8°, at Sheffield 12°.8, at Plymouth 14°. The general mean was 16°.7.

The mean temperature was highest at Plymouth, 55°.8, at Truro 55°.4, at Nottingham 53°.8; and was towest at Sunderland, 47°.5, at Hull 48°.6, and at Sheffield and Bolton 49°.3. The general mean was c1°.2.

51 3. — The largest fall was 0.24 inch, at Plymouth, 0.16 inch at Bristol. No rain fell at Truro, Brighton, Blackheath, Leicester, Cambridge, Wolverhampton, Nottingham, Sheffield, Liverpool, Bolton, Hull, Bradford, or Sunderland.

SCOTLAND: Temperature.—During the week ending May 31, the highest temperature was 70°, at Paisley; at Aberdeen the highest was 58°.1. The

general mean was 63°.2.

The lowest temperature in the week was 31°

at Perth; at Leith the lowest temperature was 41°,5.
The general mean was 38°,1.
The mean temperature was highest at Paisley,
54°,1; and lowest at Leith, 48°,5. The general 54.1; and lowest at Lettin, 40.5. Incan was 50°.4.

No rain fell during the week at any station.

JAMES GLAISHER, F.R.S.

Answers to Correspondents.

DOUBLE-FLOWERED APPLE: J. F. The production of such flowers on the midsummer shoots is not unusual, Generally—as in your case—the fruit is not formed. We have figured illustrations on previous occasions.

DOUBLING OF NARCISSUS .- Mr. Brockbank sends specimens of N. poeticus quite similar to those forwarded last week by Rev. C. W. Dod, whose opinion he

ERRATUM: ISOSOMA.—In the account of Mr. McLach-lan's communication to the last meeting of the Scientific Committee an error occurs which reverses the sense of what was really said. Instead of the words, "it preved upon the Isosoma," read that "it was preyed on by the Isosoma."

FIRE CLEANSING CLOTH: Charles Palmer. It must surely have been made of Asbestos for travellers' yarn?], and not of the fibrous roots of a grass, which would not stand the process. The account is given at length in another column, but we decline to guarantee the correctuess of the statement.

GLOXINIAS: B. Ashlon. Very fair in quality, but no better than should now be obtained from an ordinary packet of seeds.

LEEKS: Strebor. We do not remember to have seen any such instance before, and shall be glad of further information. Was the seed grown by yourself, or bought in?

Mushrooms: W. G. You had better read Mr. Wright's Mushrooms for the Million (171, Fleet Street, E.C.),

and then decide for yourself as to whether you are likely to succeed. Information on all the points you enquire about is given in this book.

likely to succeed. Information on all the points you enquire about is given in this book.

NAMES OF PLANTS: W. A. C. 1, Anthoxathum odoratum; 2 and 3, Alopecurus pratensis; 4, Aira crespitosa; 5, Poa pratensis; 6, Bromus asper; 7, Avena flavescens,—A. P. Ledum palustre,—E. M. C. Pyrus Sorbus, the true Service tree.—W. C., Wepbridge, Claytonia virginica.—R. A. D. Claytonia virginica.—R. A. D. Claytonia virginica.—R. B. G. 1, Siphocampylus bicolor; 2, Listera ovata; 3, Orchis biclia; 4, Helleborus viridis; 5, Polemonium ceruleum.—D. Dowdetwell. 1, Capsella Bursa-pastoris; 4, Stachys sylvatica; 5, Senchiera coronopus; 6, Glaucium Inteum.—H. T. D. Limanthes Douglasii.—G. Cred. An Oxalis, not recognised.—A. W. 1, Potentila funticosa; 2, Spirzea japonica; 3, Weigela rosea; 4, Ceanothus azureus var.—An A. W. 1, Potentila funticosa; 2, Spirzea japonica; 6, Tonto, Narcissus poeticus flore-plenona and Lea (Retinosorro chasses S. Suscinana and Lea (Re

TREES KILLED: F. Calver. Without seeing the trees in growth we cannot give a positive answer; but the appearances are quite consistent with the cause you mention, and so far as we can tell from the specimens sent there is no other.

CATALOGUES RECEIVED.

LUCOMBE, PINCE & Co., Exeter-Select List of Choice Plants.

Plants,
New Plant and Bulb Company, Colchester—North
American Plants, Lilies, Orchids, &c.
lreland & Thomson, Craigleith Nurseries, Edinburgh—Stove and Greenhouse Plants, &c.

COMMUNICATIONS RECEIVED.—S. & S.—H. W. W.—J. G. B.—B. & C.—W. C. C.—W. Calverwell—W. R. F.—J. Ham—S.—J. E. N. (c.i.—W. Calverwell—W. F.—J. F.—J. Ham—J. S.—H. V.—E. E. R.—W. N.—W. E.—T. C.—H. W. R. D.—D. T. F.—H. R.—R. McL.—J. W.—R. C.—J. B.—Messr, Rovelli.

Enquiries.

" He that questioneth much shall learn much."-BACON.

DIPLADENIA ILLUSTRIS.—This seems to have been introduced from Brazil about forty years ago. On looking over the lists of the leading nurserymen I cannot find it in any of them. If still in cultivation I shall be glad to know where plants of it may be bad. Ruby.

THE LOQUAT.—Can any of our readers give us authentic information of the ripening of the fruit of this plant (Eriobotrya japonica) in the open air in this

VALUATION OF NURSERY STOCK.—Can any one inform me the principle laid down in arriving at a fair and correct value of growing nursery stock? Should 1 be correct in taking stock to value throughout at usual trade prices? A. 7. (We believe it is usual to value at wholesale trade price, and then deduct 25 per cent, for immediate sale, ED.)

WORMS .- Is it true that when worms are unable to procure any moisture from garden soil, owing to drought, they draw the moisture from the roots of plants, causing the plants to wither? Mary W.

Markets.

COVENT GARDEN, June 5.

BUSINESS rather checked by the holidays. Supplies heavy. Strawberries lighter, at improved price. Peaches lower. James Webber, Wholesale Apple Market.

VEGSTASILES .- AVERAGE RETAIL PRICES

•

6

	s. d. s. d.	s. d. s.
	Artichokes, Globe,	Herbs, per bunch o 2- o
	per doz 3 0- 5 0	Horse Radish, bund. 3 o- 4
	Asparagus, English,	Lettuces, Cabbage,
ì.	per 100 2 0- 5 0	per dozen 16
	- French, bund 2 0	— Cos, each o 2
	Beans, French, p. 100 1 6	Mint, green, bunch o 6
	Beet, per doz 1 o	Mushrooms, p. baskt. 1 0- 2
	Cabbages, per doz 1 o	Onions, per bushel 7 0
	Carrots, per bun 0 4- 0 6	- Spring, per bun. o 6
	- New French, per	Parsley, per bunch o 4
	bunch 1 3	Peas, English, quart 2 6
,	Cauliflowers, Eog-	Radishes, per doz 1 6
	lish, dozea 2 o- 3 o Celery, per buadle 1 6- 2 6	Rhubarb, per bund. o 4- o Small salading, pun. o 4
	Cucumbers, each o 6- 1 o	Spinach, per bushel 2 6-
ı	Endive, French, per	Tomatos, per lb 2 o
	dozen 2 0	Turnips, per bun o 4-
	Garlic, per lb o 6	- New 1 3
	Carrey por 101	

POTATOS.—Keat Magnums, 100s. to 120s. perton; do., Regents, 100s. to 120s.; Champions, 70s. to 85s.—New—Jersey Kidneys, 12s. to 14s. per cwt.; Lisbon, 4s.; Malta, 4s.

	s. d. s. d.	s. d. s. d.
Apples, 1/2-sieve	30-50	Pine-apples, Eog., lb. 2 n- 3 o - St. Michael's, each 2 o- 5 o
Figs, per dozen	40-80	-St. Michael's, each 2 0 - 5 0
Grapes, per lb	20-50	Strawberries, per lb. 2 0- 5 0
Lemons, per case	10 0- 14 0	Peaches, per doz 4 0-12 0

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.									
s. d. s. d.	s, d, s, d								
Aralia Sieboldi, doz. 12 0-24 n	Fuchsias, per doz 6 o-12 c								
Arbor-vitæ (golden),	Heliotrope, doz 6 a 12 0								
per dozen 6 o-18 o	Hydrangea, per doz. 12 0-18 (
- (common), dozen 6 0-12 0	Lilium longiflorum,								
Begonias, per doz 6 o-12 o	per dozen30 0 48 0								
Calceolarias, per doz. 6 0-12 0	Marguerite Daisy,								
Cyperus, per dozen 4 0-12 0	per dozen 8 n 18 c								
Dracæna term. doz30 0-60 0	Mignoaette, per doz 4 p- 9 t								
 viridis, per doz12 0-24 n 	Myrtles, per doz 6 n-12								
Erica, various, doz.12 n.48 n	Palms in var., each 2 6-21								
Euonymus, various,	Pelargoniums (show)								
per dozen 9 0-18 0	per dozen 9 n-18								
Evergreens, in var.,	- scarlet, per doz . 4 0 12 1								
per doze 6 0-24 0	Petunizs, per dozen 6 0-12 1								
Ferns, in var., dozen 4 n-18 o	Rhodanthes, p. dozen 6 o- 9								
Ficus elastica, each 1 6- 7 o	Roses, each 2 0- 3								
Foliage Plants, vari-	Spiræa, per dozen 8 o-12								
ous, each 2 0-10 0	Spiraea palmata, doz. 18 o 30								
	_								

Abutilon, 12 bunches 20 - 40 o Anemones, 12 bunches 20 - 40 o Narciss, dbl., 12 bunches 20 - 40 o Narciss, dbl., 12 bunches 20 - 40 o Narciss, dbl., 12 bunches 20 - 40 o Nemophila, 12 bunches 20 o Nemophila, 12	Cut Flowers.—Average Wholesale Prices.										
Anemones, 22 bun 2 o-4 o Arum Lilies, 2 blms. 3 n-6 o Bouvarduas, per bun. 0 o-1 o Bouvarduas, per bun. 0 o-1 o Calcacdaria, 15 parys 10 o-1 o Sparys Calcacdaria, 15 parys 10 o-1 o Sparys Cornflower, 12 bun 2 o-4 o Sesbescholtria, 2 bun 3 o-6 o T bunches 6 o-12 o T bunches 6 o-12 o	s. d. s. d.	s, d, s. d.									
Anemones, 32 bun 2 o - 4 o Siogle, 12 bun 1 o - 2 o Nemophila, 12 buo. 1 o - 1 o Nemophila, 12 buo. 2 o - 0 Nemophila, 12 sprays o 6 - 1 o Nemophila, 12 sprays	Abutilon, 12 bunches 2 0- 4 0	Narciss., dbl., 12 bun. 3 0- 9 0									
Arum Lilies, ra blms. 3 n - 6 o Nemophila, ra buo. 1 n - 1 6 Bouvardias, per bun. n o - 1 b Pelargoniums, per 12 claceclaris, ir sprays 1 o - 1 6 Carnations, ra blms. 1 o - 3 o Cornflower, ra buo. 2 o - 4 o Pesopy, ra blooms 1 o - 2 o - 6 o _ ra buoches 6 o - 2 o bounds.		- Single, 12 bun 1 0- 2 0									
Bouvardias, per bun. n 9- 1 n Pelargoniums, per 12 calceolaria, 12 sprays 1 0- 1 6 carnations, 12 blms. 1 0- 3 0 Cornflower, 12 bun. 2 0- 4 0 9 Pæooy, 12 blooms . 1 0- 2 0 Eschscholizia, 12 bun. 3 0- 6 0 Pæooy, 12 blooms . 1 0- 2 0		Nemophila, 12 buo, 1 n- 1 6									
Carnations, 12 blms. 1 0- 3 0 Cornflower, 12 bua 2 0- 4 o Eschscholtzia, 12 bua. 3 0- 6 o — 12 buaches 6 0-12 o		Pelargoniums, per 12									
Cornflower, 12 bua 2 0 - 4 0 Pæony, 12 blooms 1 0 - 2 0 Eschscholtzia, 12 bua. 3 0 - 6 0 — 12 buaches 6 0 - 12 0	Calceolaria, 12 sprays 1 0- 1 6	sprays o 6- 1 o									
Eschscholtzia, 12 buo. 3 a- 6 a - 12 buoches 6 o-12 o	Carnations, 12 blms, 1 0- 3 0	- zonal, 12 sprays 0 4- 0 9									
	Cornflower, 12 bua 2 0- 4 0										
Enchange man don . on 6 a Polympthus va hun a on 2 o	Eschscholtzia, 12 buo. 3 o- 6 o										
	Eucharis, per doz 4 0- 6 0	Polyanthus, 12 bun, 2 0- 3 0									
Forget-me-not, 12 Primula double, bua. 1 o- 1 6											
bunches 2 o- 6 o Pyrethurm, 12 bun, 2 o- 6 n	bunches, 2 0- 6 0										
Gardenias, 12 blms 1 o- 3 o Ranunculus, 12 bun. 2 o- 4 o											
Heliotropes, 12 sp o 6- 1 o Rhodanthes, 12 bua. 6 n-12 o	Heliotropes, 12 sp o 6- 1 o										
Lapageria, white, 12 Roses (indoor), doz. 1 o- 4 n											
blooms 3 0- 6 0 - coloured, doz 2 n- 6 0											
- red, 12 blooms 1 o- 3 o Stephanotis, 12 spr. 2 6- 4 n											
Lilac, white Fr., bun. 6 o- 8 o Stocks, 12 bunches 3 o- 6 o											
Lily-of-the-Valley, 12 Tropæolum, 12 bun. 1 6- 3 o											
bunches 9 0-18 0 Tuberoses, per doz 1 0- 1 6											
Marguerites, 12 bun. 3 o- 6 o Wallflower, 12 bun 2 n- 4 o											
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SEEDS.

SEEDS.

LONDON: June 4.—The market to-day for farm seeds was characterised by quite a holiday spirit, and the business actually doing was as nearly n'i as possible. For spring Tares a few occasional orders still come to hand. In Clover seeds there is now nothing doing. Mustard and Rape seed find buyers at last weeks currencies. For Canary and Hemp seed the tendency of values is in buyers favour. Other articles at this quiet period of the year offer no subject for remark. John Shaw & Sons, Seed Merchants, 37, Mark Lane, London, E.C.

CORN.

CORN.

Monday being a Bank Holiday there was no busicess transacted at Mark Laue. On Wednesday trade was very quiet for both Wheat and flour, prices remaining nominally unchanged. The general rainfall tended rather to quiet the trade in feeding stuffs, and but little was done in any description to affect quotations. Common Russian Oats had a slightly easier tendency.—Average prices of corn for the week ending May 31:—Wheat, 37s. 7d.; Barley, 28s. 9d.; Oats, 21s. 2d. For the corresponding period last year:—Wheat, 43s. 5d.; Barley, 29s. 9d.; Oats, 22s. 5d.

CATTLE.

At Copenhagen Fields on Monday trade in beasts was slow, with prices occasionally rather easier. There was a good supply of sheep and lambs; very little change in prices, but tendency rather against sellers. Foreign calves were depressed, and hardly any English offering. Quotations:—Beasts, 4s, to 5s, and 5s, 2d, to 5s, 6d; ad, 5s, 6d, to 6s, prices, price

HAY.

At Tuesday's Whitechapel Market trade was very quiet, but top price of hay advanced 2s. Quotations:—
Prime old Clover, 05s. to 105s.; ioferior, 6ss. to 75s.; prime second cut, 9os. to 105s.; best meadow hay, 8os. 108s.; inferior, 4os. to 65s.; and straw, 28s. to 35s. per load.—On Thursday there was a sbort supply, and trade was steady at improving prices.—Cumberland Market quotations:—Superior meadow hay, 9os. to 98s.; inferior, 7os. to 78s.; superior Clover, 108s. to 115s.; inferior, 8os. to 90s.; and straw, 34s. to 38s. per load.

POTATOS.

At the Borough and Spitalifields markets supplies of new are increasing moderately, but really good qualities are shorter, and trade slow. Elsewhere the average prices were:—Magnum Bonums 75:. to root: Champions, 35: to 60:. Roses, 55: to 60:. Victoria, 70:. to 80:. Flakes, 70:. to 80:. per ton. New:—Jersey, 16:. to 16:. 64:, 71:. per evu.

COALS.

The following are the prices current at market during the week:—Ravensworth West/Hartley, 74s, 2d.; Walls End—Hetton, 155, 6d.; Hetton Lyons, 14s; 5t. Lambton, 155.; West, 14s.; Caradoc, 15s. 6d.; East Hartlepool, 14s, 2d.; Tees, 15s. 6d.

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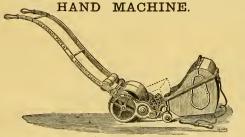
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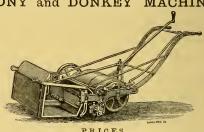
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Mrsdewellist Veitchii grand—Cattlew exoniensis. Cattleya exoniensis
, Trianze alba
Laelia Williamsii
, elegans
, aceps Dawsoni
, grandiflora
Vaoda Lowi
Deudrobium Griffithianum
, Schroderi
, Walkerianum
and Catalogues had.

Masdevallia Veitchii grandi-flora
,, Harryana lutea
,, atrosanguinea

,, atrosauguinea ,, Bull's-blood Odontoglossum Andersonia-

tum Bluntii Cattleya Morganze

On view morning of Sale, and Catalogues had.

On view morning of Saite, and Ustalogues had.

Friday Next.—(Sale No. 6675.)

MR. J. C. STEVENS will include in his
SALE by AUCTION, at his Great Rooms, 28, King
Street, Covent Garden, W.C., oo FRIDAY NEXT, June 20,
by order of Messrs. F. Horsman & Co., an importation of
Odonteglossum Rossi majus, O. cordatum, O. maculbum
superbum, O. ornithorhyncum, O. Cervantessi, Leelia autumnale, &c.; also, from Brasil, Leptotes bicolor, Cattleya halia, Leilia Dayana, Cattleya marginata, Burlingtonia fragraes, &c.
On view morning of Sale, and Catologues had.

Flowering Orchids.

M.R. J. C. STEVENS begs to announce that
his next SALE of ORCHIDS IN FLOWER will take
place on WE.DNEDDAY, July a. Gentlemen desirous of entering Plants for this Sale will please send particulars not letthan THURSDAY, June 26.
Anction Rooms and Offices, 8,8 King Street, Govent Garden, W.C.
Action Rooms and Offices, 8,8 King Street, Govent Garden, W.C.

M. R. S. CHETWOOD will SELL by AUC-TION, on the Premises, Roselands, Enfeld, on FRI-DAY, June 20, at 12 cClock, all the valuable OUTDGOR EFFECTS. GREENHOUSE PLANTS, including very fine Tree Camellas and Specimen Azalesa, 20-21git Garden Frames, Horses, Carriages, Harness, Saddlery, Cows, Pigs, and Farmiog Implements. Catalogues of the Auctioneer, Waltham Abby.

79, George Street, Edinburgh.

79, George Street, Edinburgh.
PRELIMINARY NOTICE—THURSDAY, July to.
VALUABLE SPECIMEN ORCHIDS.

VESSRS. SMITH AND DEWAR beg to intimate that they have been instructed by John Gair, Esq., The Klins, Falkirk, to SELL by AUCTION, within 79. George Street, Edinburgh, on THURSDAY, July 10, at 21 o'Clock, a very Large and Choice Collection of Valuable SPECIMEN ORCHIUS, parted with solely for want of room.

SMITT FAULD SHAP WAR, Auctioneers and Valuators, 79, George Street, Edinburgh.

"The Gore," Feltham, Middlesex.
SHORT NOTICE SALE.
By order of J. Atkinson, Esq, who is leaving the beighbournood.

By order of J. Adkunson, Est.; who is leaving the oeighburned.

M. R. WOODS has been instructed to SELL
by AUCTION, upon the Premises as above, on
MONDAY, June 16, at 1 for 2 o'Clock precisely, a large
quantity of splendid SPECHERN, HOTHOUSE, WINDOW,
entered, bluriticipal portion being of very rare and choice tore,
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Premises; at the Kailway Hote, Fetham; and of New MOODS, Auctioneer and Valuer, Hounslow.

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MARKET GARDEN, situate a few miles from Derby, size of Ground, at a low rent; 2 Greenhouses, Frames, Shed, Stable, &c., i Ground, at a low rent; 2 Greenhouses, Frames, Shed, Stable, &c., i G-roomed Dwelliog House, well cellared. A very good connection formed, and it may be much increased by any steady man. Present owner disposing of it through illness. A good retail business has been done for 14 gent.

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African Tuberoses.

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New Double, and Pearson's New Single, are splendid flowers, attested by numbers now supplied in cuttings, as per dezen varieties, post-free. Lemoine's and Lye's New FUCHSIAS, as per dezen; Older Sorts, very cheap. Bet DAHLIAS in cultivation, gr. to as per dozen, zor, per 100, selected Lists of the best Chrysauthernum, Fuchias, Peutstemons, Abutiloss, Pelargoniums, Dahlias, &c; also Hints on Growing, by a Flenist of long experience. Growing, by a Florist of long experience. RICHARD PANNETT, Florist, Chailey, Sussex.

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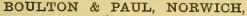
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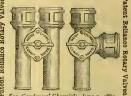
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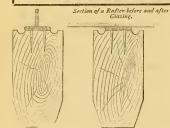
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Gardeners' Chronicle.

SATURDAY, JUNE 14, 1884.

LEEKS.

THE origin of the common Leek has not, we believe, been absolutely proven, but there is a general agreement among botanists that it is a peculiar form of Allium Ampeloprasum, a species wild in Southern Europe and the Mediterranean region, and naturalised in various parts of Britain. This was the view held by Linnæus, Philip Miller, Sims (Bot. Mag., I. 1385), A. P. De Candolle, Gay, Alphonse De Candolle (Plantes Cultivies), and Regel (Alliorum adhuc cognitorum, Monographia). The Leek, as we grow it in gardens, has nowhere been found wild, and though there seems to have been a tradition that it originated in Switzerland, we find no warranty for the statement, which, moreover, was discountenanced both by Haller and Alphonse De Candolle, both very eminent Swiss botanists. Gerard, in the first edition of the *Herbal* (1597), p. 138, says "It is very common everywhere," but he gives no clue as to when or whence it was introduced.

Nyman, in his Conspectus (1878-1882), 735, speaks of the Leek (A. Porrum) as cultivated for culinary purposes, and as having originated from A. Ampeloprasum. In Southern Europe, however, he says it occurs here and there subspontaneously (naturalised), and is recorded in the alps of Bucovina.

Vilmorin (Plantes Potagères, p. 416) adopts the general view, and considers it probable that the Leek and the Allium Ampeloprasum are one and the same species, differing only in the circumstance that in the one case the cultivator's efforts have been directed to the formation of bulbs, while in the other the object has been to secure the development of long sheathing leaves.

The Leek differs from the Onion not only in the small size of the bulb, or rather in its elongate form, but also in its flat leaves, with long sheaths, and which are arranged in two rows instead of several. Moreover, while the Onion bulbs produce numerous axil-lary bulblets, in the Leek these are few or It would thus seem as if growth in length were compensated for by diminished productiveness of bulbils. Indeed, a diminished production of bulbils is a necessary consequence of the leaves being arranged in two rows only, for in a given space there are, of course, fewer leaves. We are reminded by this of what at first sight might seem widely different—we mean the "monstrosa" varieties different—we mean the "monstrosa" varieties of the common Spruce Fir, with its elongated, snake-like branches, destitute, or nearly so, of lateral divisions. Inordinate growth in length, here, as in the Leek, is accompanied by a partial suppression of the side-shoots. We are induced to refer to the matter by the

We are induced to refer to the final by the receipt from a correspondent of specimens of Leeks, some with globular bulbs, such, as Sir Joseph Hooker tells us, charaterise Allium Ampeloprasum, and others with long bulbs of the usual form, which we are informed are all growing together in rows from seed sown in April, 1883. We do not remember to have previously seen a similar instance of reversion.

COMPOSITION OF ANIMALS.

764

ABOUT twenty-five years ago Sir J. B. Lawes and Dr. J. H. Gilbert gave a lengthened report (*Phil. Trans.*, Part II., 1859) on the analytical results which had then been obtained, illustrating the actual and comparative composition of some of the animals of the farm, fed and slaughtered as human food.

The weights of the carcases, and of the several internal organs and separated parts, had been determined in the case of two calves, two heifers, and fourteen oxen; 249 sheep, in five classes, as to age, maturity, fatness, and mode of feeding; and fifty-nine pigs, in seven classes, arranged chiefly according to the food consumed. In all 326 animals were experimented upon.

From the data thus obtained it appeared, that whilst the internal organs—or, so to speak, the machinery employed in the production of the meat—increased considerably in actual weight during the "feeding" or "fattening" period, yet they diminished in proportional amount to the whole body, or to the carcass. That is to say, it was the carcass—the most important edible portion of the animal—that increased the most rapidly.

The following is a very condensed summary of some of the results quoted in this part of the inquiry. There is a remarkable difference in the construction and economy of the receptacles and organs of elaboration of the food of our farm animals, as may be gathered from the following table:—

Percentages (in fasted live-weight) of the Digestize Organs.

			Oxea	Sheep.	Pigs.
Stomach and contents			11.61	7 43	1.28
Intestines and contents	• • •	••	2 74	3.53	6.24
Total		••	14.35	10 96	7-52

Thus, whilst 100 lb. fasted live-weight of the ox comprised about $14\frac{1}{2}$ lb. of stomach and intestines (and their respective contents), that of the sheep contains only 11 lb., and that of the pig $7\frac{1}{2}$ per cent.

These facts are of considerable importance, as indicating the great difference in the food-requirements of the various animals of the farm; the ruminants consuming such a large proportion of fibre, much of which is indigestible; and the well fed pig but little indigestible matter, and a relatively large proportion of starch

To ascertain more exactly the composition of our slaughtered animals, and of their increase whilst fattening, ten animals of different descriptions, and in different conditions of maturity, had been devoted. In these the amount of water, mineral matter, nitrogenous substance, and fat were determined. The following table contains a summary of the percentage composition of oxen, sheep, and pigs, both in a store and in the fat condition:—

	Oxen.		She	ep.	Pigs.		
	Store.	Fat,	Store.	Fat.	Store.	Fat.	
Nitrogenous sub-}	17.8	150	14 5	11.5	140	10.5	
Fat	22.6	34 8	23.8	45-4	28 1	49-5	
Minera matter (Ash) }	5.6	4 6	4 4	3-4	26	1.4	
Total day sub-	46.0	54 4	42.7	бо.з	44-7	61 4	
Water	54 0	456	57-3	39-7	55 3	38.6	
Total	100.0	100.0	10),0	100.0	100.0	1000	

From these results it appears that while water forms the largest proportion of the animal body, it considerably diminishes as the animal progresses from the lean to the fat condition. The nitrogenous matter and the ash

is seen to be in less abundance in the fat than in the store animal. It will be observed further, that the largest item in the dry or selid substance of the animal body is fat, and that there is nearly twice as much in the carcass of the animal fit for the butcher as in the same weight of the store or lean animal. The fat also forms by far the highest percentage in the pig, and the least in the ox.

The general conclusions were, that but a small proportion of the increase of a fattening animal was nitrogenous substance; that less than 10 per cent., and even as little as 5 per cent. of the nitrogenous substance of good fattening food, would probably be finally stored up in the increase; that the proportion of fat stored up was very much greater than that of the nitrogenous substance; and lastly, that the stored-up fat would frequently involve in its production an amount of the non-nitrogenous constituents of the food much greater than the weight of the stored-up fat itself.

Our distinguished authors have now published (Phil. Trans., Part. III., 1883) an account of the quantity and composition of the mineral matter (ash) in certain separated parts, and in the entire bodies of the ten animals previously referred to, of which the following is a summary.

In the first place, 1000 lb. live-weight of calves or oxen is found to carry off from the farm much more mineral matter than the same weight of lambs or sheep, and 1000 lb. liveweight of pigs much less than sheep.

Thus whilst 1000 lb. live-weight of oxen may contain from 40 lb. to 50 lb. of mineral matter, an equal weight of sheep will carry off only about 30 lb or less, and the same live-weight of pigs less still. In all cases by far the largest proportion of the total mineral matter is in the collective carcass parts.

Referring to the amount of the most important mineral constituents, whilst 10001b. liveweight of calves or oxen may carry off from 30 lb. to 40 lb. of phosphate of lime, the same weight of sheep would carry off only about 26 lb. or less, and and an equal weight of pigs considerably less still. With each description of animal the quantity of phosphate is still in a given liveweight of the fatter than of the leaner individuals; and this is especially so in the case of

In round numbers it is said that 1000 lb. live-weight of oxen will carry off only 2 lb. or less of potash, sheep from $1\frac{3}{4}$ lb. to $1\frac{1}{2}$ lb.; and 1000 lb. of pigs about the same; in each case the less the fatter the animal. Of the potash as of the phosphoric acid by far the larger proportion of the whole is in the carcass parts. The constituent coming next in amount is soda; but with oxen the quantity in 1000 lb. live-weight does not reach $1\frac{1}{2}$ lb., with sheep it is only about 1 lb., and with pigs about the same.

It is stated, with regard to each description of animal, that a given live-weight will contain less of every constituent the more the animal is matured or fattened; and that the loss to the land, or to the manure from purchased food, will be considerably more with growing than with only fattening animals.

As conveying a somewhat more definite idea of the amount of some of the most important mineral constituents that would be removed from an acre of fair average pasture or arable land in animal increase, and in some other products, it is approximately estimated that of phosphoric acid an acre would lose more in milk, and four or five times as much in Wheat or Barley grain, or in hay, as in the fattening increase of oxen or sheep. Of lime the land would lose about twice as much in the animal increase as in milk, or as in Wheat or Barley grain, but probably not more than one-tenth as much as in hay. Lastly, of potash an acre would yield only a fraction of a pound in animal increase, six or eight times as much in

milk, probably twenty or thirty times as much in Wheat or Barley grain, and more than one hundred times as much in hay.

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The loss to the land in the animal increase is, in fact, chiefly in phosphate of lime, in amount varying from 5 lb. to 10 lb. per acre. In milk the loss is higher in phosphoric acid, less in lime, and more in potash. In Wheat or Barley grain the loss of phosphoric acid is several times as great, and it is chiefly as phosphate of potash; whilst in hay the loss in phosphoric acid is much the same as in Wheat or Barley grain, but that of lime and potash is very much greater than in any of the other products.

RHODODENDRON ROYLEI.

In the latest revision of Himalayan Rhododendrons in Hooker's Flora of British India, vol. iii. (1882), 9, 474, Mr. C. B. Clarke refers this to R. cinnabarinum, together with R. Blandfordiiflorum. We shall not venture to dispute such an arrangement, but for garden purposes it is expedient to keep them distinct. R. Roylei has broader and smoother leaves, and larger flowers of a brighter colour than in R. cinnabarinum. For the specimen figured (6g. 142) we are indebted to Mr. Mangles, who informs us that the truss of eight flowers was cut from a plant 9 feet high in bis garden, where it is hardy except in the most severe winters.

BARON SCHRŒDER'S GARDEN.

FROM Egham station a two-miles drive along a pleasant road brings us to The Dell, and entering and passing along the broad smooth carriage-drive, which is edged with well trimmed grass, planted with large specimens of rare Conifers, and backed by shrubs, we come to the mansion, which is situated on high ground. A glimpse of a view to the left causes us instinctively to turn on that side, and then a grand scene of sylvan beauty presents itself. Sloping suddenly down on this side, the ground forms a natural dell enclosed on each side by huge Beeches, ages old, among which the different green of an occasional Oak may he seen contrasting finely with the tints of the other trees and the Bracken-covered foreground. Stretching far away the dell seems to form an avenue to Windsor Castle and its immediate surroundings, which appear as clearly defined at the three mil distance as though they were but a quarter of a mile off, and give a most lovely natural picture, and one over which we were fain to linger. On this side nothing but wild natural beauty is found, the only sign of modern gardening being the bright flowers of two or three scarlet Thorns on the slope of the dell. But we pass round to the front of the house, and a bewildering sight of quite a different nature meets our view. Belting the raised margin of a space of about to acres, and artistically planted in masses at pro-minent points over the smooth green lawn, are thousands of Rhododendrons of the best kinds in full bloom, giving the most glowing and varied expanse of colour we ever remember sceing. Not alone are the quantities of plants there, and giving their grand display, but the clever manner in which they have heen arranged by massing the colours and grouping the beds, so that wherever the eye catches the colour it is effective, and is seen in every part with a sufficiency of green either of the lawn or the background of trees to prevent it being wearisome to the eye, indeed, so much art has been displayed in the arrangement that he would be clever, indeed, who could suggest an improvement. Magnificent! no one could fail to exclaim when his eye lights on that gorgeous

Every fine variety that can be obtained is here in quantity, and we thought it a very good opportunity to make a selection of the best, but a critical examination proved the difficulty of that undertaking, so lovely are they all that the preference of any is much a matter of opinion. We noted, however, that our old friend The Queen was the most telling white, though Mrs. Russel Sturgis, a grand white with dark brown blotch, was very effective, and that Baron Schroeder was the brightest of the dark crimsons. At The Dell, too, many new unnamed sorts are grown, and several very fine things we picked out were of this class. Away, too, round the banks and along the shady walks the common ponticum was so lovely as to cause us to ask, Why is it not more

planted as a common shrub? It grows anywhere and is hardier than a common Laurel, as effective a shrub as any, and giving an abundance of flowers.

But to take the general outline of the garden we must go back to the mansion, which on this side has the conservatory running half-way, with the corresponding statuary and picture gallery on the other half, while the other side or end is enclosed the whole length by an ornamental structure which Is planted as a Fernrockery, some very fine old Tree Ferns being there, as well as an interesting geoeral collection.

From the conservatory we see that the carpet of the large and beautiful expanse before us is a well defined lawn; in the foreground is a small but sufficiently large geometrical flower garden broadly edged with permanent plants and planted with the usual brilliantly coloured bedding plants; beyond are some fine clumps of the snowy Kalmia, the yellow and coppery-

Leaving this lovely garden, which is quite removed from the more material plant, fruit and kitchen garden, by the road under which we pass through a subterranean way, we come to the glasshouses and offices. These occupy a large area, and are well and conveniently arranged according to a plan, every point being studied to make all things efficient and neat. The houses are thirty-four in number, and are arranged in a square, the large Orchid and other plant-houses being in the middle, the smaller ones next, and the vinceies, orchard-houses, Cucumber and Melon-houses outside. Cleanliness and order prevail throughout the whole place, not a stray tool, idle barrow, or other unnecessary obstruction, being met with anywhere. Everything bears that thriving look which is so indicative of good attention on the part of all concerned.

Passing to the large span-roofed Orchid-houses,

The Cattleya-houses have large specimens in bloom of C. Mossia, C. gigas, C. g. Sanderiana, the new and pretty C. Schrcederi, C. Mendelli, Leelia purpurata, L. grandis, L. elegans, large masses of C. Skinneri alba, C. Mossica alba, C. Warneri, Anguloa macrantha, A. Ruckeri sanguinea, Cypripedium Schreederi, Ceelogyne Massangeana, some good Utricularias, &c., and a fine tuft of the rare Cypripedium Fairrieanum not in bloom. The Phalæoopsis-house is a pretty oval structure, with an oval tank in the centre, with Nepenthes sanguinea, N. Mastersianus ×, N. Northiana, N. Rajah, N. Veitchii, and others hanging over it, the stages being occupied by a fine lot of Phalænopsids in bloom being P. Schrederi, P. Sanderiana, P. grandillora, and P. Luddemanniana.

The long cold-house we found gay with a large batch of Odontoglossum vexillarium, and another of the finest forms of Masdevallia Harryana which were

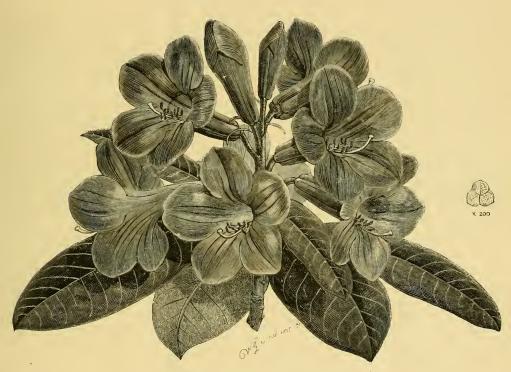


Fig. 142.—RHODODENDRON ROYLEI: FLOWERS BRICK-RED. (SEE P. 764.)

tinted Azaleas, and the before mentioned gorgeous Rhododendrons to which the eye is continually attracted and which bound the view on all sides.

Near the mansion are a few giant Cedars and patriarchal Oaks, and placed here and there are fine speci-mens of rare Conifers, many of which must have made good use of their time to attain such a size in the few years they have been in the country. Among them are noble specimens of Araucaria imbricata, bearing plenty of cones; Libocedrus decurrens, Cedrus atlantica, C. Deodara, many of the varieties of Cupressus Lawsoniana, &c., ranging from 20 feet to 30 feet in height, and lovely specimens of many of the Retinosporas, including the fine R. filifera, from 5 feet to 10 feet each. In the distance is a Copper Beech, which materially assists the picture; and near by is the famed specimen of old double white Camellia, which thrives so well here in the open air. It is a marvellous shrub, spreading some 25 feet across and some 18 feet in height; a bloom or two lingers yet on it, but that some time since we were told it bore thousands of flowers, and was a sheet of white blooms.

first we find them occupied by a magnificent lot of specimens of the rarest and most costly, the fame of many of which has penetrated all over the world wherever "orchidie" is spoken; for examples, those fine plants of Cypripedium Stooei platyteoium, C. Godefroye, C. Morganie, and Aérides Schreederi.

The East Indian-houses contain some grand Vandas and Aérides, including V. Insigois Schreederi, a bush of V. Sanderiana, as well as several smaller, and a fine piece of the new Acrides Lawrencie. Pitcherplants are hanging overhead, and in bloom are many Vandas of the tricolor section, V. Denisoniana, a grand plant, with many large white flowers; V. ccerulescens, several varieties; the quaint V. limbata, several fine varieties of Aérides Lobbii, with branched spikes over 3 fect in length; plants of A. crassifolium 2 feet 6 inches across, and bearing large dark rose flowers on spikes of about 3 feet in length, grandly flowered; A. affine; many Dendrobes, among them being a lot of D. Dearei, with from six to twelve of its snow-white flowers on a spike; and fine pans of C. niveum, C. Lawrenceanum, &c.

arranged to contrast well with the many O. Alexaodræ, good O. Pescatorei, and numbers of other rare and lovely things, such as Oncidium pulchellum with its branched spike of about twenty-five blooms resembling little flowers of Odoatoglossum vexillarium. It is an old Jamaica plant, but now very tare. Passing through the stove-houses we encounter some wonderful specimens; selecting a few we must name Anthurium Varocqueanum, with scores of leaves 7 feet to 8 feet in length; A. Veitchii to match; A. Scherzerianum with over one hundred spathes, Cycas revoluta with circular head 9 feet through, Ixoras with over one hundred trusses each and no meally-bug; grand Bougainvilleas and a finely bloomed specimen of the climbing Lily (Gloriosa superba) overhead.

The Azalea and Camellia houses are well furnished: with the former we note two good globular specimens of our old friend Mitraria coccinea, with its bright scarlet drooping flowers, and with the Camellias, which are mostly planted out, are a fine collection of filmy Ferns. Cut flowers in great quantity are an imperative necessary here, and many bouses are

devoted to Gardenia^e, Tuberoses, Stephanotis, Ferns, Tea Roses, Carnations, Pelargoniums, Calceolarias, Achimenes, Gloxinias, &c., all of which are wellgrown and gay with bloom.

Fruit of the best quality is equally in demand and equally well supplied, as witness the heavy laden Vines in the long range of vineries, commencing with the one in cutting and following through the next just turning in, and so on, in all stages, to the latest with berries just forming; the 300 feet long range of heated wall cases, with its trees laden with Peaches, Nectarines and Flums; the orchard-houses with Peach and Nectarine trees, many of them bearing 100 to 150 ripe and ripening fruits; the scented Pines and luscions Melons, and the shelves and pits of Strawberries in all stages of fruit. These last are splendidly done at the The Dell, where they commence the forcing with Vicomtesse Héricart de Thury, followed by La Grosse Sucrée, then by Alice Maude and Sir Charles Napier, finishing with President;

and by this system the best results are obtained. Pits are arranged round many of the houses, and are filled with Chrysanthemums, Carnations and other young stock, and in one of the sunniest is the fine collection of Nerioes, getting the necessary baking in the sun. Excellent provision is made for raio-water, one of the tanks alone holding 17,000 gallons; the gardener's house is a handsome and commodious structure; and the young men's bothies, with bath-room attached, are models of what young men's lodgings should be. The kitchen garden, it is needless to say, is as good and well kept as all the rest of this fine garden establishment. Saturday, June 7, the day of our visit, was the twentieth anniversary of Mr. Ballactine's (the gardener's) appointment as its director-general, and no more telling testimonial of his abilities could be found than the condition in which The Dell gardens now are. During Mr. Ballantine's tenure of office a great part of that beauty which we now laud has been evolved from rough garden or homely pasture, and every change or improvement which has been made has been well done. The Baron, too, always happy, but happiest in his garden, must have his share of the honours, for both master and man must have been of accord to bring about such a good

WILTSHIRE WOODS AND DOWNS.

A BOTANICAL EXCURSION.

WE are a party of three, Mr. and Mrs. M., and the writer, all botanically inclined, and for the time being sorely affected with the British Orchid fever, to cure which, we purpose-but not by medical advice-taking a ramble over the charmingly picturesque downs of Wilts, and through one or two pieces of woods, which are dotted about here and there, feeling well assured beforehand that, a harvest sufficiently rich to quench the thirst of even the most feverish of orchidologists is in store for us. To say that enthusiasm will sometimes take its possessors long distances, few people, it may be presumed, will be found to deny. In our case there must have been no lack of it, seeing that Mr. and Mrs. M. have journeyed a distance of something like 400 miles mainly to pay a two days' visit to the home and stronghold of many of the species of our English orchidaceous plants. It seems almost superfluous to say, to any one imbued with a love for wild flowers, that the study of our native Orchids is an extremely interesting one, and the advantages and knowledge to be obtained respecting them from a visit to their natural habitats are such as cannot be acquired from a collection under cultivation, no matter how close our observations may be. In their wild state we meet with them in colonies as it were: one species may be found in hundreds in one particular spot, and may not be met with again perhaps for miles, whilst others again may be found split up into many colonies or clusters, as if a few members of a large family had rebelled against their elders, and sought pastures new. Again, we may find that a certain species will be comparatively plentiful this year in one particular place, and then almost vanish for a year or two, only however to reappear as strong and numerous as before.

"To-morrow morning at a quarter to ten we will start, taking a piece of woodland skirting the downs before our mid-day meal," is the course decided on the night preceding our first day's pleasure. The time soon arrives. No. 1 of the party has the Orchid fever in an acute form, is restless, imagines he has

discovered a plant which is quite new to the locality, the name of which may prove to be "Listeriaorchisophrysarinifera puzzeles," but he is in great doubts on the point, and ere he wakes it vanishes into oblivion. Entering the wood after ascending a short steep hill, we soon come in contact with flowering plants of Cephalanthera grandiflora; Mr. M., who has not seen it before, is highly delighted, and well he might be, for it is really a grand and majestic looking plant when in bloom, with spikes from 11 to 2 feet high, each clothed with yellowish-white flowers, from six to ten in number. Listera ovata, the common Two-blade, is next seen, and is very vigorous, a few of the flowerstems attaining a height of nearly 2 feet. Orchis maculata is just coming into flower and calls for no Orchis special comment. Habenaria bifolia (Butterfly Orchis), is the next treat in store for us; it appears to be plenti-ful and is just expanding its first flowers as we see, requiring only a few more days to be at its best. This is certainly one of the prettiest of our native Orchids, as well as one of the most frequent, and when seen with spikes some 2 feet high, with from twenty to thirty of its greenish-white flowers resembling small butterflies, one cannot refrain from greatly admiring it. Nearing the end of this part of the wood and gradually getting to higher and drier ground we are rewarded by finding that singularly interesting and leafless Orchid, Neottia Nidus-avis (Bird's-nest Orchis), so called, it is said, from its roots being like a bird's-nest, although we ourselves have always failed to see much resemblance between the two. The plant is evidently at home under Beech trees, and on a chalky soil, spikes 12 inches long being met with here and there; the flowers, which are of a dull brown colour, are far from being attractive, and at most can only be said to be more curious than pretty.

Emerging from the wood at its highest point and turning sharp to the right we take a piece of down land on our way back, finding we have a good threequarters of an hour to spare. Descending down a very steep hillside which demands our proceeding slowly and cautiously to prevent us from performing some acrobatic feat by going headlong first, we are not long in finding Orchis ustulata: of this, however, a word or two later on. The formation of the ground where we now are is of a decidedly interesting and curious character, especially to any one making their first acquaintance with our South Downs and is what is locally called a cleave. We shall probably convey but a very inadequate idea to the reader of what a cleave is, by saying that it is a formation of the land which presents the appearance of having had millions of tons of soil removed therefrom, and in shape frequently, though not always, something like a horseshoe. A few plants of that sweetly-scented Orchis Gymnadenia conopsea are here to be met with, and are just coming into flower. Our primary object, however, is to find some strong plants of an Ophrys, which the writer had seen a few days previously, and which he thought might prove to be O. aranifera, a very rare species in-We are doomed, however, to meet with a sad disappointment, by finding that they had been eaten off by a flock of sheep, which had been feeding in this particular cleave for the previous two days. "Well, really, I am sorry; I would have gone a long way to see aranifera in flower," is the exclamation, uttered with mournful emphasis, as we in vain try to forget our disappointment. Ah, well! there is no help for it, and so saying, we return to our starting point, passing on the way, and close to the roadside, a beautiful bank which is one mass of wild flowers, consisting principally of the following, viz.:—Hieracium pilosella, Leontodon hispidum, Lotus corniculatus, Lamium album, Veronica chamædrys, Trifolium pratense, T. procumbens, Plantago media, and P. lanceolata.

An honr's rest and we are again on the move, this time with an addition of two to our party, which consists of "Merchant," the driver, and his sprightly chestnut nag; a truly harmless looking pair indeed, but just the right sort for our purpose, the former courteous and obliging, whilst the latter is quiet in harness, free from vice, and is probably good both to ride and drive. "Now, Merchant, take the Salisbury Road and drive to the hill beyond Knook," is the order given. "Yes, sir," and off he goes at a pace considerably less than 10 miles an hour, landing us there safe and sound. Taking the white chalky downs on the left, half-an-hour is spent in collecting specimens; G. conopsea is one of the first plants met, and in a short time it will be a grand sight, with its tall pyramidal spikes of fragrant flowers, varying in colour from purple to pink and to almost white.

Ophrys apifera is very plentiful, this year seemingly being a very good one for it on this portion of the downs. It is fast throwing up its flower-stems and in a fortnight or three weeks hence will doubtless be at its best. Polygala vulgaris (Milkwort) we see in all directions — in many places the ground being literally carpeted with its bright blue flowers, which, with their white stamens, are exceedingly pretty and very attractive. A little further on and we come to quite a little rustic pageantry in the form of a number of village children, gambolling and romping away right heartily and merrily, whilst a few others again have been busy, like ourselves, collecting wild flowers, and are now engaged in making them up into miniature bouquets. One of them appears to be quite a genius, and has made a neat little basket with handle and everything complete of Juneus communis, and which is half filled with flowers, amongst which we note Helianthemum vulgare, Ranuoculus bulbosus, Lotus corniculatus, Polygala vulgaris, and Potentilla anserina.

"Now, Merchant, drive round the road towards hitters." "All right!" and taking the box-seat Chitters." and the reins, the driver and his horse are soon going along at a fairly good pace, the fatter, doubtless, with some idea that he is going home, as his head is now in that direction. Another half-mile and we turn sharp round to the right, at the same time with a perceptibly slackened speed. Some two or three hundred yards have only to be traversed when a very pretty picture presents itself, viz., a few acres growing on the hill-side, of Onobrychis sativa, whose pale pink flowers, borne on stout stems 2 feet high, may be seen from a considerable distance. Although it is cultivated in this locality for feeding purposes, the plant is nevertheless indigenous to the soil and may be frequently met with by the roadside and on railway embankments. Nearing a belt of Fir trees, our objective point, a search is made for the green Musk Orchis, Herminium monorchis; we have grave doubts, however, and they are soon confirmed, about finding it thus early in the year. Poterums, Sanguisorba, Anthyllis vulneraria, Ranunculus bulbosus, and Polygala vulgaris are the most noticeable plants we see here. We are not long in arriving at the most prolific piece of downland for wild flowers in the district.

Our time would not permit of staying very long; sufficient, however, to become acquainted with most of the things in bloom, and for the purpose of avoiding a repetition of name, it may be stated that most of the foregoing were found in abundance: Orchis Morio we came across in plenty, but it is fully a fortnight past its best-there are acres of it, not, we would say, with a plant growing here and there, but in great abundance—as many as a hundred spikes may sometimes be counted in a few square yards. O. ustulata is more scattered, but is evidently at home. for here it is that we find our strongest spikes, some of which are fully 8 inches long-the average length by some authorities is stated to be 2 to 3 inches. The flowers, which have a reddish sunburnt appearance, and have gained for it the appropriate name of Scorched Orchis, are long-lived, more so I think than most other British species. Saxifraga granulata, Carduus nutans, Gentiana campestris, Carex glauca, Cerastium arvense, and Briza minor are also to be met with, as well as that very rare British plant; Senecio campestris. Cineraria integrifolia—the last-named is said to be extremely limited in Britain, being confined chiefly to a few chalky downs, and to the maritime rocks near Holyhead.

We now make the best of our way to Boulsbarrow Knoll—a name well known to Wiltshire archeeologists, and which, if my information is correct, was the last resting-place of many ancient Britons long anterior to the Roman invasion, and of the latter we may say they have left many traces in this part of the country of their pre-existence in England. It is now a case of the blind leading the blind, for Merchant hardly knows which down tract to take. We decided, however, to take the second on the right, and which eventually proves to be the correct one. Leaving the Chitters and Amesbury road we have soon a charming view of the downs. We are now well on to Salisbury Plain. Yes, and what a vast expanse of country we have in view. To right and to left the downs stretch away as far as the eye can see, and we may go for miles and find the country of the same character, giving one certainly the idea that England is far from being over-populated. The only life one

meets with beyond vegetation, is an occasional flock of sheep with their shepherd, his dog leading the way; and to any one wishing to live a life of solitude, we' would say-obtain a situation as shepherd on Salishury Plain. Nothing in the way of plants are met with on our way to the Kooll, indeed we did not expect to find many, but once arrived there it was thought a few more Orchids might be seen, hut such did not turn out to be the case, for beyond a few plants of Reseda lutea, Asperula cynanchica, Potentilla aoserioa, and Ranunculus aquatilis, nothing worth noting was seen.

A move is at last made for home, Merchant and his chestnut nag, doubtless, being glad to hear the sound of such a word; and it must be confessed his customers had almost become tired enough for one day. So ended an interesting and agreeable amongst the woods and downs of Wilts. J. Horse-

WHEAT MILDEW AND

THE honour of being the first to demonstrate the connection between the Barberry Æcidium and the Wheat mildew belongs to a Dane, a schoolmaster, who lived in the village of Hammel, near Aarhus, in Jutland, at the beginning of the present century. 1818 the Royal Agricultural Society of Denmark published a paper by Schœler, "On the Pernicious Induence which the Earberry bush exercises on Cereals." This paper has been hitherto overlooked, until Mr. Nielsen brought it under notice in 1874, + in his capacity as Consulting Botanist to the Royal Agricultural Society of Denmark, Schoeler began the study of the subject in 1807, when, by closely observing the yellow spots on the underside of Barberry leaves he came to the conclusion that they were due to a microscopical fungus. In 1810 he noticed that the Barberry bushes were nearly free from this fungus, and that the Rye was that year also almost free from rust.; "I then thought," he says, "that there might possibly be a close relationship between the rust on the Rye and that upon the Barberry; and when, in the following year (1811), I noticed that the rust upon the Barberry appeared much earlier in the spring than the rust did upon the other plants-grasses and cereals-I thought I had found out the true origin of the rust in Rye. Still, however, this question again and again presented itself to my mind, 'Where does the rust on Rye come from in those places in which no Barberries are to be found?' In the summer of 1812 I convinced myself that the Barberry bushes are indeed able to communicate the rust to the Rye by means of the wind, even to a considerable distance."

For several years prior to 1813 he experimented in his garden by planting different kinds of corn around Barberry bushes, and found that Rye and Oats were especially liable to be destroyed almost every year by the rust, which always appeared first nearest the Bar-

From 1813 to 1817 he planted large and small Barberry bushes in his Rye field; he found that the larger bushes did not give rise to the rust in the Rye, when they lost their foliage in the process of transplanting; but, on the contrary, the smaller bushes, which did not lose their leaves so readily, did give rise to the rust in the Rye to a very marked degree.

One of his experiments he thus describes :-" I planted in May, 1816, in a Rye field; three small Barberries; one of them did not thrive, but the other two developed nineteen leaves before the end of May, nearly all of which had the yellow spots of Æcidium herberidis upon them. When in the middle of the following June the Rye immediately surrounding these two bushes became rusty, I invited by a notice in the newspapers every one interested in the question to come and convince themselves of the pernicious influence which the Barberry exerts. On account of this invitation many people came to visit me, and all of them, the learned as well as the unlearned, declared that they could accept no other cause for the rust on the Rye than the small Barberry plants. They were astonished that so small a cause

should have produced so great an effect. On June 22 most of the Rye plants for 30 to 40 feet (square feet) around these small Barberries were more or less rusty, mostly so to the north and north-west, but for a long time afterwards not even a single rust spot could be found elsewhere in the field."

In the same year (1816) Schoeler performed the following experiment: -Some fresh branches of the Barberry bush having rusty leaves upon them were cut off, put in a box, and carried to a Rye field, where The rusty Barthe Rye was still moist with dew. berry leaves were applied to some of the Rye plantsto the straw as well as to the leaves-by rubbing them with the underside of the affected Barberry leaves until he could see some of the yellow dust (spores) of the fungus adhered to the Rye plants. The infected Rye plants were then marked by tying them to sticks driven into the ground. In five days time these plants were badly affected with rust, "while at the same time," says Schoeler, "not one rusty plant could be found anywhere else in the whole Rve field,'

For the above extract I am indebted to Mr. Jensen, who kindly drew my attention in the first instance to Scheeler's investigations.

Of course the village schoolmaster's researches found little favour with the learned men of his day. He was met by such unanswerable arguments as, "Can cows produce horses?" and the like. Still, the fact remains that Schoeler was the first actually to demonstrate the identity of the Barberry Ecidium with the Wheat mildew. In De Bary's subsequent investigations, which were conducted perfectly independently, as Schoeler's experiments were unknown to him, at that time he was led up to this point in the life history of the Barberry Æcidium by his previous investigations with the non-heteroccismal Uredioes, by finding from actual experiment that their acidia are only mere conditions of the other spore forms.

One point about which Scheeler is clear-namely, that the Wheat mildew does occur independently of the Barherry-is worth notice, as indicating that the man was an accurate observer of Nature, and not a mere theorist, carried away by a preconceived notioo. This point is often overlooked, even in the present day, that Puccinia graminis has another way of reproducing itself without passing through the aecidial stage. In the Gardeners' Chronicle I have already given my own views upon this subject. Since then I have obtained specimens of mildewed Wheat from Australia, from three gentlemen, namely, from Professor Custance, South Australia; Mr. James Sewell, Queensland; and Mr. A. H. Sampson, New South Wales. Now all these specimens show this marked difference from those which occur in England, namely, that the uredospores are far more profuse. It is a fact in connection with probably all other heteracismal Uredines that when they are developed from the æcidiospore the teleutospores are far more abundant, and produced earlier in the life of the fungus than when the Uredine arises from the teleutospore itself, in which case the uredospores are the most abundant. I have elsewhere + shown that this is the case with Puccinia rubigo-vera as it occurs in this district.

Ifere we find the Uredo as early in the year as March in extreme profusion, but I have never gathered the Acidium (.E. asperifolii). Again, the Luzula pucciuia (P. obscura), which has its Acidium on the common Daisy +, also occurs in America, specimens of which Professor Farlow has sent me from Massachusetts, where the Daisy is an unknown plant except in cultivation. In all the American specimens I see the same fact obtains-namely, an excess of uredospores compared to what we find in British specimens.

I am pleased to find that the same observation has heen made by Mr. Rostrup \$, who finds plants of Groundsel (Senecio) when growing in districts from which the Pine is absent when affected with the Coleosporium seoecionis produce uredospores almost entirely. Further Rostrup found the uredospores of Chrysomyxa Ledi upon a specimen of Ledum palustræ which he had received from Greenland, although the Ecidium of this species, as shown by De Bary, occurs upon Picea excelsa, a tree which does not occur in Greenland. Charles B. Plowright, 7, King Street, King's Lynn, June 8.

ON TUBER-BEARING ROOTLESS CUTTINGS OF SOLANUM COM-MERSONI.*

WHEN Mr. J. G. Baker read his paper "On Tuber-bearing Solanums," before the Linnean Society of Loodon on January 17, last, I was very much interested, or rather the interest I had previously felt in the introduction of a new species of Potato (Solanum Ohrondii, Revue Horticole, = S. Commersoni, Dunal), from the River Plate to the Naval Garden at Brest, was revived. M. Blaochard had kindly sent me a few tubers of this last-named species, which I planted in a pot of earth and placed in a warm planthouse in February of the present year. The temperature of the house varied from a maximum of 70° on warm sunny days to a minimum of 50° on cold, wet, or frosty nights. This temperature I had been led to believe was near that naturally enjoyed by the plant in its native habitat. Late io March growths appeared, and in April it occurred to me that, as my stock of tubers had been necessarily limited, it would be possible for me to increase it by means of cuttings made from the succulent young stems, which were abundantly produced; accordingly I took off twelve cuttings and inserted each cutting separately in a small (thumh-sized) flower-pot in light sandy soil. The pots were partly plunged in a bed of sand in a heated propagating case having a bottom-heat of 70° to 75°, and a top-heat of about 10° lower. For a week or ten days the cuttings remained fresh and stationary, but after that time such as had been terminal growths commenced to elongate, while those which had formed merely a leafy section of the young growing Potato stems threw out young axillary leafy growths, or shoots, from the axil or eye immediately above the level of the earth in which the cuttings had been inserted. Seeing these new axillary growths, and the elongation of terminal growths already made, I naturally assumed that the cuttings had put forth roots from their lower ends, as other allied plants, such as Tomatos, readily do. But a careful examination showed that they had not done so. After a careful examination of all the cuttings I find that only one has rooted, and that one not from the original cutting, but from the base of an axillary out-growth made after the cutting had been inserted some time. But I ought to have said that before this thorough examination was made I was surprised to observe that the leaves of some of the cuttings, especially those which I had thought most healthy and strongly rooted, began to assume a yellow colour, and that finally the cuttings appeared to he dying away without any evident cause. An examination showed that in no single instance had roots been produced by the original cuttings, but that each and all, without exception, had produced a small tuber from the lowermost leaf-axil of the cutting itself. I beg to lay examples of these cuttings in all their stages before the Scientific Committee for their

observation and opinion. This instance of direct tuber-hearing from a stem inserted as a cutting, is mainly interesting as having taken place without any roots baving been developed, It is a well known fact that old Potato tubers may give rise to new tubers without either roots or leaves being present, or developed in any way; and I remember Mr. Gilbert, of Burghley, showing me, some years ago, old tubers bearing young ones in the direct way here indicated. That Gloxidia leaves inserted as cuttings produce tubers at their leaf bases is also a well known fact; but in that case, as also in the case of Dahlias, true roots are also developed directly from the cuttings. In the case of the "Bulb Vine" (Vitis gongylodes) as its annual stems approach dissolution one or two of the internodes nearest to the apices of the shoots thicken and so form growing tuhers, but in the case of Solanum Commersoni we have an axillary subterranean growth developed directly from rootless section of a stem inserted in moist earth, and in a heated atmosphere. The production of axillary stem tubers from the haulm of growing Potatos is, of course, quite a common occurrence, but I remember no case of tubers having been observed as produced from rootless stem cuttings, as in the present

As I have observed, the only roots I saw on the whole batch of cuttings were produced from an axillary outgrowth of the cutting made after its insertion, and not from the original cutting itself. This is quite a

i "Paper read at the Scientific Committee of the Royal Horti-cultural Society, on Tuesday, June 5, 100 Scholer-"Berbeissens skudelige Indflydelse paa F. Om Scholer-"Berbeissens skudelige Indflydelse paa Scholer, "Landdebonwilke Tudender, 1818, part viii., p. 1895; Nicker, Ugestoff for Landmund, 1834. I By the word here translated "rust" is evidently meant, not only the Urcdo, but also the middw.

^{*} Gardeners' Chronicle, Sept. 9, 1882. † Sunlight, vol. i., p. 77. † Yournal Linnean Soc., Botany, vol. xx., p. 512. § Rostrup, Heteracisks Uredineer, reprint, 1884, pp. 6~7.

² Paper read at the Scientific Committee of the Royal Horti-cultural Society, on June 10.

common feature when Asparagus consanguineus and A, tenuissimus are increased by stem cuttings. The portion actually inserted never produces roots, but from the axils of these cuttings new shoots arise which produce roots from their bases. F. IV. Burbridge.

NEW CATTLEYA HOUSE AT MESSRS, VEITCH'S.

THIS grand new structure, which has been added to the already immense Orchid department at the Royal Exotic Nursery, is designed to prevent overcrowding in the other thirty odd Orchid houses, of various sizes, and to give a spacious home for the large masses of Cattleyas and Lælias which have for many years been collected and nursed by this old firm. It is now filled with a most wonderful collection, and presents already a display of bloom which may truly be said to baffle all attempts to describe. is plainly and substantially built with all the latest improvements in ventilation, &c., which experience can suggest, and it seems to be perfect in all respects, and likely to produce an improvement even in the previous good culture of the plants for which the house was built. Its length is 132 feet, width 22 feet, and height 14 feet, and it is heated by an 8 feet Trentham boiler and sixteen rows of 4 inch hot-water pipes, all of which are kept well under control by means of valves. On entering the house flowers appear everywhere, the whole of the staging from end to end being arranged alike with plants in bloom, the side mainly devoted to the varieties of Cattleya Mossiæ, being so densely set with flowers that from the doorway but few leaves are to be seen, and yet the plants are well furnished with them.

It is interesting to note the varying beauties of these most favourite Cattleya Mossiæs. In some instances the flowers are of a soft blush tint with dark crimson and orange labellums; in others the petals are light rose, and the labellums beautifully marbled with crimson and orange. Some plants have almost self-rose blooms, and others are nearly white, and all emitting that grateful Honeysuckle odour which goes so far in keeping this old servant high in the estiso at in keeping this out servant ingin in the esti-mation of all who love good flowers be they of Orchids or not. Mingled here and there about the house are some very fine varieties of C. labiata Warneri, which seen in a good form is one of our best Cattleyas, although an indifferent variety, scarcely tolerable. Considering the years the plant has been in the country, it is not yet nearly common enough. In rough terms, it may be said, that in Messrs. Veitch's new house will be found in bloom hundreds of plants of C. Mossiæ, C. Mendelii, and C. gigas, varying in size of specimen and form and colour of bloom, and presenting a grand display which all who are interested in such things should There are also many huge well flowered specimens, any one of which, apart from the general display, would reward the visitor. Perhaps the most beautiful plant in the house is a very large mass of a very fine form of the true C. gigas bearing thirty-six flowers of the most perfect form, the large flat violet-crimson labellum being well shown up by the pure white and yellow disc in the throat. It is indeed wonderful. Near it and giving a good opportunity for comparison, is a plant of the true C. g. Sanderiana bearing an immense four-flowered spike of bloom. The whole of the flower has an intensely lurid glow to its bright rose and dark crimson colours, and the whole of the plant itself has a dark-red tint. Some masses of Lælia purpurata with twenty to thirty flowers each, the welcome and agreeable scarlet and yellow tints of L. harpophylla, and L. cinnabarina; the large moth-like blooms of the L. majalis; the clear rosy beauty of a splendid bank of Odontoglossum vexillarium, and the flowers of numerous tall-growing Vandas and Sobralias,

present a most lovely spectacle.

But the grand display in this large building has not robbed the older portion of the Orchid department of any of its accustomed show or interest, for the whole of the houses are well-furnished with bloom. The new specimen Cypripedium-house, giving many fine things, both species and hybrids, such as C. Petrei, C. selligerum majus, the grand C. cardinale, C. Schroederi, many examples of C. Lawrencianum, C. ciliolare, many fine specimens of C. niveum, and of the best forms of C. barbatum grandiflorum, which quite put the old kind out of the field. The Phalenopsis house is as gay as ever, the recent

display of P. amabilis and P. Schillerlana being taken up by the P. graudiflora, assisted by some fine forms of the lovely pink-tinted P. Sanderiana, the rosy P. Schroederi and P. Luddemanniana rosea, the ivorywhite P. tetraspes, &c., and some fine tufts of Odontoglosum Roczlii, and the handsome leaved Anæctóchili, which seem to do so well here. The Dendrobes give fine examples of D. Bensoniæ, D. chrysotoxum superbum, D. suavissimum, the rare D. Falconeri giganteum, D. Dalhousianum, D. Derac, quantities of the various forms of D. infundibulum, D. draconis, the pretty little D. pulchellum, grand masses of D. thyrsiflorum, &c.

The East Indian range has a good example of Coclogyne Massangeana in bloom, and beside it a new Coclogyne of the same section, which may be said to be a fit companion for it. The plant is about 2 feet in height, with long slender pseudobulbs, and bandsome leaves. It bears a long drooping spike of some thirty attractive flowers, with tawny petals, and pure white and brown labellums, the colour being placed in the throat as with a grainer's comb, which gives it a very quaint and unique appearance. It is a very valuable introduction. In the same range are Aërides affine, with a dozen spikes; A. Schræderi, A. cris-



Fig. 143.—SHAM GRAFTING. (SEE P. 772.)

pum, and its variety Lindleyanum; A. Fieldlingii, and many other Aërides and Vandas, among which are exceptionally fine forms of V. cristata, V. lamellata, V. cœrulescens Boxalli, and a small plant of the best V. teres, bearing over a dozen of its large rose coloured blooms.

The old Cattleya-houses-not a bit impoverished by the new one—are gay with bloom, and contain as well as the C. Mossiæ, C. Mendelii, &c., some wellwen as the C. Mossae, C. Mendelli, acc., some wenflowered plants of C. Acklandiæ, and the beautiful yellow and crimson C. Dowiana. The Odontoglossum and other cold Orchid-houses for blomming plants now form a T range, but already preparations are being made for enlarging it, and throwing it into one large span, which will be a great improvement, as it will afford a better means of displaying the fine specimens which it always contains. At present it is in flower throughout, even the roof being called into request to bear numerous suspended pans and baskets containing the smaller species in bloom, the many Utricularia montana and U. Endresii being particularly attractive when so displayed. On the stages are quantities of fine plants of O. Alexandræ and O. Pescatorei in bloom. No Orchid collector ever seems to get enough of these, and giving colour and variety are fine specimens of the orange-scarlet Epidendrum vitellinum majus, the golden-yellow E. xanthinum, the ever-flowering E. Wallisii, the rosy E. arachnoglossum,

the pretty new white, black, and yellow Oncidium nigratum, O. Wentworthianum, Anguloa Clowesii, Miltonia Warsewiezii, Disa grandifora, many variously
tinted Masdevallia Harryana, the true M. Lindeni,
and uther interesting Masdevallias, Odontoglossum
sceptrum, O. Ruckerianum, O. Hallii, O. Andersonianum, O. Geerstedii, O. vexillarium, O. cirrosum,
O. Roezlii; Calanthes of the Veratrum-leaved section
and other rare things, together with the golden-laden
spikes of the O. macranthum, which are turning overhead, making a display which the expert who has
visited this great establishment will not be slow to
form some definite conception of. In this, too, as in
most of our other large collections, it is pleasant to
see that the plants are free from insects, and no trace
of the former troublesome "spot" is to be found;
indeed, Messrs. Veitch's plants were always free
from it.

MESSRS. BUNYARD & CO.'S NURSERIES AT MAIDSTONE.

THESE old-established nurseries appear to have taken on renewed youthfulness since they came under the enlightened management of the present head of the firm, and if the work done and the subjects dealt with are not so noticeable or so showy, and do not make much noise in the gardening world, there is yet apparently a considerable trade done in a class of plants the demand for which is constant and tolerably regular in the immediate neighbourhood, and also in the adjoining counties, wherever fruit growing has become a staple industry. Owing to the increased population of the town, much of the land on its outskirts has passed into the hands of the builder, and that of Mr. Bunyard being on high ground—the favourite position for the modern builder—was among the first to pass into other hands.

The exigencies of their trade, and the natural desire to be removed from even a remote chance of again having to clear out, have induced the firm to take up land on lease, about a mile and a-half from the town. This was formerly in greater part an enormous ragstone quarry, and the prodigious hollows, and heaps of dibris to be found all over the lower portion of it, attest to the great amount of costly planning work that was undertaken to fit it for a nursery garden. The precipitous heights were tumbled into the quarry holes, much rock lying near the surface was blasted, and turned into account as road material; heaps of stone rubbish were smoothed into the form of gentle swellings, and then faced over with a depth of soil sufficient for growing nursery stock well. All this work cost much money; and the grubbing of the remainder of the woodland added much to the expense. I was informed that this had been met throughout the carrying out of the work by catchcrops of various kinds, and which also acted in an ameliorating way on the rough crude soil. The condition of much of the stock now growing on this land speaks highly as to its fitness to grow excellent general nursery stock. Fruit trees are grown in great numbers, prominence being given to those common commercial varieties that suit the soil and climate of the county.

As, for instance, the prolific Farleigh Damson, the market fruit par excellence, and one that finds almost universal acceptance with the Kent fruit farmers, was observed in great breaks in different sites, and numbered, all told, ahout 30,000. The more generally grown Denyer's Victoria Plum, which finds so much appreciation round London and in most private places, number 15,000. The old purple Orleans is less grown than it once was, probably owing to its uncertain quality of cropping-one year yielding an abundance, and then missing several years. The tree has also an ugly propensity for dying off suddenly, in part or wholly, after the unaccountable manner of the Apricot. Other Plums grown in quantity are the Early Czar, a seedling from Prince Englebert, which it equals in size; the colour is dark red changing to purple, and it has the advantage of not cracking after rain. Another fine Plum is Rivers' Prolific, one of the late Mr. T. Rivers' seedlings from Précoce de Tours, and one that has become famous as the best flavoured early sort extant, just as the raiser ventured to predict it would be. The Pershore Plum, a prolific yellow market fruit, is another kind we find in the nursery in large numbers, there being of the three last named kinds about 5000 of each. Of the other kinds, mostly those in demand amongst gardeners in private places, there are forty, in all the different styles of standard, bush-trained,

and cordoo. The frosts of this spring have made but little havoc among any of the stock of either Plums or other fruit, and its usual accompaniment, the black or blue aphis, was remarked to be visible but in very small numbers.

Of Pears that are present in great numbers, are Williams' Bon Chrétien, Hessel, or Hazel as the growers name it; and the Chalk, a Pear much grown in the county. Of Apples there are very large breaks, consisting mainly of standards in various stages of development up to finished trees. Cox's Orange Pippin would appear to be held in much estimation, as there were to be found about 5000 trees in various forms. Worcester Pearmain, another Apple which takes on a high colour on Kentish soil, becoming thereby a favourite market fruit; and Keswick

of cold easterly winds which had much retarded the growth, there was a remarkable absence of the usually abundant black-fly, and the little that was visible was being diligently treated to a bath of quassia-water. Among white sorts of Cherries are great quantities of Amber Heart or Bigarreau Napoleon, Frogmore, and Governor Wood; and Black Heart, Black Cluster, and Rivers' Early among black kinds. We found bush fruit, which is much in demand, in large quantities, and especially Whitesmith and Lancashire Lad amongst Gooseberries, Baldwin Black Currants, and Kentish Cob-nuts. Of these last few other varieties are grown, and these in small numbers, for the supplying of private gardens.

This fruit ground looks quite picturesque when viewed from the high road that skirts it at the lower



FIG. 144. - MOCK-GRAFTING AS PRACTISED BY THE CHINESE (PHOTINIA AND JUNIPERUS). (SEE P. 772.)

Codlio, a culinary Apple well known in the London market, were to be found, each numbering 5000 plants. About 150 varieties of Apples are grown, either on free or dwarfing stocks, that appear to make excellent progress on this deeply stirred old woodland.

Manure is but spariogly employed, the manurial agencies found in the soil sufficing for the present, and moreover, the land is full of the smaller roots of trees and weeds that once covered it, and which in the course of their gradual decay will afford outriment for many successional crops of trees. Mr. Bunyard evidently sees in a few Apples of recent origin, such as Lord Grosvenor, Lord Derby, and Grenadier, worthy supplanters of the ancient Codlin and Hawthornden race—and is multiplying them accordingly.

The Cherry is, of course, very extensively cultivated, and wonderfully clean examples of the most popular kinds were observed. In view of the long prevalence

part-a border planted with Conifers, Hollies, and a variety of evergreen and variegated plants of moderate size adding to the finished look of the grounds thereabouts. The long grassy drives which lead into the heart of the nursery are likewise furnished with the same varieties of plants, having, in fact, the general aspect of the mixed shrubbery, thereby helping, in a very practical manner, a non-cognisant purchaser when making his selection. Prunus laurocerasus rotundifolia, whose extreme hardiness has now been absolutely assured in this country, is much grown, in preference to the common form of Laurel, its hardiness being not its only recommendation, as its habit is more compact and dwarfer, the bush spreading sidewards at a quicker rate than does the vertical growth. An orchard-house, measuring 60 feet by 30 feet, stands on high ground about the middle of the nursery. It is strongly but simply constructed, and is exceedingly light. Here we found a large number of fruit trees of the usual kinds—Pears, Apples, Peaches, Plums, Nectarines, Gooseherries—many of them literally crowded with fruits, especially Plums—Transparent Gage, Pond's Seedling, Jefferson's, Rivers' Prolific, and Rivers' Sultan. The trees were neat, small pyramids, which had evidently been one and a half year in pots, and were full of productive wood. They would remain there till July and then be put outdoors to perfect their fruit and growth, the exceptions being only the Peaches and Nectarines that are carrying fruits.

The holes found everywhere in the old quarry gave cheap facilities for making tanks, of which advantage was taken in the land adjoining the orchard-house. The rain water collected in these is found sufficient for all purposes connected with the growing of fruit trees in pots, and for that of Roses, and will, no doubt, tend to keep the plants healthier than well-water would do. These tanks have been built at various levels—the overflow from the higher placed ones is conducted to those at a lower level—and all waste of what is a valuable agent on this hilly dry land is obviated.

The Rose-bouse, adjoining the fruit-house, consists of two divisions, each 50 feet long by 16 feet, with brick side walls—a span-roof with a few ventilators in it. It is well adapted for the purpose, and was, as well as the other, built from Mr. Bunyard's own design. Here was a complete assortment of Tea Roses, planted out and carefully labelled, so that in taking buds, &c., there would be no liability to commit errors in substituting one sort for another. The same care was also displayed in keeping fruiting permanent cane: of all the sorts of Grapes grown for sale. M.

the Arboretum.

MEXICAN CONIFERS, - PINUS POPOCATEPETLI. Lindl.—It was at a height of nearly 3500 metres above the sea on the volcano Popocatepetl that I met this fine tree. It grows abundantly on the borders of deep ravines made by volcanic eruptions, and rendered more abrupt every year by the waters which are precipitated into them in consequence of the melting snows. What is curious here, is the strangely local character of this Pine, which never descends into the depths of these gorges, nor ascends much above them. I do not think there is a chance of the plant adapting itself to the climate of Central Europe, although the temperature in winter often sinks below - 10° to - 12½° C. (= 10° -14° F.); the long Mexican summers enable the wood to attain complete maturity, and in fact the low temperatures are accompanied by great dryness of the air. This species belongs to the group Strobus, and is nearly related to the Californian species, Pinus Lambertiana; the needles, 15-18 cm. (6-8 inches) long, and of a greyish-green colour, are in groups of five; when completely developed the scales fall—a special characteristic of the group Strobus. The cones are large, 50-60cm. (19-22 inches) long by 15 cm. thick; they exude abundantly a sweet resin; the seeds are as large as small hazel-nuts, and taste deliciously, especially when slightly roasted before they are eaten. In the Principality of Oaxaca-a rich and important town, situated in a valley on productive soil in a delightful country, with a delicious climate-given to F. Cortez as a reward for his services-is found another Strobus described under the name of Pinus ayacahuite, differing from the pre-ceding species in the smaller size of its leaves and cones, and near to Lord Weymouth's Pine (P. Strobus) of Northern America.

Pines abound in Mexico, almost every group is represented. Amongst the Binæ (leaves grouped in pairs) Pinus edulis; among the Ternæ (leaves grouped in threes) Pinus patula—one of the most elegant of Couifers, the needles of which, of a shaded greenish-yellow colour, are very sleader, about 20 cm, in length, soft and pendent. The effect produced is so strikingly picturesque that were it not for the impossibility of importing it into this country I should greatly desire to bring it under the notice of painters and landscape gardeners. I saw once an isolated specimen, covered from base to summit with crowded branches, when its beauty so impressed me that tears started to my eyes, and I returned more than once for a last look. We must not forget the species of the group quinæ (leaves in fives), belonging to the section

Pseudo-Strobus, so great in their diversity that on certain mountains each tree might pass for a distinct variety. Among the Silver Firs, Ahies religiosa, must be mentioned, with violet and green cones. the region of Réal del Monte, a mining country in the district of Tulancingo, in the province of Mexico, I also saw Pseudo-Tsuga Douglasii var. Lindleyi (Roezl), which is different from the famous Pseudo-Tsuga or Abies Douglasii of California, in its shorter, thicker needles, dark green on both sides. I discovered this in 1862; unhappily there only remained one good seed, therefore this pretty variety has not yet been introduced into European gardens. And now we are speaking of the disputed Pseudo-Tsuga Douglasii the reader may perhaps wish for my opinion on the value of this Conifer for German forests, and wish to know why I do not use in describing it the more general name of Abies. I will reserve my opinion on the first point, contenting myself with reciting two lines dedicated to it by a botanist of my acquaiotance :-

> " Abies Douglasii, Abies Douglasii, Is not the tree for German forests,"

As to the name of the plant, it is not a true Abies (Silver Fir). The Silver Firs bear erect cones, which fall on reaching maturity, leaving the wind to disperse both scales and seeds in all directions. It is quite different with the Pseudo-Tsuga: whose cones are pendent, and when ripe the scales persist and only the seeds fall; finally the needles differ completely in shape and position from those of Abies.

I have also seen in Mexico two Cupressus and three new Juniperus, independently of a new Taxus and a Podocarpus. In this Podocarpus as in Podocarpus neriufolia, R. Br. and P., and in P. andina (Prumnopytis elegans, Phil.), the fleshy seminiferous axis has no bracts and forms a succulent receptacle for the seed ; its colour is a beautiful reddish-purple, the seed itself blue, and their relative situations strange and peculiar. Imagine a purplish-red Cherry, the blue-coloured stone of which instead of occupying the inside of the fruit is at the top, and you can imagine my Podocarpus; the fructiferous red receptacle is suspended by a short stalk between the yellowish-green succulent needles. Before leaving the Conifers let me mention Taxodium mexicaoum, Carr., a forest of which with trunks 15 m. in girth, is situated at the foot of the Castle of Chapultepec, near the village of Taccibaya, near Mexico, the same which was formerly the house of the unfortunate Emperor Maximillian, and of his not less unhappy spouse. B. Roeel, in "La Belgique Horticole."

The Herbageous Honden.

COLUMBINES.—In my notes on Columbines on 7, 733 is a misprint, due, no doubt, to my bad writing; but the muscles of my wrists were so strained last week by carrying about two 6-gallon watering-pots full of water that I have an excuse. For "Columbines with a whole corolla" read "white corolla." As regards A. glandulosa one at least of my friends claims to have "the true typical plant," but Mr. Regel, of St. Petersburg, told me last year he had not the true plant, and had failed to get it from Turkestan. He sent me, however, seed of what he said was the nearest to it he had. I have sent flowers of the plants raised from this seed to Mr. Baker, and he says—"just what I understand as A. sibirica (Lam.); for A. glandulosa see Sweet's Flower Garden, vol. i, (2d series), tab. 55." This represents Gregor's A. glandulosa var. jucunda of Baker. C. Wolley Dod, Edge Hall.

NARCISSUS POETICUS PATELLARIS,—In Loudon this given as an English plant, and described as "spreading flowered, leaves erect." Haworth calls it "the large broad May flowering," and refers to English Botany, t. 275, and to Parkinson's Paradisus, p. 75, fig. 2, "Narcissus purpureus maximus, the great white purple-winged Daffodil." Narcissus Perfections recurvus Haworth calls "the drooping-leaved Saffron Sun," and a good figure of it will be found in Herbert's Amaryllidacee, plate 40, fig. r. I am thus particular, as I hope it will enable those interested in the varieties of Narcissus the more readily to distinguish between the two varieties, and if patellaris is really an Figlish plant, it may be met with in old English plant, it may be met with in old English plaradism. As regards Wolley Dod, I sent him one

flower each of the above-named, and the relative difference between the two flowers, if estimated by comparison, was about the same as there is between a shovel and a spade, and that I take to be sufficient to justify us in exonerating from blame Salisbury for naming patellaris, and Haworth for naming recurvus. Amongst the many cut flowers of double Poeticus Narcissus sent to me this season I have been much struck with a small and a large-flowered, and felt sure they must come from two varieties. On referring to Haworth I find he assigns the small double form to Poeticus of Linnæus, a small May-flowered variety, and the large double flower to patellaris. In the soils where the Narcissus Poeticus changes from single to double a good test would be found were ornatus tried, confusion would be avoided, as at present I do not think a double form of this early flowering variety exists. When Mr. Rolles Fryer has harvested the double Narcissus pods, will he kindly make known the result as to the number of black seeds in a pod? P.

NARCISSUS POETICUS PATELLARIS (see Gardeners' Chronicle, p. 738) is one of the varieties of Herbert. I presume that if it is found in different places the bulbs perhaps came from my nursery, as it figured formerly in the catalogues of my firm; lately it has not been quoted, as the stock was too limited for this : it will, however, now be offered again. It is a variety which seems to multiply not nearly so easily as the other varieties of Poeticus. I bought this form with a very complete collection of different Narcissus, more than thirty years ago, at Messrs. Osborn & Son's nursery at Fulham. This collection, consisting of about fifty sorts, all unknown in Holland then, was cultivated carefully, and years afterwards offered to the trade, and sold regularly in England, where a great number of these sorts meanwhile had been lost or could, at least, not easily be found. 7. H. Krelage, Haarlem, June 8.

Orchid Notes and Hleanings.

EXTREMES IN ORCHID SHADING. - When any particular practice connected with the cultivation of some kind of plant or plants has been carried too far, and the mistake has become generally admitted, it often happens that a rush is made in the opposite direction. This has evidently been the case with Orchids, which in some cases are now subjected by inexperienced growers to more sun than the condition of the plants or the character of the house in which they are grown will warrant. As one who has persistently pointed out the mistaken ideas prevalent as to the requirements of these plants in the matter of shade and the mischievous effects of the excessive shading at one time frequently looked on as necessary, it may not be out of place to offer a word of warning about the injury that may occur by indiscriminately allowing them to be too much exposed to the direct action of the sun. In this matter, as in everything of a kindred nature, circumstances have an important influence over individual cases; the exposure to the sun which it is advisable to submit a given set of Orchids to that happen to be in a condition to bear a maximum of its rays coming on them, may be injurious to others that by their previous treatment are wholly unfitted to stand its unrestricted force; for instance, a collection that consists of plants that from the time they were first imported have been grown in light houses with little shade, and where other conditions connected with their cultivation have been equally conducive to stout growth and tough leathery leaves, will bear with impunity an amount of sun that would result in yellow shrivelled leaves and bulbs with plants that had been subjected to heavy shading, combined with little air and a murky close atmosphere, the whole texture of such plants being comparatively soft and wanting in substance. Beyond this the description of house in which these plants are grown has much to do with the extent of shading that is necessary, a hip-roofed, or a lean-to structure facing east or west, or a span-roofed house with ends north and south, are each calculated by the position of the woodwork composing the roof to ward off much of the sun's rays in the middle of the day when it is in its fullest force, whereas the bars and rafters in a hip-roofed or lean-to house facing south, or

a span standing ends east and west, offer the least obstruction to the sun in the middle of the day when its rays are most powerful, and come with full force on the plants. The distance from the glass the plants are placed is another matter that requires to be taken into consideration in determining the amount of shade which it is necessary to give. Knowledge based on practical experience is needful to determine the amount of shading requisite in each individual case. In this as in many other matters connected with gardening there can be no hard and fast line drawn; but, this much may safely be said, that although it is a mistake to expose plants to more direct sun than the condition they are in will enable them to bear, still no more shading either in the length of hours the blinds are allowed to remain down over them or in the thickness of the material used should be allowed than the state of the plants and the character of the houses in which they are grown requires. T. Baines.

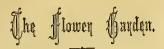
SAECOCHILUS UNGUICULATUS. — This is one of those species of which comparatively little is known, and which in itself has very little to recommend its general cultivation; but the species having recently been imported into the country in considerable quantities under the erroneous name of Phalænopsis equestris, it has become more common amongst us. Its characteristics are like those of Phalænopsis Luddemanniana, and unless the plant were in flower it would be difficult to distinguish the two. S. unguiculatus produces a greater profusion of flowers; they are borne in two distinct sets of about eight or ten, one set opening with the morning sun and remaining in perfection for about four hours, closing at midday, and at eventide finally falling from the spike. They are as large as an ordinary Phalænopsis rosea, transparent, white, with a few deep red spots on the labellum, and a yellow column, and while they remain open they emit a sweet odour. After the lapse of a few days the other set expand and follow precisely their predecessors. This curious species was originally introduced from Manilla, from whence also comes Phalænopsis rosea, and P. equestris is but a syn. of P. rosea. During the past week several plants have flowered in Mr. J. T. Peacock's collection at Hammersmith, and cannot but be regarded as simply a botanical novelty. W. Gestling.

CATTLEYA LABIATA PERCIVALIANA. — Of this Orchid, concerning which there was much controversy, a good coloured figure is given in the Orchid Album, t. 144. As explanatory of the variety of opinion that at one time prevailed, Mr, Williams says that "imported plants vary greatly in merit—more so in this than in any other Cattleya that has come under our notice . . . and many [varieties of this type] prove to be worthless, and unfortunately no one can tell whether individual plants will be good or bad till the flowers expand. The good ones are really valuable, for there is no other Cattleya in which the lip and throat are so richly coloured."

ARPOPHYLLUM GIGANTEUN, Lindl.—I met with this beautiful Orchid at Sante Comapan in the form of gigantic specimens densely covering the branches of the trees to the very tops of the mountains. Think of thin pseudobulbs, 40 centimetres long (12 inches), giving origin to leaves more than 60 centimetres in length, and to panicles of small, dull rose flowers, so crowded that there were more than 500 in a cluster. The prettiest specimens that I gathered bore about twenty-five of these flower-spikes—a splendid spectacle, to which no description can do justice. It is a singular thing that this Orchid is only met with in this particular region, although hills and mountains abound by hundreds, one behind another. Finally, let us mention the following fact as proto of the amount of resistance with which certain plants are endowed. Between the months of October and March these Orchids in their aerial condition are exposed to violent squalls, which blow from the north with such strength that it is difficult for a man to stand against them, It might well be thought that the plants would be uprotoed and scattered, but it is not the case; even the leaves are left iotact. Recal in "La Belgique Horticole."

ODONTOGLOSSUM ALEXANDR.E. -- Mr. Vanner has sent us from Camden Wood, Chislehurst, a couple of flowers of a superb variety of this favourite Odontoglot. They measure over 4½ inches across, are of beautiful form, and of the purest white, with a faint tinge of violet on a few of the sepals, and the fine fringed lip handsomely spotted with trinsson.

ONCIDIUM LIMMINGHH.—This species, described by Professor E. Morren in the Ediffuju Horticole, vit, p. 353, cic., when received at the Liège Botanic Garden from Caraccas, has been lately found in Brazil, by M. Binot, who has succeeded in introducing a number of plants to the Botanic Garden, Brussels, where M. Binot is for the present to be found. The plant is "a gem."



THE work of bedding-out should now be completed, but where such is not the case every exertion should be made to finish it as quickly as possible. The late much needed rains will assist the plants greatly in making rapid growth, and enable them to become quickly established and cover the beds. Constant attention will be required in tying, pegging, and stopping the young shoots till they have filled their allotted spaces, and until this is accomplished all the blossoms should be picked off, so as to encourage free and vigorous growth. After planting, the surface soil should be frequently loosened with the hoe, so as to eradicate weeds and at the same time admit the rain freely to the roots of the plants. When established, Pelargoniums, Calceolarias, Verbenas, and all similar plants will be greatly benefited by occasional applica-tions of weak liquid-manure or light top-dressing of such artificial manure as will stimulate them a moderate degree; this practice is much less troublesome and more advantageous and convenient than the practice of applying so much solid manure to the beds, because it can be used at the proper moment and withheld when thought desirable. The more tender subjects, such as Coleus, Iresine, and Alternanthera, which invariably suffer severely when exposed early, may now be planted, as the ground is sufficiently warmed to cause them to grow away freely, nor are we now likely to get frosts or cold storms to check their progress.

Advantage should be taken of this showery weather

transplant annuals, biennials, and perennials which have been recently sown and prepared in frames or in seed-beds in the open garden, and as most of them are during such weather very liable to be eaten by slugs and snails, they should be carefully protected from these pests by frequent light dustings with lime or soot; water should be given, and slight shade to protect them from scorching sun by using evergreen branches so as to prevent flagging till they

take root.

THE HERBACEOUS BORDERS are now particularly gay, and to keep them in perfect order no labour nor pains should be spared in staking, tying, and cleaning. The hoe should be kept freely at work amongst them, and as most of them are gross feeders, frequent deluges with liquid manure will prove very beneficial, not only in producing exuberant growth and abundance of bloom, but also in tending to increase the brilliancy of their colours and prolong the period of flowering. No class of plants are more beautiful at this season than the Iris and Pæony, and none appear to be more grateful for generous and liberal treat-

BULBOUS PLANTS which have matured their growth may now be taken up, dried, and stored till autumo. As the Persian Ranunculus are now showing bloom they should be freely watered in dry weather, and a partial shade from intense sunshine will be very advantageous. When well grown they make charming and most effective beds in the flower garden, and are particularly valuable, as they are gay during the interval between the early spring bulbs and summer flowering plants.

THE LAWN will now require special attention in mowing, sweeping, and rolling. A few days' neglect at this period will be plainly visible throughout the whole summer, and as with the rapid growth of the Plantain, Aconite, Daisies, and other objectionable weeds also appear, immediate measures should be taken to destroy them. For the broad-leaved weeds there is no better remedy than the application of sulphuric acid with a pointed stick, simply touching the crown of the plant with a drop of the liquid, and for the destruction of the smaller-growing weeds, frequent surface-dressings with finely sifted wood-ashes or good artificial manure are perhaps the best, as they stimu-late the fine grasses which will then outgrow and choke the low-growing objectionable weeds. The verges should be frequently edged, and the walks kept clear from weeds, and be frequently swept and rolled.

THE SHRUBBERIES .- All recently planted subjects should be freely watered and mulched during dry weather, and care should be taken that they cannot be swayed about by wind till they have become thoroughly established.

PRUNING cannot now be performed to any great extent; still, where the plants are crowded together, careful and moderate thinning and topping may be practised. All weeds should be eradicated by frequently forking or hoeing the ground, and where found necessary the surface should be top-dressed either with new soil or well decayed manure, as may be deemed requisite. T. S. C.

Che Gitchen Garden.

BROCCOLI, &c .- This will be a good time to get good breadths of Borecole and autumn and early winter Broccoli planted. Of the Borecole, the dwarf curled Scotch and Cottagers' are undoubtedly the best and the most bardy varieties, and in order to secure sturdy plants the seedlings, as recommended in a previous Calendar, must be transplanted into nursery beds before they become crowded in the seed-beds, and then, as soon as the plants have thoroughly established themselves, and before they get crowded, be finally planted out, and in the absence of rain carefully watered until they have taken root. Ground on which old Strawberry plants and early Peas have been grown is the best for receiving winter and spring Broccoli, the plants not making therein an over-luxuriant growth. In the act of planting the stem should be inserted in the soil as deep as the lower leaves, in order to keep them dwarf, so that in the event of a hard winter the plants may have the protection of both the soil and soow, if any; moreover, it is a fact that cannot be too well known, that it is the stems of Broccoli, Borecole, and kindred plants that suffer most, and that where these, through babit or cultivation, are dwarf, the losses through frost are inconsiderable, hence Borecole will succeed moderately well in almost any garden soil and position, but where a good strong open piece of ground can be given to it, the quantity and quality of the crop will be correspondingly enhanced. The green curled Kale should not be planted closer than 20 inches between the plants in the rows, and 2 feet between the latter; and Cottagers' Kale should be allowed from 9 to 12 inches more each way. The following varieties, together with Walcheren and Autumn Giant Cauliflowers, make a good succession, and a good planting should be made forthwith, in ground prepared as for Cabbage and Cauliflower plants, in drills 3 inches deep, 2 feet apart, and the same distance in the rows, viz. : -- Veitch's Self-protecting, Grange's Early White Cape, Early Purple Cape, Dancer's Late Pink Cape, Snow's Winter White, and Early Penzance. The later and stronger growing varieties of Broccoli should be allowed from 6 to 9 inches more room between the plants each way, using an iron dibber or a crowbar if the ground is very bard, as undug ground will often be, after Strawberries, &c. In planting Broccoli plants some kind of classification of the respective varieties, and the time at which they come in for use, should be observed, so that the crops may be cleared in convenient rotation, and the ground made available for other cultivation. Make another planting of Early London and Veitch's Autumn Giant Cauliflowers, and cover the heads of those now coming into use with the leaves, so as to keep them white and firm. Also plant out a sufficient number of dwarf Savoys and Brussels Sprouts in rows 15 inches by 12 inches apart. It is a good plan before planting to dip the roots in a puddle made of ordinary garden soil, with sufficient clay added to render it adhesive, and with which a few handfuls of new soot has been mixed. This will have the effect of making the roots distasteful to worms, which are sometimes very troublesome in gardens. Since we had recourse to dipping the roots in this mixture, we have had no further trouble in this Capsicums, where much in demand, may direction. now be planted out under a south wall in a bit of rich soil, which should then he watered to settle it about

SEED SOWING .-- Sowings of Broad Beans and Canadian Wonder French Beans, also Endive of the broad-leaved and green curled type, and Walcheren and Veitch's Aulumn Giant Cauliflower should now

be made, as also Mustard and Cress and Radishes, which, as previously recommended, should be sown every fortnight or three weeks during the summer. Early next week make another sowing of Scarlet Runners on the south side of the row sown proviously, assuming that it runs east and west, and in the event of the row running north and south the next sowing should be made on the west side; but the former position (respecting which full particulars were given in the number for April 19, at p. 515) is unquestionably the best, inasmuch as the first row protects the second. Make another good sowing of late and second early varieties of Peas (principally the latter) for yielding supplies late in autume, and about a week or ten days later Laxtoo's Earliest of Alt. Day's Early Sunrise, and William I, should be sown on a warm border to supplement the gathering from the preceding sowing. Successional sowings of Turniss (Early Soowball and Carter's Jersey Lily), Carrots (Nantes Horn), for autumn and early winter use, and Lettuces of the Cos and Cabbage varieties should also be made, and subsequently attended to when necessary in the way of watering, &c. be made, as also Mustard and Cress and Radishes,

GENERAL WORK .- This will consist of the earthingup of Brussels Sprouts, Cabbages, Cauliflowers, Broad Beans, French Beans, and Peas, together with the sticking and mulching between the rows of the latter sucking and mutching between the rows of the latter with rotten dung, the watering of seed-beds, seedlings, and freshly set plants, and rows of Peas and Beans, and Celery, when necessary, which, thanks to the bountiful rains, has not been the case lately. Vegetable Marrows and Ridge Coumbers, which should now bave the hand-glasses raised by tilting each corner, and the shoots taken out underneath in different directions. may have the hand-glasses of the shoots taken out underneath in different directions, may have the handglasses or tops removed in showery weather, &c. Recently transplanted herbs should not be allowed to suffer for want of water at the root. Tomatos out-of-doors will also require attention as to watering and the training of their shoots. H. W. Ward, Longford Castle Gardens, Salisbury.

The Bandy Squit Garden.

THE 2 inches of rain which fell here during the and fruit growers will naturally participate in the timely showers. There is every prospect of an abundant crop of Strawberries, it is therefore well to go over the plantation and pull out any gross weeds, which give an untidy appearance unless removed. Be careful not to tread on the first, which is now fast hastening to maturity; when once it is fairly ripe gathering should be done, selecting the early hours in the morning for gathering the day's supply, which should be put in a cool place till required. In country districts, and more especially where woods surround the garden, and especially after a mild winter like this, birds will be found very destructive to fruit, especially Strawberries and Cherries; old fish-nets are generally recommended for their protection, but after years of experience we have found the square-mesh nets made by Eddy, of Porthleven, Cornwall, far superior in every respect, and if carelast fortoight have much improved our prospects; the square-mesn nest made by Eddy, of Portifleven, Cornwall, far superior in every respect, and if carefully labelled and put away when not in use they will last for many years. The Fig crop promises to be an abundant one. Oftentimes, and more especially in the case of young trees, there will be a sudden rush into wood, and the fruit will drop; timely attention to stopping of the subsidiary shoots will prevent this, cause the fruit to ripen some ten days earlier.

and cause the fruit to ripen some ten days earlier.

Look over the Raspberry plantations, and remove any superfluous suckers, only leaving those which will be required for next year's crop. The autumnhearing sorts will form an exception to this, inasmuch that it is this year's shoots which carry the crop; therefore leave them alone, simply keeping the weeds down, except that the canes will be greatly hencited by being mulched with manure.

In gathering the green Gooseherries for imme-

by being mulched with manure.

In gathering the green Gooseberries for immediate use or preserving, have an eye to any overloaded bush, and gather from those, more especially in the case of young plants, which, thus relieved of their crop, will soon grow into sturdy busbes. The black Currant loves a somewhat moist situation, and nothing tends more to small, insipid fruit as drought the property of the property at the root. Mulching with any material, even lawn grass, will do; as to keep the roots moist is of great advantage to the erop. Where it is desirable to hurry on a few bushes of red Curants, this may be accomplished by stopping the shoots or removing half of

plished by stopping the shoots or removing half of them altogether.

Look over the Apricots for the last time, and remove any ill-placed fruit or any which may have previously escaped notice. Peaches are a splendid set, and will require atteotion in thinning the fruit, removing superfluous shoots and leaves with the cut, keeping all insect pests under. As the temperature has fallen again, put off the atternoon syringing till it gets warmer. J. Rust, Eridge Cautle.

APPOINTMENTS FOR THE ENSUING WEEK.

Royal Oxfordshire Horticultural Society's
Show.
MEDNESDIV, June 18
WEDNESDIV, June 18
WEDNESDIV, June 18
WEDNESDIV, June 18
THUPSDAV, June 18
Linguist Group State
YEAR after year we receive from astonished correspondents specimens of the certainly very astonishing CYTISUS ADAMI-a tree bearing flowers and leaves of the common Laburnum, intermixed with those of the very different Cytisus purpurens, and, what is more significant still, with branches showing every intermediate gradation in form and colour of stem, leaves, and flower. So much has been written about this extraordinary graft hybrid-for such it was asserted to be by its raiser-that in default of any information additional to that already recorded in these pages and elsewhere, we should not now venture to bring the subject under notice, were it not for two reasons. The first is to impress on those who have the opportunity of so doing, the desirability of carrying out further experiments by budding C. purpureus on to C. Laburnum and other allied plants. So far as we know, Cytisus Adami is solely propagated by budding on the common Laburnum, and no successful attempt has been made to produce the variety de novo, either by repeating ADAM'S original experiment, or by floral hybridisation in the ordinary way; and yet in no other manner can it be decidedly settled whether ADAM's original statement, that it was the result of budding C. purpureus on C. Laburnum, is the correct one, or whether it is merely a hybrid production in the ordinary sense. The plant was described by Mr. DILLWYN in our columns, 1841, pp. 325, 336 (see also p. 265), and 1842, p. 397, having previously been noted in the Gardeners' Magazine by Dean HERBERT. The fullest account of the plant, with numerous references to the literature, is to be found in BRAUN'S Rejuvenescence, 1851, English translation, by HENFREY, Ray Society, 1853; in Professor MORREN's paper in the Belgique Horticole, with coloured figures, in 1871; and a summary of the whole subject is to be found in DARWIN'S Variation of Animals and Plants.

vol. i., ed. 2 (1875), p. 413. With the exception of ADAM'S original statement (1825), the accuracy of which is questioned, we have little in the literature of the subject but negative results or bare assertion and statement of opinion, that is, so far as the actual origin of the plant is concerned. As to the negative results, neither CASPARY, nor REISSECK, nor DARWIN, who all made the attempt, succeeded in fertilising C. Laburnum with the pollen of C. purpureus. A record given in these pages, 1857, pp. 382, 400, in which it is alleged that grafts of C. purpureus were implanted on C. Laburnum, and which gradually assumed the characters of C. Adami, has been objected to as open to doubt, but a statement of a somewhat different, though cognate, character at p. 454 of the same volume is less open to doubt. In that communication Mr. F. E. MADDEN, of Ballinasloe, states "that in 1848 or 1849 I inoculated a lot of Laburnums with the purple variety (Adami); three specimens now remain widely apart in the nursery grounds. On one there are now thirteen tufts of Cytisus purpureus on the purple branches, one of them terminating the limb, and on two others six and nine similar tufts. Although yellow shoots have proceeded from the purple original (Adami), the Cytisus proceeds only from the purple Laburnum (Adami) in two instances; the purple and yellow-bloom proceed from the same bud, and in several instances single bunches of yellow bloom appear on purple branches, which are heaped with rich blossoms. One such bunch comprised thirteen racemes, but where an entire bunch of yellow Laburnum appears, neither C. purpureus nor the purple variety is seen in any instance, but the bloom is more luxuriant, longer in the racemes, and of a pale canary colour." This case is interesting as a statement of facts to which parallels are seen every year, but it proves nothing as to the origin of C. Adami, which is the really important point to be cleared up.

Another reason that has induced us to mention the Cytisus Adami is furnished by the receipt from Mr. COLE, of Ilford, of a specimen of BLACK CURRANT on which a WALLFLOWER was growing vigorously. It was impossible to believe in any actual graft between two such dissimilar plants, and on cutting down the stem it has been ascertained that the stem of the Wallflower has made its way up through the centre of the stem, pushing aside the pith-cells which were dead. In this manner we were enabled to trace the Wallflower stem up from the root of the Currant, but owing to the place where the section was made we were not able to see how and where the Wallflower made its entrance, as we have no doubt it did, from the soil to the Currant. There was no organic connection between the Currant and the Wallflower, the latter had simply bored its way up through the pith of the former. At first we supposed that a seed had germinated on the Currant and sent down its root, but we are assured by Mr. MURRAY, who has examined the specimen microscopically, that it is a stem, and so must have entered from below.

The case, then, furnishes a natural parallel to the artificially produced "greffe des charlatans" as practised by the Chinese and others. The illustration, fig, 144, p. 769, taken from a Chinese drawing sent home by Mr. FORTUNE, shows how a Photinia was made by those ingenious folk to grow togther with a Juniper. ANDRÉ THOUIN showed how the Charlatan's Graft might be imitated by planting within the hollow trunks of an Ash and a Lime a variety of other plants, the branches of which ultimately interlaced. (See fig. 143, p. 768.) Latterly, as we learn from the Revue de l'Horticulture Belge, the Dutch and Belgian public have been informed by the Press (we need not say we do not mean the horticul-tural Press), that black Roses may be obtained by grafting Roses on to Oaks; the Rose obtains thus tannin from the Oak, and the tannin acting on the iron in the Rose produces the black dye customary in such cases. All this is, no doubt, believed in by readers who take what the papers tell them for truth, and we must admit that, false as it is, it would not be more extraordinary than the case of Cytisus Adami. M. VAN HULLE-who is assuredly no charlatan-lets us into the secret of the Rose-Oak or Oak-Rose. He tells us that such a phenomenon exists in the Ghent Botanic Garden, having been constructed-we can use no better word-by the late M. DONKE-LAAR. And this is how it was done. A seedling Oak with a stem about 8 centimetres in girth was taken, a red-hot iron was passed up through the pith, through the channel thus formed a small Rose stem was passed. The formed a small Rose stem was passed. The two plants were placed in the same pot, and grew together. The original plant exists in the Ghent Botanic Garden, but M. VAN HULLE had to renew the Rose, for the original plant was in course of time strangled by the Oak.

— Fritillaria Macrophylla, — We are glad to be able to give a figure of this pretty Liliaceous plant (fig. 145), whose rosy-lilac flowers are very pleasing. It is a native of Nepal, and

one of those very numerous plants whose aim in life it seems to be to perplex botanists and upset all their nicely concerted plans, which work so well on paper, but so often fail in the garden. In fact, our present plant is not quite a Lily, and not quite a Fritillary, but something between the two. Mr. Baker, in his latest revision of the Lilla-ceæ, includes it in Fritillaria, and, moreover, shows that by right of priority it should be called F. macrophylla, but it is best known in gardens as Lilium Thomsonianum, having been so named by Dr. ROYLE in honour of Dr. ANTHONY TODD THOMSON, a man who deserved the compliment. To show the confusion that exists, it may be mentloned that while ROYLE, in his text—ROYLE, Illust. Plant. Him. (1839), p. 388, t. 92—calls it a Fritillary, his plate is marked Lilium. Mr. ELWES does not include it in bis Monograph of Lilium, and we imagine but few people grow the plant. For our specimen we are indebted to Mr. LODER. The bulb is one of the definite class, that is to say, the old bulb dies after flowering, but not before provision is made for next year's growth. soil suitable for the plant is a rich loam mixed with leaf-mould and fragments of limestone, with good drainage. It is figured in the Bot. Mag., t. 4725, under the name of L. roseum.

- NATURE REFRESHED .- The rain which fell so abundantly at the moment of our going to press last week, although in its coming signally falsifying the prognostications of the weather prophets, has yet given the most unbounded satisfaction. We have rarely wanted rain more badly - we have rarely had our need more thoroughly satisfied. Summer rains are too often of an eccentric slap-dash kind. They have a fashion of tumbling down like cataracts, washing everything either out of the soil, or deeply into it. In the present instance the earlier drops came like gentle dew, slowly, softly, and with singularly refreshing sweetness. Then gradually they thickened, and became dense, yet never rushing, and Then gradually they did not cease till the soil, if not saturated, had well drunken. A few more such gentle falls of moisture before the month closes will make us enter upon the beats of summer, should they come, with light hearts. As a result of the rain we see already a marvellous change in Nature, and there is a bursting and revival that illustrates forcibly the dormant powers of vegetation, which favourable weather enables it to put forth. Specially will pastures and the corn crops, Peas, Potatos, and Strawberries feel the benefit, and a load of intense care and anxiety has been taken from off many minds. The value of such a timely rain to the country must be incalculable; nay, if we did but take the low estimate of an increased yield arising from it to the extent of 20s. per acre of cultivated land, what a large sum that would represent! Agaio, we see an enormous impetus at once given to labour, for in all directions the land is now teeming with workers. week or two since and there seemed to be literally nothing to do, yet in a brief space it is hey, presto! change! and gardens and fields are the scenes of toil and activity. Even in the puttlog out of winter greens we see thousands of men actively employed at once, with the almost certain result that next winter will see an abundance of welcome vegetable products,

- MARKET POTATOS .- A metropolitan market gardener, who has recently paid a visit to Jersey, and has returned enchanted with the delightful equable climate of the favoured Channel Islands, states that Potatos rank amongst the favoured market crops of the one island he visited, and that as much as £10 per acre is paid as rental for land in which they are grown. The rows are very close together, the soil being rich, and the climate so delightful, promoting rapid growth, and the long process of earthing and other arts of cultivation are not practised. Our home growers of early Potatos find thus that they have severe competitors in their particular trade; but if the crops are good they seldom complain of prices, perhaps for the reason that home-raised Potatos, grown more naturally, and baving longer time in which to perfect the tubers, are not only much better flavoured, but are much more fitted to be articles of food. Here, as in Jersey, the growers mostly favour kidneys, these being not only earliest and most productive, but always obtain the best price in the market. It is worthy of remark, too, that homegrown Beauty of Hebron will always prove as acceptable as foreign Ashleafs. In spite of the very dry weather so long prevalent, home Potatos in good soil are looking extremely well, and now are making



FIG. 145.—FRITILLARIA MACROPHYLLA: FLOWERS ROSY-LILAC. A, LEAF; E, SECTION OF FLOWER; C, POLLEN, MAGN. (SEE P. 772.)

such rapid growth that the cultivator finds it hard work to keep pace with his crops. Immense breadths have been planted, recent good Potato years having given growers much encouragement. As a rule the Potato proves to be a safe crop, early ones especially, as they are run into market ere the disease can do much harm. As large quantities were planted so early, the plants have more root-force than usual,

- OLD ENGLISH VINEYARDS. - Sir JOSEPH HOOKER writes:-"As the subject of vineyards in England in old times is always interesting, I enclose copy of a passage from SWITZER'S Iconographia Rustica, vol. ii., p. 266 (London, 1718), and should be glad to hear through the pages of the Gardeners' Chronicle, whether the site of the vineyard in question is known :- 'That vineyards may be so cultured in England as to produce large quantities of Grapes, and these so well ripened as to afford a good substantial vinous juice, needs no demonstration, when in several parts of Somersetshire there are at this time flourishing vineyards; and the vineyard of the late Sir WILLIAM BASSET, in that county, has annually furnished some hogsheads of good bodied and palatable wines, which I have been credibly informed by gentlemen who have drank considerable quantities of it with the greatest satisfaction. It is not so much owing to the inclemency of the air here in England, that our Grapes are generally so much inferior to those of France and other hotter climates, as to the want of an exact culture; though I confess at the same time, that the best management will not answer our expectations without a tolerable season to ripen the fruit : and sometimes the variousness of the weather in the summer will unavoidably render the fruit sour and immature, and this does not always or generally happen, and therefore we are not to be discouraged.'

— HUDDERSFIELD CHRYSANTHEMUM SOCIETY.—A committee of forty members, organised to promote the formation of a Chrysanthemum society in Huddersfield, have met with so much local support, financial and otherwise, that they have decided to hold an exhibition on Nov. 14 and 15 next.

- BOTANICAL NAMES. - Mr. RANDAL H. ALCOCK has published what appears to be merely a re-issue (with a page of corrections) of a useful book brought out by him some years ago under the title of Botanical Names for English Readers (DEANSFIELD & Co., Manchester). It is notorious that those who really care for plants find no insuperable difficulty in acquiring the terminology of botany, and that those who raise an outcry against the ordinary nomenclature are, for the most part, those who have so little interest in the matter that they will not take the little trouble required to master it. The operatives of Lancashire interested in plants, even though destitute of a classical education, easily acquire botanical names. The present work will be found a useful aid in overcoming the difficulties we have named, so far as the names of British plants are concerned, but it seems a pity that occasion was not taken to render the book more complete, and more particularly to have incorporated so much as was needful of the modern canons of botanical nomenclature as drawn up by M. A. DE CANDOLLE, adopted at the International Botanical Congress of 1867, and fully discussed in that very useful and, strange as it may seem, attractive volume, La Phytographie. Had this been done the incompleteness of the preliminary historical sketch might have been passed over, as, however interesting, relatively of secondary importance.

— THE BATTLE AMONG PLANTS.—It has generally been assumed that Rhododendron hirsulum prefers a limestone soil, and R. ferrugineum one that contains no lime, but according to Dr. CHRIST, of Bale, when either of these species grows by itself it can accommodate itself to the most varied soils; but when they grow together, R. hirsutum, finding a limestone soil most propitious to its development, overcomes its companion, which thrives best on a soil into the composition of which lime does not enter.

— THE PHGENIX HOEING AND RAKING MACHINE is a new appliance for cleaning garden walks, invented by Mr. Ennis, gardener, Emo Park, Portarlington, and which as a labour-saving implement seems to be meeting with much favour in the Emerald Isle. The patent rights have been acquired by Mr. THOMAS MOORE, Ormond Quay, Dublin, the

proprietor of the Farm, Forest, and Garden, who, on the 5th inst., put the machine to a severe practical test in The People's Garden and the Phoenix Park, Dublin, in the presence of Mr. Dick, superintendent of the park; Mr. F. W. Moore, Glasnevin; Mr. F. W. Burbidge, Trinity College Botanic Garden; Mr. Ambrose Balle, Mr. Knowlden, gardener to the Duke of Leinster, Carton; Mr. Blackburn, Abbotstown; Mr. Garnier, late of Kylemore; Mr. Sheppard, landscape gardener, Dundrum; Mr. Douglas, gardener to Lord Monck; Mr. McCulloch, gardener to Lord Powerscourt; Mr. McKenna, gardener to the Chief Secretary; Mr. McKenna, gardener to the Cher Secretary; Mr. David Pressley, late gardener at Knockmaroon; and Mr. John Cairns, who at the completion of the trials signed the following testimonial :- "The Phoenix Hoeing and Raking Machine for garden walks and carriage drives was tried to-day (June 5) in the Phoenix Park, Dublin, under our personal inspection; and it is our unanimous opinion that the machine is a thoroughly practical and efficient labour-saving horticultural implement." In an early issue we shall give a description and illustration of the machine, which appears to us to be worthy of the attention of gardeners having large areas of walks and drives to keep in order.

— WARAS,—Under this name a substance used in Arabia as a dye, a cosmetic, and a specific against cold, has been lately attracting attention. Mr. W. T. THISELTON DYER in the *Pharmaceutical Journal describes it as consisting of the glandular hairs and exudation therefrom from the surface of the pod of a leguminous tree, Flemingia rhodocarpa, native of Eastern Tropical Africa. A closely allied or identical species occurs in Southern India,

— BECONIA LYNCHEANA, — "A very noble species of a genus, the ornamental species of which, numerous as they are, both Indian and American, are far from being exhausted for garden purposes." It is a Mexican species, introduced by ROEZT, and has been called B. Roezlii, but that name is preoccupied. It is a handsome species, with tall erect branching stems, glabrous cordate-acute, denticulate, and large terminal many-flowered panicles, each flower about 1½ inch across. The plant is figured and described by Sir Joseph Hooker in the Botanical Magazine for June, 1884, 1, 6758.

— Mr. J. T. PEACOCK, Sudbury House, Hammersmith, has sanctioned the opening of his collections of Orchids and succulent plants for public inspection for a short time in aid of the funds of the West London Hospital.

- HARDY HERBACEOUS PLANTS AT MAN-CHESTER .- To many the groups of these at the recent show were objects of great interest, at the same time they were to some extent disappointing. They had they were to some extent disappointing. They had too much of the character of plants forced into bloom, and some of them were made-up plants. The fact that some—perhaps the majority—had been pushed on into bloom under glass imparted to them a drawn and weedy appearance, and affected both the colour and size of the flowers. It is a state of things that is perhaps inevitable. The Whitsun show falls between the time for the spring and early summer flowering subjects, when there is some difficulty in getting a sufficient number into flower, and to make up a collection of sixty or more plants some shifts must be resorted to. It happened at the recent show, owing to the crowded state of the exhibition, that the space allotted to the collections was insufficient to enable the plants to be staged to advantage, and they were unduly crowded, especially as some of them, such as Lilium longiflorum and others, were quite large specimens. Perhaps it would be well if classes were made for forced and unforced plants, though it might be difficult to say which were forced and which unforced, or if such a distinction should be found impracticable the number of plants might be reduced in order to get a more select representation. A wide latitude was given by exhibitors to both terms "herbaceous" and "alpine," and disqualifications on these accounts are to be deprecated without some previous intimation in the schedule of prizes, for these irregularities have been sanctioned at previous exhibitions by the awarding of prizes.

— VERONICA LYALLI. — Of all the shrubby New Zealand species of recent introduction, this one, added to our collections about four year ago, and again exhibited by Messrs, VEITCH, on Tuesday,

may indeed rank as one of the best. Quite a number of species of the New Zealand type are flowering on the new rockery at Kew, and some of them quite profusely, and while it is impossible to deny the neat attractive habit, together with the floriferousness of many, V. Lyalli is indeed a floral gem of modest beauty. It is a low compact bush, from 8 to 12 inches high, and literally covered with white flowers with a radiating violet-purple eye. The individual corollas are several times the size of those of the other species, and are produced in axillary racemes towards the apex of the short branches. Like V. Traversi and V. pinguifolia it is all but hardy in our climate, except in exceptionally severe winters, and is well worth while keeping in stock in the reserve pits amongst other choice, rare, or half-hardy subjects.

—— SHOW PELARGONIUMS.—We learn that Mr. TURNER, of Slough, will send a large collection of new show Pelargoniums to the exhibition of the Royal Botanic Society on Wednesday next, June 18, including some seedlings of very rich colours.

—— TRICHOCAULON PILIFERUM.—A remarkable Stapelia-like plant, with thick erect cylindrical bluot stems, covered with tubercles, tipped with single prickles, something like a Cucumber. The flowers are star-shaped, pupilish, and like those of a small Stapelia. Botanical Magazine, June, 1884, t. 6759.

— PAPAVER ERACTEATUM.—Last year an enthusiastic gardener residing in a favourable spot near the sea-coast on the South of England, having a bed of Yucca aloifolia, wanted someting to mingle with them during summer. He tried several subjects, and at last hit upon Papaver bracteatum. The result was all that could be desired. He raised plants from seed, and was delighted with the rich colours he so obtained. There were shades of pale scarlet, and some of the deepest crimson, with fine touches of intermediate tints. He saved seed from two or three of dwarfish growth and finest in colour, and proposes to raise a batch of seedlings every year. This fine, bold, and showy plant should be in flower borders, in order to succeed the Pæonies, for they are very gay during the summer months. The rich shining black blotches on the bases of the petals are in marked contrast to their brilliant colours.

RANUNCULUS GLACIALIS.—This species has been found on the Swiss Alps at a height of 4270 metres, so that not only mosses and lichens, but flowering plants exist above the snow-line—a fact paralleled by the occurrence of flowering plants in high latitudes in Greenland, as noted by us some time since. In Switzerland, according to Dr. Christ, there are 249 species not found beyond the high alpine region; sixty-four of these species are spread throughout the polar regions.

—— FRENCH RANUNCULUSES.—A large number of varieties of these pretty flowers were received by us lately from Messrs. ANT. ROOZEM & SONS, Haarlem, the many different shades of colour, and the perfect form of the greater portion of them making a most charming collection. It is a plty their beauty is not more generally recognised by our gardeners, their easy cultivation, rich and varied colours, and their capability of making, when sufficiently close planted, telling masses of colour in beds or horders, ere the summer bedders display their flowers, should again make them favourites in the garden. Their red and scarlet colours do not glow like those of the Anemone, and they bloom somewhat later, although this last depends in a measure on late or early planting; and no flowers last longer when cut and put into water.

— LILY OF THE VALLEY ROOTS,—In a communication to the Medical Tribune, as quoted in the Pharmaceutical Yournal, Dr. KUNZE states that while passing through a large New York drug store in the third week of January he was surprised to notice two open barrels filled with fresh roots of Convallaria majalis. Upon closer examination and inquiry be found that these roots were from forced hothouse plaots, from which the flowering stem and leaves had been cut off for the flower market, and that this practice of turning the exhausted roots to account was not uncommon. Under these circumstances Dr, KUNZE thinks it is not surprising that physicians fail to obtain the results expected from the use of preparations of Convallaria, and he suggests that the old

astrologers, in requiring that a plant intended for medicinal use should be gathered under certain planetary influences, had the advantage in practice, since the gathering of the plant in the best possible condition was probably thus secured,

—— SOCOTRINE ALOES.—The plant yielding the true Socotrine Aloes, the produce of A. Ferryi, has been introduced into Natal, and the drug will probably become in course of time an article of commerce in that colony.

- CARNIVOROUS PLANTS .- Although physiologists have universally accepted the facts originally proposed by DARWIN as correct, yet there has been a disposition in some quarters, if not to question the fact, at least to doubt its utility. Mr. FRANCIS DAR-WIN undertook some experiments to satisfy the latter point, and now we have to record the results of some experiments made by M. BUSGEN. This gentleman commenced his experiments with seedling Droseras, and ascertained that the digestion of nitrogenous matter begins with the appearance of the first leaf, The experiments were continued for two years, with the result that those plants "fed" with nitrogenous diet in the shape of aphides and small insects were the more vigorous. Fourteen plants so treated produced seventeen flower-stalks and ninety seed-pods, while sixteen plants not so treated produced only nine flower-stalks and twenty seed-pods. More conclusive still were the results of analysis, which-we cite from the Annales Agronomiques, 1884, p. 238-showed for the first set a total weight of dry matter (remaining after the expulsion of water by heat) of 0.352, while the unfed plants yielded only 0.119 parts of a gramme (= 15 grains).

- PINKOS TUBERS. - "Under the name Pinkos-knollen," says the Pharmaceutical Journal, "a very hard red woody substance has lately been introduced into the Vienna market, probably from Australia, which is found to be almost as valuable for turning purposes as ivory. Dr. Franz von Höhnel has subjected this substance to careful examination, and has determined, from the following characters, that it is the product of a coniferous tree belonging to the family Araucarieæ:-1. The absence of true vessels. 2. The absence of resin passages. 3. The extremely thin-walled medullary rays, consisting of a single row of cells, compara-tively large, and placed in hulgings of the tracheids. 4. The remarkable pits which indicate the tracheids on the borders of the medullary rays. 5. The large bordered pits of the tracheids, which meet from opposite sides, usually placed in two rows, and then nearly polygonal. 6. The sclerenchymatous pith, from 4 to 5 millimetres wide. The so-called 'tubers are turnip-shaped, 15-40 centimetres long and 7-16 broad: and apparently broken off at one end, running out into a point at the other end. The tranverse section shows a sclerenchymatous pith, 4-5 millimetres wide, surrounded by a number of very narrow annual rings, the older of which are concentric, the outer ones strongly excentric. They are usually sovered by rotten wood and soil, and are probably gigantic knots which have fallen out of decaying and mouldering trunks in the primeval forest. the genera of Araucarieæ they must be derived from either Araucaria or Dammara, and very probably from Araucaria Bidwillii, the 'Bunya-bunya Pine,' a native of New South Wales."

— RANUNCULUS BRUTIUS. — On the new rockery at Kew there is a fine clump of this pretty Buttercup. It is not unlike some forms of R. acris in the cutting of the clustered dark green leaves, and the creamy-vellow flowers are borne in great profusion on simple or slightly-branched stems about a foot or less in height. R. brutius is a native of Southern staly.

— ROYAL METEOROLOGIAL SOCIETY.—At the ordinary meeting of this Society, to be held at 25, Great George Street, Westminster, on Wednesday, the 18th inst., at 7 F.M., the following papers will be read:—"The Equinoctial Gales—do they occur in the British Isles?" by ROBERT H. SCOTT, M.A., F.R.S., President; "On the Physical Significance of Concave and Convex Barographic and Thermographic Traces," by the Hon. RALFH ARRGEMENT, F.R.Met.S.; "Maritime Losses and Casualties for 183, considered in Connection with the Weather," by Charles Harding, F.R.Met.S.; "The Helm

Wind," by the Rev. Josh. Brunskill, F.R.Met.S.; "Climate of the Delta of Egypt in 1798—1802, during the French and British Campaigns," by W. T. BLACK, F.R.Met.S., Surgeon-Major. The commemoration dinner will take place in the Holborn Restaurant, High Holborn, on Tuesday, June 17, at 6.30 P.M.

RHODODENDRONS AT THE HEALTH EXHIBI-TION.-These plants have been in splendid bloom during the last week, the rich glowing colours of the flowers lighting up the paths and courts, and the avenues about the buildings in a way that no other plants can do at this season of the year. The question may have presented itself to some persons as to what condition of bareness we should be reduced in the flower garden during the months of May and June without our showy genus, the Rhododendron. There is simply no shrub grown in Britain that can usurp or ever fill its place; in fact, in garden adornment and when out of bloom, its massive dark green leafage will form no mean screen for the unsightly upright iron and wooden walls, and other things and places not of beauty, to be found about the congeries of buildings. Much praise is due to those public-spirited enterprising firms of nurserymen who, at great expense, have brought and arrayed their shrubs, Conifers and Rhododendrons, so artistically. Foremost amongst them, as regards the numbers planted, are Messrs. LANE & Son, of Great Berkhamstead, whose fine bank of the latter shrubs runs in an irregular border right and left of the electric mast. These occupy a shaded, albeit an open position, and act as a blind to a long flat range of buildings. In the main centre path of the garden, and quite encompassed by high walls, Mr. ANTHONY WATERER, of Knap Hill, has a beautifully flowered number of both very large plants, and many of various heights and dimensions which form one of the finest leatures in the place. Mr. WATERER had placed canvas shelters over the border, so that the flowers will remain much longer in bloom than others not so protected. Under this light-hued and brilliant flowers show up wonderfully well, but the effect on the dark ones is very much to lessen their effect; yet the balance of advantage is in retaining the protection, so as to have a feast of flowers for as long as possible. One of the prettiest nooks is that which is found at the Bishopsgate, and by the side of the Prince of Wales' Pavilion. Here Mr. MAURICE YOUNG, of Milford Nurseries, Godalming, has planted three sides of a square plot with the Rhododendron, the fourth side being only partially occupied with an oval bed containing also dendrons. The shade thrown by the buildings, and the grateful coolness of the site generally, have promoted the gradual openiog of the flowers, and their retention in freshness. The plants were in most instances quite loaded with bloom, and the emerald turf in front of the borders making the best of setting for them. He has also a border of half-standards and dwarf bushes on either side of the highway to Old London. Mr. C. NOBLE, of Sunningdale, has a fine lot of Rhododendrons arranged with much taste, amongst them being several grand specimens. These plants enter into the pretty miniature garden of Messrs. C. LEE & Son, of Hammersmith; this occupies a retired position near the London Waterworks Companies' pavilion. Among the sorts we noticed such old kinds that seem almost indispensable -- elegans roseum, elegans purpureum, elegans album, some of the oldest Catawbiense hybrids of Mr. JOHN WATERER's raising. These are robust, hardy, and good bloomers. Then Everestianum, good under glass but still better outside, the lilac and white contrasting capitally with vivid reds and crimsons; perspicuum, a pretty blush, that alters with age to white; Minnie, another blush variety with chocolate spots; the free and hardy Nero, of dark rosy-purple; H. H. Hunnewell, a sort large in truss, of a rich crimson. Lady Eleanor Cathcart was seen in several collections, lighting up splendidly, with its pale-rose blooms. There were splendid plants of Barclayanum, an old crimson kind, that is of great value for its lateness in blooming. This and John Waterer, another crimson flower, that is a free-flowerer, were employed with good effect in Mr. Young's groups. Onslowianum, a blush flower, having a pale-lemon eye, and Princess of Wales, a rose shaded with purple, were conspicuous by their good condition. Lady Armstrong, a palishpink flower, was very fine: this was one of the choicest kinds seen. Mrs. John Penn, a pale salmon; Salvini, a free-blooming purple; the old well-known purplish-crimson Caractaeus, Lady Winifred Herhert, a handsome fringed deep rose-coloured bloom—the habit of the plant is good, and it is a very desirable variety. Princess Mary of Cambridge, light blush, with carmine edge to the petals, was another indispensable kind that was observed in many places, as was Sir J. Whitworth, a fine big purple-rose, that onght to be recommended for its quality of late blooming. Concessum, old, but beautiful, the colour a pure rose. Those named constitute some of the better known varieties that were met with in large sized examples in the different groups.

- STOCKS FOR BUNCHING. - This is saying something, but not nearly enough, in praise of some Stocks now to be seen growing in Messrs, SUTTON & Sons' seed grounds at Reading. There are to be seen Bromptons, Capes, autumnals, &c., but the particular strain to which attention is being called is a very dwarf, bushy, hardy, and wonderfully free branching, and therefore free flowering type of the Intermediate; dwarfer and more compact in growth than the Queen type. It is a strain that does not throw up a hold central spike like the Brompton, but they branch freely from the very base of the stem, and every branch is covered with flowers, and these vary in colour from deep purple to manve, scarlet to rose, brick-red and pure white. It seems to be a tough and hardy race, likely to stand frost and wet alike. The winter having been so mild has been highly favourable to the well-being of biennial Stocks; there was no frost to harm them, and they have been and are flowering gloriously. It does not appear that any particular designation is given to this strain, but gardeners and market growers alike will find it extremely useful for cutting from, and also for planting out for decoration in early

— PRESENTATION.—On the occasion of Mr. SMITH leaving the nurseries of Messrs. RODGER, MCCLELLAND & Co., of Newry, the workmen of that establishment presented him with a tea-service and an address.

- THE WEATHER .- General remarks on the temperature, rainfall, and duration of bright sunshine, for agricultural and sanitary purposes, during the week ending June 9, 1884, issued by the Meteorological Office, 116, Victoria Street, London, S.W.:

—The weather during this period has been cold, cloudy, and very unseasonable, especially over the southern, midland, and eastern parts of England. The winds have been north-easterly and northerly, but not strong, and the general conditions of a complex cyclonic character. Thunderstorms occurred in many parts of England between the 6th and 8th. Thunderstorms occurred in The temperature has been below the average everywhere, the deficit ranging from 4° or 5° over Ireland and the greater part of England to only 2° in Scot-The highest readings were those recorded over our Midland Counties on the 4th, where the thermoroeter rose to 71° or 72°, while the lowest registered over England occurred toward the latter portion of the period, and varied from 44° to 46°. land, at Nairn, the sheltered thermometer fell to 39° or 40° on several occasions. The range during the week The rainfall was largely in excess over our southern, midland, and eastern counties; in "England, S." the amount registered was nearly five times the average. In Scotland and Ireland, however, there was a decided deficit. Bright sunshine.-This was very deficient at the English stations, only 7 per cent. of the possible duration being recorded in "England, S.," 11 per cent. over the "Midland Counties," and 19 per cent. in "England, N.E." In the north of Scotland, however, the percentage recorded was 45, in "Scotland, E." 33, and in the Channel Islands, 34. Depressions observed.—These were very shallow, and their movements extremely irregular; in many cases they appear to have been formed, and to have dispersed over our area. The behaviour of one, however, deserves special notice. Advancing in a west-north-westerly direction from the Baltic, it lay at 8 A.M. (5th) over the Skager Rack. Thence it continued its westerly motion, and arrived near the Shetlands at 8 A.M. on the 6th, and passed out to sea through the Pentland Firth during the morning.

—— GARDENING APPOINTMENTS.—Mr. R. R. WHITFIELD, late Foreman at Marton Hall, Middlesborough, as Gardener to JAMES MONTAGUE, ESC., Melton Park, Doncaster.—Mr. EDWARD BAXTER, formerly Gardener at White Lodge, East Barnet, as Gardener to R. C. L. BEVAN, Esq., Trent Park, New Barnet,



THE PLANTING OF THE TOWN MOOR, LEEDS.

WOODHOUSE MOOR is a large expanse of ground, commanding extensive views. It lies west of Leeds, about twenty minutes walk from the Town Hall of that borough. It was formerly overgrown with Whins, and in wet times was boggy. The Corporation purchased the moor some years ago, and an attempt was made to improve it. This was sturdily resisted by the older folks, who were under the impression that the Corporation intended "to steal it." ever, the corporate body persevered. The moor, which has a strong clay subsoil, was land-drained, but the mistake was made of covering up the tiles with the subsoil, and the result followed that the water could not get away. While the surface was wet the drains were perfectly dry. One portion of the moor was planted, some fourteen or fifteen years ago, by Mr. Rider, of Moortown, but the soil was poor, the plantation bad no attention, the trees were allowed to grow higgledy-piggledy, there was no pruning or thinning, manuring or improving the soil was never thought of, and stunted growth was inevitable. How the trees lived or throve at all was a marvel. No one in the Corporation seemed to have an idea that an intelligent forester was required to superintend the plantations. Men were appointed to take charge of the moor, well enough in their way, but not sufficiently versed in forestry. The forest trees are mere bushes; scores of them are ruined as to form and shape, and the old nursing Poplars, whose time is long past, are left standing, to the great injury of the Limes, Sycamores, Chestnuts, Alders, Beeches, and other forest trees that require light, air, and "elbowroom" to expand into nobler growth. Concreted walks were laid across the moor, and Councillor J. Hardwick paid for forest trees to form avenues. These trees all died, and no wonder. Holes were dug in the clay, forming natural reservoirs for water; soil was put in, and this receptacle received the handsome and healthy young trees. When this first attempt failed bigger holes were dug in the clay said to be drained, more soil was added, and large un-wieldy trees were planted. The moor is exposed to the full force of the westerly, south-west, and northerly winds. Staking the trees was a necessity, but no staking can keep these big trees steady on such a

bleak and exposed moor. Next an enclosed plantation was formed, and so successful was this attempt that it was evident all that was needed to ensure success in growth was shade and shelter. Acting on this idea, Mr. John Lee, who is connected with the Leeds Times, and who has had some experience in connection with the Bradford and other parks, conceived the notion that he could make the moor "blossom like the Rose." With the permission of the Corporation he selected one of the bleakest and most upfavourable portions of the expanse, and there constructed a rockery. Everybody laughed at the idea, and none more so than the professional gardeners and nurserymen. The modus operandi was simply in this wise :- Taking off the soil and subsoil down to the clay, the site was thoroughly drained; then a layer, some 18 inches deep, of what are known as "dry midden ashes, containing no small amount of ammonia, were placed on the clay. A deposit of "gully muck," which had been lying rotting for several years, was "discovered" on the moor, and this material was laid on the top of The old soil of the moor was put on the the ashes. "gully muck," and layer on layer this pile was raised to a height of 6 feet in the centre, and sloping at the sides. At the Aireside Hematite Iron Works, near Leeds, is produced a grey slag, prettily honey-combed, impervious to moisture, which resists the blackening effects of the Leeds smoke, and is admirably suited for rockwork. Mr. Leonard Cooper, manager of the works, kindly gave some 60 tons of this material, and with it the rockery was built.

Four enclosed circles were formed, each one facing a different point of the compass, with narrow open mouths. The circles of stones rise from some 3 feet in front to 4 or 5 feet at the back, and in the centre of the entire design is the great mass of piled-up earth, sloping inwards at the top, to catch all the moisture that falls. The rockery was planted with Sycamore, Elm, Alder, black Poplar, Mountain

Ash, Copper Beech, Silver Poplar, Hawthorns, Weigela, Viburnum, Ghent Azaleas, Rhododendrons, Hollies, Aucubas, Golden and common Elders, Southernwood, Honeysuckle, Ivy, Heaths, Alpines, double Whin, and various creepers. Ferns, Primroses, Polyanthus, Seduns, Saxifrages, and herbaceous things generally, were placed in the interstices between the stones, and a few annuals were sown. The work was commenced in February, 1883, and from that time forward up to now—thanks to the mild winter—the "Lion" Rockery, as it is called, has never been without bloom. Primroses on Christmas Day on Woodhouse Moor were a sight that the Leeds people never expected to see. Whichever way the wind may blow three of the circles are sheltered, and while each is warmed by the sun, on none of them does it shine all the day. Gardeners will understand the advantages of this "shade and shelter" on a breezy moorland height.

During the summer and autumn of 1883 the rockery was brilliant with bloom; hundreds of bees hummed about it, and the perfume was delicious. Those who had said that "nothing would grow on Woodhouse Moor" were confounded, and the professional gardeners were astonished. Trees, shrubs, plants and annuals all throve, the bloom was unusually fine, and many were the queries as to where the wonderful plants and seeds came from that showed such surprising results.

It was all very simple. The Corporation produce at their sewage works a black mould that has extraordinary properties, and at their destructor works is a residuum, made from the refuse vegetables of the markets, equally good. The gardeners would not look at these valuable materials. By judicious mixture with the common soil of the moor luxuriant growth was secured. Objection was raised that this material was unnaturally forcing growth, and that the things in the rockery would go back as fast as they had progressed. The answer to this is now seen on the moor, where the "Lion" Rockery is covered with most luxuriant growth. Thinning out extensively is a necessity, and many barrowfuls of stuff have had to be removed to prevent over-crowding. The storms that blow over the moor are terrific. was said that the wind would tear everything up, and scatter the plants far and wide. This has not happened yet. The growlers asserted that the trouble was not worth the candle, as there would only be greenery five months in the year. The terrible storms of the last winter did not disturb or destroy anything, and the various varieties of Sedums, Saxifrages, as well as the evergreens, have kept up the brightness and greenery of the rockery ever since it was erected.

It was planted by Messrs. Rider, of Moortown, near Leeds, but contributions were kindly sent from Bradford and other places to adorn this recreation ground of Leeds. The work was purely voluntary on the part of Mr. Lee, who was determined to show that his critics and deriders were all in the wrong. His chief assistant in the work is Tom Spinks, a laoouring man employed by the Corporation, but who, like Opie, the celebrated painter, mixes brains with everything he does. No professional gardener has had hand in this undertaking, though Mr. Lee is indebted to Mr. F. Richmond, of Lister Park, Bradford, and to Mr. M. Lannder, of Horton Park, Bradford, and to other friends in the gardening line, for many practical hints. The Corporation found the soil and labour. but all the planting was done by voluntary effort, the chief contributor in money being the Mayor of Leeds (Alderman Woodhouse), who, with his amiable wife, planted the first trees in the rockery, which are doing well.

Encouraged by the success of his first effort, Mr. Lee has, with the sanction of the Corporation, continued his honorary labours, and has entirely re-modelled one of the entrances to Woodhouse Moor. and has built a second and larger rockery as a mask for new conveniences. The work has been conducted on the same principle as the first, and, with Tom Spinks as his foreman, Mr. Lee has had the pleasure of planting about a dozen beds. The soil is taken out to the clay, midden ashes laid on this, and soil some or 4 feet deep piled on the top. The beds are designed in form to combat the westerly winds, and "shade and shelter" are studied to secure growth. The voluntary response, though not so liberal as might be expected from such a rich community as Leeds, has not been despicable. Upwards of £250 has been given in money, and in the value of plants and other things, but of course the cost of the Corporation is much greater, though they have bad nothing to pay for designing and management, which would mean a considerable sum. The new plantations are doing well-thanks, in a great measure, to the excellent means of watering provided by the Corporation, The percentage of deaths amongst the trees and shrubs is very small. The heds were planted by Messrs. Rider, Moortown; Messrs. Hartley, Head ingley; and Mr. Dixon, Alton Nursery. As no commission was asked, these gentlemen have generously planted several enclosed circles free of cost, and have given other plants worth in the aggregate some £20. Good soil and sods have been tipped on the moor at 1s. a load, though 1s. 3d. has been paid for some of it, but even at the latter rate the soil is cheap. Mr. Lee believes that by mounding up the beds the moor may be rendered a really charming The Corporation propose to form new grounds for the cricketers, the moor having time out of mind been the great playground of Leeds for this healthful

There is one very remarkable feature about this work. It was said that the people would not appreciate and respect the task in which Mr. Lee is engaged. It is very pleasant to know that they do respect it, that nothing is stolen or damaged, and that the people are delighted with what they never expected to see—the adornment of Woodhouse Moor.

Notices of Books.

Traité de Botanique Médicale Phanerogamique, Par II, Baillon, Seconde fascicule, Paris : Hachette,

In this second part of a treatise on medical botany, of which we have already mentioned the publication of the first, M. Baillon proceeds with an account of the several orders which produce medicinal plants. Full descriptions of the principal drug-yielding species, as of the Opium Poppy, for instance, are given, accompanied by excellent illustrations. It will be new to many of our readers that the Opium Poppy grown in various parts of France yields opium containing as much as 10 and even 20 per cept. of morphia; the latter yield has been obtained, even in the North of France. It would seem, therefore, as if the culture might be profitable, but this is not the case, owing to the cost of labour. M. Baillon does not confine himself to the plants specified in the Pharmacopaia and which are in general use, but gives relatively an equal amount of space to extra officinal plants. For a student's text-book we venture to think this is a mistake. To occupy space with Duckweeds, Water Lilies, and Sarracenias is needlessly to increase the size of the book and add to the burden of the unhappy student. Even in a book of reference such as this will be, it would be better, in the interest of the unlearned reader, to put plants of comparatively little medicinal importance in an appendix by themselves, or, at least, in smaller type. The woodcuts are excellent, and the text such as may be recommended with the greatest confidence. A few oversights, how-ever, have escaped even M. Baillon's keenness; the cone at p. 1349 is certainly not that of the Silver Fir, Pinus Abies; and the abnormal growth at p. 1351 is not necessarily a deformed male catkin, and is in any case the work of an insect (Chermes).

Flore de Paris, &c. Par J. L. Lanessan. Paris: Doin.

Our hotanical readers interested in the plants of Northern and North Central France, and in the comparison between it and our own flora, will welcome the appearance of this handy little volume. The plants are arranged according to their natural orders with a series of analytical tables by means of which with a little care the orders, genera, and species, may be ascertained in the same way as in Beotham's Handbook. Not only are all the wild plants introduced, both of flowering and of flowerless plants, but also all the poisonous species, and most of the commoner cultivated plants. Numerous woodcuts are given, together with elaborate indices and tables containing much information necessary for students and collectors. The value of the book can only be tested by frequent use, but the method in which the book is put together and the reputation of the author lead us to commend it as one of singular usefulness, the like of which we cannot point to in this country.

Home Correspondence.

Cremating Weeds .- I have read Mr. Murphy's communication on the destruction of root weeds by lime or fresh horse-dung, and have no doubt that the method he describes is quite effectual. But even although I hold that belief I have for some years back been constrained to have recourse to the wasteful system of "cremation." My object in this is to make sure of the destruction of the seeds of such annual weeds as Chickweed, Poa annua, and Groundsel, which in seed-beds and among small newly planted out forest trees are by far the most troublesome weeds I have to deal with. It is impossible at all times to have these pulled before they seed, as I find them ripening their seed all through a mild winter. If any of your correspondents can recom-mend a plan for effectually destroying the vitality of these seeds in the compost heap it will confer a great boon, as well as effect a great saving to a Northern Nurservman.

Royal National Tulip Show .- Having subscribed to this for many years, and having sent my subscription as usual for the year 1884, and having had no notice whatever of the date of this year's exhibition, I wish to know if my experience of the management at headquarters is according to rule, or an exception? If I find I am an except person, I will be the proper person of the property of the will ask Mr. Bentley the reason why. But before I take so rash a step, I should like to know how many other subscribers are in the "same hoat." Subscribers to the Royal National Tulip Show, please reply. Shirley Hibberd.

The Indian Conservatory .- There is a want of scientific accuracy in the excellent description of the Indian conservatory in your last number. As a matter of fact, the angular size of the sun's disc cannot be compared with the linear space between two laths. The problem to be solved is, at what distance from the screen would the rays from the sun's circumference converge to a point and all the light be a peoumbra. The answer is, 107 times the width of aperture, or say 9 feet to an inch; and the greater the distance in excess of this the more would the light be diffused. II. K. scientific accuracy in the excellent description of the

The Cabbage Caterpillar, — The American fashion of spreading a net over the crop of Cabbages or Cauliflowers is the most effective mode of preventor Cauliflowers is the most effective mode of preventing the butterfly alighting on the plants, and is the only one that cultivators living in warmer climates than ours can adopt that will prevent a crop being eaten up by the caterpillars. Here, in our colder clime, the insects are never seen in such immense numbers, and therefore the difficulty of dealing with them is much less. I would say use the net by all means, if you have one; but in lieu of that, it is a good plan to carefully go over the plants and hunt out the patches of eggs that are found on the leaves, both on the upper and under-side, but more on the latter, and then to crush them between the finger and thumb. This does not take a long time, and need only be done during the time the Cabbage butterfly is about. When once the caterpillar has hatched out ahout. When once the caterpillar has hatched out and is able to crawl the labour is all in vain, as each and is able to crawl the labour is all in vain, as each must be caught separately, whereas in the finger-and-thumb method scores of eggs are smashed in the space covered with a florin. By not taking the remedy in time the writer has had a crop of full-grown Cabbages reduced to a plantation of skeldton leaves in a few days—all attempts at catching the caterpillars or drowning them with water from a hose leading to nothing, as the voracious insects never leave off feeding for a moment till their transformation into chrysalids is accomplished. M.

Early Peas,—These, like everything else, seem to have heen greatly retarded and to have suffered from the absence of rain and exceeding aridity of the air, but since the change they are filling fast, and will now turn in in rapid succession. The first with us to he fit for use is Eastes' Kenthis Invicta, which, sown at the same time, and on the same border, having therefore equal advantages with William I., is quite a week before this well-known variety, the pods of which are as yet quite fast while the others are full. Although William I. is not ready to pick quite so soon there can be no question but that it is the better Pea of the two, as, besides having more depth of colour it is superior in flavour when cooked. Not only is this so, but the pods are longer and contain more Peas of a larger size than the Invicta, and it should, therefore, be grown to come in to succeed it. should, therefore, be grown to come in to succeed it. To follow closely on after William I. I like to have a row or two of Day's Sunrise, which seems to have origi-

growing side by side. I can see no difference whatever in the colour of their flowers, habit or growth. Where they differ at this point is in their degrees of forwardness, as Suorise, sown at the same date—January 19—is well "slated," while the other is only just setting, o One great disadvantage Sunrise has which the other is free of is that it fills badly, as generally the pods are very gappy, thus showing some defect in the setting. Being a marrow the flavour is good and equal to Advancer, which is most valuable as a second early and one of the most useful of the many good ones Dr. Macleau sent out. As most gardeners will now be picking early Peas it is a favourable time to compare notes and make memoranda of the sorts to grow for succession in the year next to come. 7. S.

— As there seems to he a desire among gardeners to find out which is the earliest Pea I send you our experience. We sowed on December 12, 1883, on a south border in the kitchen garden Sangster's No. 1, and picked the first dish on May 30. G. Lambert, Oakwood.

G. Lambert, Oakwood.

Malformed Fuchsia.—The accompanying figure (fig. 146) shows a deviation of a very extraordinary character. The flower is normal except in mortant exception—that from the sides of the ovary, or rather, of the flower-stalk enclosing the ovary, proceed two leaves, from the axil of one of which proceeds a single stamen, while from the other come two united at the



FIG. 146,-MALFORMED FUCHSIA

base, but separate above. The specimen came from Messrs. Keynes & Co., of Salisbury.

The Pink Wood Sorrel .- This rare plant I saw The Pink Wood Sorrel.—Inis rare plant I saw in considerable quantity some time since growing on the shady side of a raised ditch. The colour was, however, not so deep as a plant sent from Edge Hall, although perfectly distinct from the normal form. I collected some flowers to send you, but they were quite withered before reaching home. A. D. Webster.

Agaricus (Volvaria) gloiocephalus, Fr.—We have received some magnificent examples of this large, rare, and very handsome Agaric. Our largest specimen was 9 inches high, and 4½ inches across the cap. The habitat was remarkable, for the Agarics were found growing on an old wool waste or shoddy heap near Huddersfield; the base or volva of each fungus was firmly embedded in the black shoddy and the same material was sticking on the top, when the fungi were received by us. Mr. A. Clarke, one of the members of the Huddersfield Natural History Society, forwarded the examples for naming. W. G. S.

Quick Revival of Flowers and Plants,—One cannot fail to be pleased and struck with the quick revival there has just been in flowers and plants, all of which have changed as if by magic during the last twenty-four hours, as before the rain it was pitiable to see the distress they were in ; but instead of wearing anything like that wee-hegone look now, they are all smiles, and appear gorged to repletion. This is more apparent with the Rhododendrons than anything else, as they were struggling to burst their huds and get their blossoms open; and though many of the earlier kinds did succeed, the later failed, and seemed to give Quick Revival of Flowers and Plants.-One

up in despair. Although well known to be moisture-loving plants, it was not so much the dryness of the earth that affected them as the exceeding aridity of the air, which for a long time past has lacked humidity both day and night, as there has been no dew or dampness in the atmosphere to refreshen and revive famishing vegetation. For some things this has, perhaps, heen well, or the cold might have told more severely, but as the tissues are firm and hardened, the low temperature and winds have not done the harm they otherwise would. Roses, like Rhododendrons, seem quite to rejoice in the rain, which, besides acting so beneficially on the buds in helping to swell and latten them up to burst out in the big flowers to come, has, in a great measure, cleansed the shoots of aphis, and made the foliage look lovely with its bright tints of green. Bedding plants have had a sorry time of it, and show it in the leaf, which looks brown and weather-beater; but where watered they must have been moving below, as with the sum we have had, the ground has been warmed, and roots are not slow in taking advantage of this, as may be seen when a plant or two has to be lifted and shifted. The change in the herbaceous border has been as remarkable as in the Rose garden, for there the plants seem to quite driok in the rain, and the Irises especially show how well it suits them, as they are magnificent and full of beauty in the various colours and forms of their blossoms. Writters sometimes compare them with Orchids, but really these latter might be compared with the Iris, as, excepting some of the Cattleps's and Leslias, there are few that rival them and forms of their biossonis. Writers solutions compare them with Orchids, but really these latter might be compared with the Iris, as, excepting some of the Cattleyas and Lælias, there are few that rival them in the delicate shades of their petals and markings. Lovely as the flag-leaved section are, the hulbous-rooted excel them, and these are now fast pushing up heir flowers, which, when open, will be the most attractive things in the garden. Aquilegias are also moisture-loving plants, at least at this season, and are now a feature in borders, as since the wet they look fresh and are full of gay blooms. Spireas of all kinds seem to revel in the change, and soon the big S. Aruncus, and the charmingly rose and violet tinted S. palmata, will have their fine spikes and panicles open. The change in Pyrethrums has been great, as they not only require moisture below, but the same in the air, or they cannot get their big double blooms to expand. J. S.

My Fernery.—There was a dull, untidy corner in my greenhouse which gradually became the receptacle

My Fernery.—There was dull, untidy corner in my greenhouse which gradually became the receptacle of garden tools, pots, or whatever a lazy amateur thought it too much trouble to put away decently. I had looked at this unsavoury spot many times with a feeling of shame when a friend had heen asked in to accept a Maréchal Niel, or a bunch of Grapes. The house was L-shaped, the stem of the L having alean-tood, the foot of it a span. The aspect was south, and the back wall (north) contained the entrance. The roof of the span part was covered with a grand Maréchal Niel and Clematis rubella, so that the spot was entirely shaded. Now it happened some time before that a few huge old Portugal Laurels were cut down to the intended fernery. First, however, I collected from obscure recesses an indiscriminate aggregation of dibrit of domestic/civilisation in the shape of broken crockery, bottles, preserved meat and fruit tins, old iron, &c. If Macaulay's New Zealander should happen to exavate here he will discover, probably, some fragments of ancient pottery. These I placed in an irregular heap, and among them, in a sloping position, resting on either wall, the aforesaid naked stumps, which seemed to stretch out their hopy arms for Ferny covering. The next step was to turn to the pages of the Gardeners' Civenniet for the addresses of the enterprising gentlemen who are contioually asking us if we want 'beautiful flowers.' They could not have contrived Gardeners' Chronicle for the addresses of the enterprising gentlemen who are continually asking us if we want beautiful flowers." They could not have contrived a more cunning and insidious question. Of course I did and always have done, they are the only luxury to me indispensable; for a few shillings to he able to surround oneself and enjoy their companionship, mute it may be, but fragrant and chaste and beautiful, is a privilege, and one of my greatest delights. An envelope containing half-a-crown's worth of stamps was forthwith despatched, and in a couple of days a goods-waggon delivered at my door two thumping bagfuls of fibre dust. Mixing these with a like quantity of loam, the top spit of a meadow, and a bushel of silver-sand, my compost was complete. With some burrs I formed the intended pockets; then thrusting the loam into the intense. inrusting the foam into the interstices, and covering the dibris with 10 or 12 inches of the same, it was left a few days to settle before planting. Care had been taken to provide drainage. It is always a desideratum with me to bring home from my rambles a few Fern trophies, and I had only to look in odd corners and shady spots round my carden to find sufficient. and shady spots round my garden to find sufficient roots for stocking the fernery without having recourse roots for stocking the temery without naving recourse to the nurseries for hardy foreigners. For the larger species which occupied the lower stations I had plenty of Filix-mas and feemina (the Lady Fern), Lastrea dilatata—a grand Fern for the purposes; Hart's tongue, deliciously cool and glossy, and affording a charming contrast with the finely divided kinds;

Polystichum angulare and aculeatum, a strong tuft of Holy (Lonchitis) from Glen Tilt; Thelypteris, a delicate and charming green; the old Polypody, the Orcopteris, and the graceful hay-scented Feru, Lastrea recurva. The most difficult and refractory Feru to manage was our old friend the Bracken. Blechnum spicant required a little peat; and Cystopteris fragilis was assisted with some bits of limestone, as was also Calcareum; the limestone Polypody, Dryopteris and Phegopteris, the Oak and Beech Ferns, had a little leaf-mould, and found comfortable stations between the tufts of larger kinds. Osmunda did not do well, but was happy out-of-doors in a shady border. Asplenium viride, the green Spleenwort, and the blackstemmed variety did splendidly; and a bit of Trichomanes radicans grew fairly well in a damp shadycorner. Ceterach, the Scale Fern, was happy too in a light spot, wedged between two bits of limestone, and Adiantum nigrum öid well in the recesses of the upper region. Last of all, Capillus-Veneris, the British Maidenhair, flourished well. I had discovered some thousands of little plants in the cliff just under ______, in Cornwall. My extempore fernery was a reality, the account of it is matter of fact—no fiction: I say "was," we have left the old house since. With some trouble in constructing the fernery, and care in attending to it—though it required but little of the latter—I was rewarded with abundance of Fern fronds to help with cut flowers; and, what was formerly an eyesore and disgrace to my greenhouse, became, after the yellow Roses and Grapes, its principal feature of interest. I am thinking of constructing another, but shall confine the framework material to burrs and some lumps of limestone; I shall also contrive to have a little tank, either of cement or wood—water is an almost indispensable accessory to a picturesque fernery, both for use and ornament. T. W., Harryaw.

Acrial Roots on Vines.—I observe in Mr. Thompson's Practical Treatise on the Vine that acrial roots indicate a state of things that is not desirable, and is caused by one or two things, either the house is kept too moist, or the border too cold and wet. I also notice in your answers to correspondents (p. 686) that it is probably caused by the natural roots not being in such a thriving condition as they might be. For some time I have been very much rinterested in this subject, and have made many observations, but I am not yet satisfied as to the real cause. But I can say it is not entirely and absolutely from either of the causes above-stated; for I have two vineries here that are not in any way in the condition above-mentioned. The earliest Vines have made several acrial roots; but the border is entirely inside with a concreted bottom, plenty of drainage, and not in any way too wet or too cold. As regards the atmosphere, it has been kept with a nice growing, moist atmosphere, with plenty of air and fire-heat, so as to keep the temperature about 60° at night and 70° in the day with a rise of 10° by sun-heat. The roots in the border are in first-class condition, and are all close to the surface, feeding on a good top-dressing, which was put on in the autumn, and is now full of healthy, thriving young roots. This is the house of Grapes I wrote about in the Cardener's Chronicle with respect to the quantity I had cut after being planted three years, and they are now carrying as good a crop as any one would wish to see. I shall be very pleased to show them to any one desirous of seeing them. I might say that these same Vines measure 6 inches in circumference 2 feet from the border. The other Vines that have made acrial roots are young ones planted late last year. They were cut back to within 18 inches of the surface, and this old wood has made this season a splendid cane of 14 or 15 feet and 2 inches in circumference and the others carrying such a heavy conditions, and has been damped down as the others. I therefore

Greenhouse Plants in the Open Air.—I send you a fasciated growth of Habrothamnus Newallii and H. roscus, with growth, to show how well they are doing in a sbeltered place out-of-doors. They have been planted out two years. Last summer one shoot was close on 8 feet long, which shows how well they grow outside; but I would not recommend them to be planted out, except in very sheltered situations. Mitraria coccinea, Adenandra fragrans, Crowea saligna, Solanum jasminoides, and Hibbertia volubilis have all stood the winter unblemished; Cantua dependens, planted in strong clay loam, wis killed to the ground line in November, with 9° of frost, but I believe it will break again from the bottom; this made nearly 3 feet of growth last

summer. Choisya ternata does well here, and I have reason to think it will prove hardy in most parts of England, and will be much sought after when it is well known. F. Clark, Gr. to Mrs. Yoad, Patching, Worthing.

Chrysanthemums Prematurely Flowering.—Lange numbers of my Chrysanthemums, which should flower in November, are now throwing up flowerbuds in abundance, and I find that the same is the case in my neighbours' gardens all about these parts. They all seem affected alike—stock plants that have been left in the old pots, young plants for the coming season, pompous, and large Japances, incurved varieties, &c.—very many of all kinds display this strange and most unfortunate precocity. It affects not only the plants taken here, but very many others that I have obtained by exchange or purchase from all parts of the kingdom. A nurseryman came this morning to consult my gardener about this trouble, and told him that he had buds as large as a sixpence on plants of Grandiflorum, a late Japanese variety, that does not bloom here generally till the middle of December. What is to be done? Are we to let them grow on and flower, and have Chrysanthemum shows in August? Or are we to pinch off the buds and take our chance for a fresh crop in September for the November displays? Is this premature blooming general throughout the country? What are the great growers going to do? I should be much obliged for information. The meaning of this physiological explosion is that we have been over-feeding and over-forcing our plants; we have all been doing it, and now they have aff of the gout I James Salter, Basingfield, Basingsloke, June 11. [Cut them down half way; they will then bloom quite as well, if a trifiel aler, than under ordinary circumstances. Ed.].

The German Iris.—I seed you a specimen of the above Iris, with five falls, five standards, and all other parts of the flower equal; in my collection the freak is quite common, mostly, bowever, with four standards and four falls. I have grown a large collection of this Iris for many years, but never noticed this freak before; it may, however, be common, and I shall be glad to learn the experience of others. In Iris Kæmpferi we have this increase of petals as a fixed character, but I take it this is a passing freak in the barbata group, as the remainder of the flowers on the stalk have the normal three standards and falls. P. Barr. [A cut across the flower-stalk and ovary shows that the abnormality is due to the union of two flowers, and to the consequent suppression of one fall, one standard, one stamen, and one style. There are six cells to the ovary (twice three), showing that the suppression did not affect that organ. Ed.]

foreign Correspondence.

BOGOTÁ, AND HOW TO GET THERE. — I have been a collector of Orchids in England for the last twelve years, and on being attacked in November, 1883, by a desire to roam, the United States of Colombia and Bogotá naturally came across my mind. A Royal Mail steamboat left Southampton on December 3, and I accordingly took a cabin in her for Savanilla. Now, to find out as much about the country as I could in the short time that was left to me, and to make my preparations for the start, was a work of necessity. I called upon three of the leading London nurserymen with whom I had dealt in Orchids, but I got no really valuable information from any one of them. One told me that I should find Bogota full of Orchid bunters, and that every taproom in the place was crowded with them and Indians bringing down Odontoglossum Alexandræ and O. Lindleyanum mixed for sale, and that if I entrusted Orchids to his care, after I had paid all expenses of carriage, he would realise all that he could get for them and hand me over half the pro-Another told me that I should find O. Alexandræ in any quantity, but only to pick out the best varieties, and send them home separately labelled. The third told me that the admission to the O. Alexandræ grounds was carefully closed to all strangers, and that I should have to pay a royalty on all the plants collected.

I left Southampton in the R.M.S. Maselle, and found on board a professional Orchid hunter, a native of Bohemia, who was going out to Ecuador on a mission for his firm. We stopped two days at St. Thomas and a few hours at Port-au-Prince, in Haiti. The island of San Domingo is a magnificent island from the sea, and has never been explored by European botanists; it is governed by a Negro Republic, and it is not over sale for white people, owing to the

perpetual revolutions going on there. We arrived at amaica on Friday, December 21, and having a clear day to stay there I took my Bohemian friend for a drive to Gordonstown, and through what are called the old Botanical Gardens. We found Oucidium luridum growing in quantity, but no very large plants of it. After this we want, but no very age plants of it. After this we want through Hope Plantation, one of the Government nurseries, and under the superintendence of Mr. Morris. Both here and at the Cinchona plantations, where Mr. Morris resides, every kind of experiment in the naturalisation of useful plants, trees, and shrubs is being conducted. We left Jamaica on Sunday morning, and arrived at Colon on Tuesday (Christmas Day); on Wednesday I went for a walk round the island on which Colon is situated, but found only a Catasetum with seed-pods. On Thursday I walked with an engineering friend to Monkey Hill, where the cemetery of Colon is situated; here the trees were covered with parasites; there was Epidendrum bicornutum in any quantity, but the hollow pseudobulbs were so full of an obnoxious little black ant as to render handling them disagreeable work. Catasetums and Mormodes and an Oncidium were very plentiful, but the only plants in flower were a worthless Epidendrum sp. (I should imagine not named and not worth exporting), with a delicious

At Colon I said good-bye to my Bohemian companion, and went on to Savanilla. From thence I took the train to Barranquilla, the port and startingplace of the Magdalena steamboats. Here I had to wait four days before a steamboat was starting for Caracoli or the Bodegas de Bogota, where the mule journey to the capital commences. And now a word as to expenses. The lowest first-class fare from Southampton to Savanilla is £30, good table, wine included, at breakfast and dinner; from Savanilla to Barranquilla is &t, and from Barranquilla to Caracoli is £10, food, but no drinks, included. At the custom-house at Barranquilla 100 kilos of luggage are allowed free, but after that you must pay at the rate of 15, per pound, and as guns and cartridges weigh heavy I had a considerable amount to pay. You may take as much Tobacco and as many cigars as you please-the only duty consists in the weight of your luggage. The charge at the Victoria Hotel at Barranquilla is 6s. 8d. a-day, including a bed, early coffee at 6, breakfast at 11, and dinner at 5 P.M., and a very good bath. On board the Magdalena steamboats they provide you with food and a trussel bedstead, and you have to obtain beforehand mosquito curtains, pillows, and mats for your bed, and beer or light claret for driok at dinner. If you have a private cabin—which, by-the-bye, is of no use—you have to pay £2 extra. As the duration of the voyage is very uncertain, varying, in fact, from eight days to three months, according to the state of the river and the time of the year, I do not think the above fares excessive.

I wandered about the woods that separate Earran-quilla from Savanilla, but could find no trace of an Orchid, nor of a rattensake, which I was told I should find in quantities. I went out shooting, but could find nothing to shoot. The heat was not intolerable, as there was always during the day a nice sea breeze blowing, but the sun was very powerful, and a Panama straw hat was the best head covering. The medicines that I took with me were Cockle's pills, chlorodyne, quinine in powder, some 1-grain opium pills, and some undiluted carbolic acid. These are all necessities, and I should recommend any Orchid hunter to take these and oothing else. The less spirits one drioks in the tropics the better, but on the Magdalena River I was recommended by a very steady old stager to have a small glass of rum the first thing in the morning.

Having transferred all my bedding and traps on Lager beer and a demijohn of rum, so as to be prepared against all emergencies, I started from Barranquilla on the stern-wheel steamboat Anita on Friday morning, January 4, 1884. On Sunday we arrived at Puerto National, the port for Ocaña, three days' distance, on mules. Ocaña is the headquarters for Odontoglossum Pescatorei, and lower down, nearer the river, fis O. Roezlii and Cattleya Trianze. On Wednesday we arrived at Naré, the starting-point for Medellin—seven days' journey by mule—and the next largest town to Bogotá. Near here is the head-quarters of Odontoglossum vexillarium. At Naré I found a small yellow Oncidium, the only Orchid I found in the Magdalena valley, though I was on shore three

or four times every day for an hour each time when the vessel was taking in wood. On Friday we arrived at Caracoli, and I made a bargain with a man for three mules to take me up to Facatativá for £4, everything included, that is to say with a poon, saddle, pack saddles, and keep. This is about the usual price. The scenery up the Magdalena River is very fine, but rather monotonous, as the banks are always low. The shades of green in the foliage are very various, and relieved now and again by masses of scarlet and yellow flowers. The jungle is very dense, and can only be traversed by a frequent use of the machete, or sheaf-knife, that the Indians always carry. Monkeys are not very plentiful through the woods. Caymans, or alligators, swarm on every mud

bank all the way up the Magdalena. I started from the Bodegas de Bogota at 9.30 the next morning, having ordered my mules to be ready at 6 A.M., but this want of punctuality is most trying with the "peons." "Manara—to-morrow," is the only answer you get when you remonstrate with them. stayed the first night at El Consuelo - Consolation, having mounted 4000 feet above the Magdalena level: no Orchids about here, and the mule-path very bad all the way. I left El Consuelo at 7 the next morning, and descended 1000 feet to Guaduas, so called from the Bamboos which grow there in quantities, and of which all the houses are built. After a rest and breakfast I left Guaduas at II A.M. The road was a steady ascent for some time, then a steep descent, then a series of very stiff zigzags up to the Alto del Trigo, or Elevation of Wheat, 6500 feet above the sea. Here all tropical vegetation had died out, and nothing but barren scrub was visible; thence a descent of rather over 4000 feet was necessary to the village of Viletta, the centre of the mule trade. Coffee is largely cultivated about here. I passed my second night at Viletta at a comfortable posada, and had a good swim in the river the next morning. I left here at 7 A.M., and soon came to enormous masses of Sobralia macrantha on both sides of the path. As the road ascended various Odontoglossums were in flower of the hystrix type, and at last I came to my first Alexandræ, but it was over, and in this part of the country I never saw one in flower. A month earlier, and I should have been in time. In fact, any one coming to Colombia after Orchids should leave England in the beginning of October. Alexandræ continued almost to El Roble, or the Oak tree, at an elevation of 9000 feet above the sea level, or 600 feet above the level of the plain of Bogotá. At El Roble Oaks come upon the scene, and Bracken and Dog Oaks come upon the scene, and Bracken and Dog Roses—all mixed with Tacsonia Van Volxeni and Passiflora edulis (?). A short descent brings one upon the plain, 30 miles long, in the direction of Bogotii, and 20 miles broad—a basin of an old lake, with two silands jutting out of it, until the waters forced their way through the hull side and formed a drainage to the whole district. The passage made by the water caused the Falls of Tequludama—of which more anon. An hour from El Roble and one comes to "Los Manzanos"—the Apple trees, and about two hours from this are the Cinchona plantations of Alejandria, the property of Messrs. Heckel & Freese, of Bogotá and Milan in Italy, where the bark is sent to be transformed into Italy, where the bark is sent to be transformed into quinine. Near this plantation are to be found some of the best varieties of Alexandræ, the large, unspotted, broad sepalled and petalled varieties, with the beautiful rose-coloured blush; and it was from this neighbourhood that Messrs. Stevens received all their best varieties for sale. The inn, "Los Manzanos," forms a good headquarters for this district. From here to Bogotá there is a fair carriage road, but as I had engaged my mules to Facatativá (a name that I thought I never should have remembered)—pronounced just as it is spelt, with the accent on the last syllable—10 miles further. From here to Bogotá is 20 miles. I put upat the Fonda de Cordova, and gave my "peon" 6s. 8d., with which he was most extremely delighted—tips not being general in this part of the world.

bs. 8d., with which he was most extremely delighted—tips not being general in this part of the world. My personal expenses from Caracoli to this point, in addition to the mule hire, were under 10s.

I have transformed all the heights and distances and money into English measures, as being more suitable to my readers, but let no one come out here without a certain amount of knowledge of Spanish, or the method of the contract of without a certain amount of knowledge of Spanish, or they will be taken in tremendously. And now a word as to the honesty and civility of the people, who are nearly entirely Indian, with a little Spanish blood in them. Their honesty surpasses all belief; they never touched or attempted to touch anything of mine, even when left in saddle-hags for the night. A rum bottle was sacred to them, and there is no necessity for carrying arms, though I always did so—a loaded revolver and a large dagger being ready to my hand. E. W. Walker, E. W. Walker.

(To be continued.)



FRUIT NOTES.

LORD NAPIER NECTARINE .- Messis. Rivers & Son have sent us from Sawbridgeworth a remarkably fine forced fruit of this Nectarine. It weighed 61 oz., measured 91 inches in circumference, and was beautifully coloured and exquisitely flavoured. This variety, it will be remembered, is one of the late Mr. Rivers' seedlings, and had he raised nothing else, would have been a good monument to his memory.

THE WYEDALE PLUM.—A late bearing variety,

of good quality for cooking purposes. The fruit is about 13 inch across, oblong, rounded at both extremities, reddish-violet; flesh yellowish, sepa-rating freely from the stone. Figured in the March

number of the Florist.

PEAR, STRIPED BEURRE D'AMANLIS .- The peculiarity of this variety consists in the presence of a variable number of broad reddish streaks extending lengthwise round the Pear, and giving it a striking appearance. The good qualities of the variety are in no wise less in it than in the type. A good figure is given in the April number of the Bulletin d' Arboriculture.

PLUM, REINE CLAUDE DE BRAHY .- Fruit large, tounded; stalk short, deeply set, suture well marked; flesh golden-yellow, very juicy, sugary, with a delicious flavour, adherent to the stone. It is a sure though moderate cropper, and the fruit comes into use late in the season. Bulletin d'Arboriculture; March, 1884.

PEAR BEURRÉ ROYAL DE TURIN.—A fruit like Doyenné d'Hiver, raised in the nurseries of MM. Simon-Louis at Metz. M. Pynaert speaks of it as a superb Pear, and of great merit as to quality and pro-Its season is October and November. ductiveness. It is a large Pear-shaped fruit, a little oblique at the hase, with a thick, short stalk, and slightly depressed The skin is yellow, speckled with russetty spots, the flesh melting, sugary, pleasantly acidulous.

NOTES ON PÆONIES.—II.

Subgenus Moutan,—Shrubby. Disc produced inlo a cup enveloping the base of the carpels,

1. P. Moutan, Sims, in Bot. Mag., t. 1154; DC Prodr., i., 65; Anders., Mon., No. 1.—Stems shrubby, copiously branched. Leaflets entire at the base, often cut in the upper part into oblong acute segments, glabrous on both surfaces, moderately firm in texture, not at all decurrent on the rachis. Flowers very large, very various in colour, Carpels small, numerous, densely

Widely cultivated in China and Japan from an early date. There are numerous garden varieties, of which the principal are papaveracea, figured Andr., Bot. Rep., t. 463; Lodd., Bot. Cab., t. 547; Sims, Bot. Mag., t. 2175; Banksii, Andr., Bot. Rep., t. 448; Ker, Bot. Reg., t. 379; Sims, Bot. Mag., t. 1154; Humei, Ker, in Bot. Reg., t. 379; rosea, Andr., Bot. Rep., t. 373; Lodd., Bot. Cab., t. 1035; Rawesii, Hort. Trans., vi., 479; and Anneslei, Hort. Trans., vi., 482, 1. 7.

Subgenus II. PÆONIA PROPER.-Stems herbaceous. Roots a cluster of fusiform fibres. Disc not produced into a cup.

Section 1.-Follicles glabrous.

2. P. Wittmanniana, Stev., in Ann. Sc. Nat., 374; Boiss., Fl. Orient., i., 97; Bot. Mag., t. 6645.— Stems r-headed; lower leaves biternate, with usually not more than three segments in each division; leaflets thin in texture, often 11-2 inches broad, ovate, acute, dark green and glabrous above, hairy below. Peduncle short. Sepals unequal, orbicular, the longest more than an inch long. Petals orbicular, yellowish-white, 2 inches long. Filaments longer than the small authers. Carpels in the type glabrous, with a small ligulate spirally-curved

A native of the Caucasus and the mountains of the North of Persia. A well-marked species, still rare in cultivation. We have a specimen from Asterabad, from Professor Bunge, of a variety with hairy carpels.

3. P. obovata, Maxim., Prim. Fl. Amur, p. 29; P. oreogeton, S. Moore, in Journ. Linn. Soc., xvi., 376.— Stems glabrous, about 2 feet long. Lower leaves not more than biternate, three thin leaflets, glabrous on both sides, oblong, acute, reaching 3 inches long, 12-2 inches broad, all deltoid at the base, the leaflets not more than nine to a fully-developed leaf. Peduncle short. Re-flexing unequal, sepals an inch or more long. Corolla red-purple, as large as in P. officinalis. Follicles 2arcuate, glabrous, 1 inch long, 1 inch in diam.; stigmas small.

A native of Sachalin, Amurland, and the northern provinces of China. Not known in cultivation, so far as I am aware.

4. P. albiflora, Pallas, Fl. Ross., ii., t. 84; Anders., Monog., No. 2; DC., Prod., i., 66; P. edulis, Salisb., in Parad. Lond., t. 78.—Stems 2—3 feet long, entirely glabrous, often branched, and bearing from 2—5 flowers. Leaflets often confluent at the base, oblong, acute, reaching a length of 3—4 inches and a breadth of 1—1½ inch, quite glabrous, a deeper brighter green than the other kinds, often coloured at the edge, and the veins also red; lower leaves with about five segments in each of the three divisions. Peduncle more produced than in officinalis, with often a large simple leaf a little below the flower, and 1-2 large foliaceous acute outer sepals. Petals as large as in officinalis, very various in colour, usually white or pink. Follicles often 3-4, ovoid, arcuate, glabrous, under 1 inch long, with small spiral stigmas.

A native of Siberia, introduced long ago into cultivation. There are a crowd of garden varieties, but it does not shade off into any of the other species. It does not flower about London till June, and may easily be recognised at a glance from a distance by the dark bright colour of leaves, and the way in which its flowers, which are often more than one to a stem, nis nowers, which are often more than one to a stem, with the large simple leaves near them, stand out above the tutts of leaves. The principal named varieties are vestalis, Andr., Bot. Rep., t. 64; tatarica, Bot. Reg., t. 42; uniflora, Bot. Mag., t. 1756; Whitleyi, Ker, in Bot. Reg., t. 630; Andr., Bot. Rep., t. 612; Humei = sinensis, Sims, Bot. Mag., t. 1768; and fragrans, Bot. Reg., t. 485. It was called edulis because the roots are sometimes eaten by the Mongolian Tartars.

5. P. Brownei, Dougl., in Hook. Fl. Bor. Amer., I., 27; Brewer and S. Wats, Fl. Calif., i., 13; P. californica, Nutt.; Torrey and Gray, Fl. N. Amer., i., 41.—Quite glabrous. Stems 1-headed, not more than 1—1½ foot long, bending over till the follicles touch the ground. eaves 5-6, decompound, with very numerous small, Deaves 3—0, decompound, win very inumerous sman, oblong, obusse, or sub-acute, copiously confluent, segments 1—1 inch broad. Peduncle short, and the outer sepals often leaf-like and compound. Corolla globose, not more than 1 inch in diameter; orbicular petals not much larger than the sepals, dull red, brighter red towards the edges, Follicles 4—5, nearly straight, oblong, very leathery, glabrous, 1 inch long.

A most distinct species, hy its small globose flowers and Columbine-like leaves; the only one known in America. Its geographical range is very wide, as it extends from nearly sea level in California up nearly to the snow line on the Rocky Mountains. I am not aware that we have it now in English gardens, but it is figured in the *Botanical Register*, vol. xxv., tab, 30.

6. P. humilis, Retz., Obs., 35; Anders., Monogr., No. 8; Bot. Mag., t. 1422; DC., Prod., i., 66.—Stems 1½—2 feet long, 1-headed, hairy towards the top. Leaves five or six to a stem, the lower with twenty to thirty oblong acute copiously confluent segments 4-1 inch broad, dark green and glabrous above, pale and pubescent beneath. Peduncle short, and calyx with often r—3 very compound leaves from its base. Petals orbicular, bright red, 2 inches long. Carpels 2—3, glabrous, arcuate, 1 inch long, ½ inch in diameter; stigmas small, reflexed,

This is an old well-known inhabitant of our gardens, and is fully described in Anderson's monograph. It is not distinct from officinalis and peregrina in any broad sense. The only wild specimens I have seen are from the South of France, gathered by Petit near Perpignan. It is the P. peregrina var. leiocarpa of the French, but not of the Spanish Floras.

7. P. microcarpa, Boiss. and Reut., Pugillus, p. 3; P. 7. F. mitricarpa, Dosso, Th. Crit, p. 93; Willk. pregrina v. leiocarpa, Cosson, Pl. Crit, p. 93; Willk. et Lange, Fl. Hisp, iii., 975.—Stems 1—12 foot long, l-headed. Lower leaves with about thirty oblong, acute confluent segments \(\frac{1}{2} - \frac{3}{4} \) inch broad, very pubescent beneath. Flower solitary, the outer sepals not so compound as in humilis. Petals bright crimson. Follicles 2, glabrous, very spreading, smaller than in humilis.

A native of the mountains of Spain. A very near ally of P. humilis. I am not aware that we have it in English gardens.

8. P. coriacea, Boiss., Voy. Esp., xiv., t. 3; Willk. et Lange, Fl. Hisp., iii., 976. — Stems glabrous, r-headed, r\frac{1}{2}-2 feet long. Lowest leaves with not more than 9—13 leaflets, which are broad, oblong, acute, sometimes 2 or even 3 inches broad, firm in texture when mature, more or less glabrous on both surfaces. Calyx, with often 1—2 large compound leaves from its base. Corolla large, bright crimson. Follicles 2—3, glabrous, very spreading, above an inch long when mature. Stigmas purple, falcate.

A native of the alps of Granada, at an altitude of 5000-6000 feet above sea level; and also of the mountains of Morocco and Algeria.

9. P. cornica, Sieber Exsic. — Stems glabrous, 1-headed. Lower leaves with not more than nine thin, oblong acute leaflets, which are 1½—2 inches broad, green and glabrous on both surfaces. Calyx with 2—3 large, foliaceous, simple outer sepals. Petals large, orbicular, bright crimson. Follicles glabrous.

A native of Corsica, known to me only from a single dried specimen. There is a closely allied plant in Algeria, regarded by Munby as a variety of P. Russi. P. Cambestedessi, Willk. and Lange, F?, Hisp., iii., 976, from the Balearic Isles, is also, judging from the description, a closely allied form, but I have not seen a specimen. P. G. Baker.

(To be continued.)

FORESTRY.

NOTES ON FORESTRY.—Unlike the laws of the Medes and Persians, "which alter not," the standard laid down and strictly adhered to by all true arboriculturists regarding the exact measurements of growing trees is unfortunately too often lost sight of by the general public, and a haphazard system invented instead, the result of which is that the measurements are utterly fallacious and not of the slightest use for any practical or scientific purpose, Maoy cases of this kind have occurred lately, and not a little controversy in writing has been occasioned thereby. We would, therefore, strongly impress upon all who take an interest in the size and growth of trees, the need of a definite and uniform method of measurement.

In giving the girth of a tree give it correctly to the inch, and always state distinctly the perpendicular height at which the measurement or measurements have been taken, as unless this is done they are of no value whatever, and only lead the unwary to errone-ous and exaggerated deductions. The standard height now generally adopted by arboriculturists for measuring the girth of growing trees is 5 feet, that is when but one measurement is taken; if two, at 3 feet and 5 feet from the ground level.

Poisonous Plants .- Notwithstanding the numerous warnings to stockowners regarding the poisonous properties of Yew and other prunings, the number of deaths that can he clearly traced to this source seem annually on the increase. As certain as the spring-time comes round, when shrubbery pruning is usually in hand, we read of cases in which cattle, horses, or sheep have been poisoned by cating the prunings of Yew, Laurel, or Rhododendron, carelessly left within their reach, or, as is not unfrequently the case, deposited in the yards and fields in which they run. There can be no doubt, in fact it has been proved by experience, that half-withered prunings of Yew are far more deadly in their effect than when partaken of in a fresh state, which should be a timely warning to those who are at present engaged in "shrubbery trimming" to carefully collect all prunings, and either have them conveyed to some safe out-of-the-way place beyond the reach of farm stock, or, better still, reduced to ashes on the ground. Several cases have lately come under my notice in which horses and sheep have been poisoned by nibbling the shoots of Rhododendron and Yew; and one thing has certainly surprised me-how slow the veterinary surgeon is to detect the cause of illness or death.

FLOWERING TREES AND SHRUES.—Considering the soft and unripened state of the growth made last season by trees and shrubs, the profusion of flowers this spring is something remarkable. This is due in a great measure, no doubt, to the mild winter and spring through which we have passed. Rhododendrons and Azaleas were a perfect glow of beauty, and with such a variety of colour and shade as almost to

defy description. A bed of the former, all the best kinds, at Penrhyn Gardens, was truly a sight which few could fail but to admire. The border, or rather plot in which they have been planted was carefully prepared by Mr. Speed, and certainly the results obtained are far in excess of the labour expended. The Rhododendrons are interlined with the Cape Hyacinth (H. candicans)-and such Hyacinths ! Why last season most of them attained a height of 6 feet, which clearly shows that the peat bed and partial shelter of the Rhododendrons is just what is wanted for the successful cultivation of this stately flower, Very ornamental at present is the pure white ballshaped flowers of the Gueldres Rose (Viburnum Opulus), while the Broom and Gorse are a perfect sheet of gold. The various species of Lilac seem almost overloaded with their rich and fragrant blossoms, while the Mock Orange, Deutzias, and Laburnums, and a hundred others, for the list is far from exhausted, only show how sweet and attractive they can be when dressed in Nature's floral attire.

THE BARENESS IN BEAUTIFUL SHRUBS and trees of many gardens and pleasure-grounds along the sea coast is, I believe, far more owing to not knowing what to plant than from any disinclination on the part of the owners. The following list of trees and shrubs, which succeed well along our Welsh coast, may therefore be useful to those who have the will, but want the knowledge of such plants as will thrive in the saline air of the sea-coast garden. Amongst shrubs, the various species of Euonymus deserve the first rank, as they not only brave the cutting sea winds with impunity, but are highly ornamental as well. Others well worthy of note are :- Escallonia macrantha and E. rubra, Garrya elliptica, Tamarisk (this is perhaps the best of all), Aucuba japonica, Holly, Privet, Arbutus Uaedo, Hydrangea hortensis, Fuchsia Riccartoni, Levcesteria formosa, and Deutzias of sorts. Of forest trees we find the following to be the best :- Pinus austriaca, P. Laricio, P. pinaster, P. insignis, P. maritima, P. Cembra, and the High land Pine, P. sylvestris. Amongst hardwoods the Sycamore, Alder, Poplar, and Turkish Oak, deserve

EUCALYPTUS GLOBULUS .- Considerable attention is again being directed to this plant, as to whether or not it is sufficiently hardy to survive our winters. That it is not, was, I thought, clearly enough proved some halfa-dozen years ago, when nearly every specimen in the country was killed to the ground. In the Gardeners' Chronicle of May 31 the Eucalyptus is again brought under notice, and spoken of as being hardy, and passing unscathed through a Coroish winter. This may be true, still its half-hardy nature and non-suitability for our climate generally is well known, and the fact established beyond a doubt. In some warm, well-sheltered, maritime situations in the south of England it may and does succeed, but further north it is in most cases quite a failure, and has long since been expelled from the Arboretum. There a number of these trees were planted out experimentally over the park, but although they did well for several years, and in many cases had attained a height of from 12 to 15 feet, yet during a severe winter, some five years ago they were killed to the ground-not even one tree being left. If I remember rightly the Eucalyptus met a similar fate in Ireland at the same time. [Ves. See p. 678.]

THE CORNISH ELM (Ulmus cornubiensis) is a tree that far too seldom receives the attention its merits deserve. When viewed from a distance this tree closely resembles the Lombardy Poplar; it is, however, more branched, and the habit rarely so fastigiate. Here it attains a large size, many trees being from 70 to 80 feet in height, and girting at 3 feet up to 7 to 8 feet. In the formation of a young plantation here some years since this tree was extensively used, especially along the outskirts, where its decided character can best be seen. The difficulty of procuring the true variety, as well as its requiring to be grafted, have in most cases made young plants of the Cornish Elm very scarce and expensive. It produces seed very sparingly, and several unsuccessful attempts to raise it in this way have convinced us that at least this method of perpetuation is impracticable. wood is hard, beautifully grained, and susceptible of a fine polish. During severe gales lately several trees of this kind were blown over in the park here, and the timber used instead of the Eoglish Elm in boat building. A plank sawn from the centre of one of these trees was polished and preserved in the nursery along with a collection of woods, and the timber seems but little inferior to the species.

HISTORY OF OLD AND PICTURESQUE TREES, or of trees remarkable for their great size, rarity, or beauty is always a most interesting subject, and of value to science as well as practical forestry. the subject has received a fair share of public attention, and the dimensions of many fine old trees have been recorded in the pages of the Gardeners' Chronicle, as well as various other horticultural papers, thus affording a lasting record for comparison of the growth and longevity of our forest trees. There can be no doubt that many old and remarkable trees, growing in out-of-the-way places or in private grounds where but few frequent, have never been recorded, so that it is rather a difficult matter to state where the largest specimen of any particular tree is growing. those interested at all in the subject, the exact measuring and recording of any remarkable tree they may come across would occasion but little trouble or may come across would occasion but little trouble or inconvenience, and would be of immense benefit to science and forestry. The Scottish Arboricultural Society has done good work in this way by offering prizes for reports on "The old and remarkable trees on any estate." A. D. Webster, Penrhyn Castle, North Wales.

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A FEAST OF PYRETHRUMS .- No better or more appropriate designation could be applied to the wonderful and unprecedented display of double and single Pyrethrums staged by Messrs. Kelway & Son, nurserymen, Langport, at the meeting of the Royal Horticultural Society on Tuesday last. It must be said, in reference to this firm, that if they take a flower in hand they make their mark with it, as witness the Gladiolus; and they are proving equally successful with the Pyrethrum, and especially with the single forms, as they are this season distributing the large number of sixty-three new varieties, some of them distinguished by great richness of colour, size, and symmetry. Some of the finest of the newer varieties of double Pyrethrums were raised at Langport. It was computed that Messrs. Kelway & Son staged about 1000 flowers in something like 200 varieties, in this way furnishing a really representative collection. To the horticulturist they possessed an absorbing interest; the ordinary visitor to the Health Exhibition stood before the flowers and hazarded all sorts of opinions as to what these flowers were, and their guesses were amusingly wide of the

The following new varieties of the present year were exhibited in fine form :- Peach, delicate blush, very fine; Shotover, lovely pink, very pretty; and Virgo, sulphur, large and fine. The two following were new of 1883, and were seen to excellent advantage on this occasion :- Marquis of Salisbury, cherry-rose, very fine and distinct; and Niobe, flesh-coloured, and full. These are all flowers raised by Messrs. Kelway & Son. The following varieties may be cited as the very finest among the double flowers :- Captain Boyton (Kelway), bright crimson, very fine; Captain Nares (Kelway), really brilliant in colour, of a very rich bright crimson; Chamois, pale chamois colour, very distinct; Duchess of Edinburgh (Kelway), mauve, extra fine; Emile Lemoine, rosy-lilac, large and full; Floribunda plena, rose; Galopin (Kelway), crimson, edged with white, very fine; Gloire d'Italie, rosy-red, very fine; Hobart Pasha (Kelway), very rich in colour, brilliant maroon, extra fine; Imbricatum plenum, crimson, very fine; Im-pératrice Charlotte, flesh, very fine; Iturbide, pur-plish-crimson, very large, bright, and of the finest form; Iveryana, bright rose; J. N. Tweedy, maroon, very fine, one of the very best ; Lady Derby (Kelway), silvery flesh, very fine; Madame Billiard, white, tinged with rose, very fine; Minerva, rose, very fine; Mons. Barrel, purplish-crimson, very large and fine; Nemesis, red, shaded with orange, very fine; Peau Rouge, rosy-red, very fine indeed; Penelope, French-white, yellow centre; Placida (Kelway), peach colour, very fine; Princesse de Metternish, pure white, very fine; Progress, crimson, bronze centre, very fine; Rembrandt (Kelway), rosy-purple, very fine; Rose Perfection, Illac, very fine; and Versailles Defiance, carmine, very fine.

Of single flowered varieties the following are all of Messrs, Kelway & Son's own raising (Where did they raise the names? Neither Editornor Reader can accept any responsibility in this case. En.]:—Abbracca, lilac, very fine; Amptilis, rose, very fine; Abantiades, rich crimson, very fine; Abdalonymus, pale purplish-crimson; Abarbarea, pale magenta, very fine; Abdatotillas, bright magenta, very strikling; Abrodcatus, magenta-crimson, very fine; Nagnania, delicate fesh, very pretty; Cerinthus, purplish-red, very fine; Devona, pink with white ring, very pretty; Endora, rich crimson, fine and striking; Gargara, carmine, very fine; Genesus, brilliant crimson, extra fine; Hippona, crimson-scarlet, very rich in colour; Labyrinthus, rosp-purple; Abæcenium, rich rose, very fine; Abodiacum, piok, pretty and attractive; Menander, purple-crimson; Nero, crimson, very fine; Opheas, brilliant crimson, very fine; Padusa, white, slightly tinted with blush—very pretty; Pasos, carmine-rose—very fine; Raphana, amaranth; Rubington of the colour; Theodotus, maroon—very fine; Colour; Theodotus, maroon—brilliant; Urion, rosy-lilac—very fine; Vestatis, bright pink; Rhodus, dark maroon; Abrocamus, magenta—very fine; Epicerdis, rosy-purple; and Cerretani blush.

It is comparatively easy to fertilise the single flowers; indeed, they seed pretty freely of themselves, but in the case of the double flowers the florets have to be cut away in order that the fertiliser may reach the necessary organs. It is from seed of double flowers that double varieties are raised; but they throw single forms also. Occasionally a double form is found in seedlings raised from seed of single varieties, but it is a very rare occurrence. The seed is sown the following spring, but it is two years before the plants flower and show their characters. Langport soil is a heavy loam resting on a bed of gravel, and this appears to suit the plants exactly. Need we say that the Pyrethrum is perfectly hardy, but it suffers more from excessive wet than from hard frost, hence the advantage of a gravel sub-soil like that at Langport. The Pyrethrum has one most determined enemy-the slug. In autumn it will secrete itself among the decaying leaves, lie there until spring, and as soon as the plants begin to put forth their young growths prey upon them, eating out the hearts of the Kelway states that after searching for slugs, and dislodging such as can be discovered, it is a good plan to place a layer of sharp sand about the plants after clearing away the dead foliage in autumn, and renewing it when necessary. R. D.

THE AURICULA.—On May 3, p. 583, I wrote on crossing the different varieties with each other to obtain certain results. It is too late in the season now to say anything more on this subject; but it is very singular that this season the raisers of seedling Auriculas, or rather those who attempt to raise them, are more numerous than I ever knew. I have had many pips and trusses sent, but not a good one-none that would beat even the ordinary named varieties. I would like to say, once for all, that really good seedlings are not likely to be had, unless the best named varieties are crossed with each other. Prince of Greens, for instance, with its pale tube, ought not to be crossed with Beeston's Apollo, also with a pale tube, but with Colonel Taylor, or even Admiral Napier, with its angular paste, would be better than a pale tubed variety. In the white-edged class Acme, John Simonite, and Conservative would make the best seed parents; while in grey-edges George Lighthody, Dr. Horner, and Silvia would do well to cross for good quality in this class. In selfs, Pizarro, Ellen Lan-caster, and Eliza will make the best crosses. The seed-pods show signs of approaching the ripening stage, and as soon as the seeds are ripe save them sow in pots or small pans, placing them in a frame or hand-light in a shady place. soil must be kept moist, when the seedling plants will appear in two or three weeks, but the largest proportion of them will not vegetate until the following spring. It is now time to see that all the repot-ting is done, if it has not already been attended to. The small offsets taken off in the spring will make good flowering plants for next year with careful culti-

THE CARNATION AND PICOTEE. — Allusion was also made at p. 583 to seedlings of these. If they were sown at the right time in April they are now

good-sized plants, and might be planted out on the irst favourable opportunity where they are to flower. After they are planted out but little more attention will be required, except to keep the ground free from weeds by occasional hocing. The named varieties grown in pots are making exceedingly good growth this year; considering the excessively quently cold weather this is rather surprising, for the Carnation, as a rule, does not like exposure to cold, drying east winds. The flower-stems should be tied to the sticks as they advance in growth, and disbudding must he attended to as soon as the buds are large enough. Leave about three flowers to bloom on each This is done to increase the size of the flowers, but if they are not intended to be cut for exhibition it is best to allow the whole of the buds to remain. Greenfly is still troublesome, and, as the buds increase in size and hot weather sets in, an invasion of thrips may be looked for. In hot dry weather it is a good plan to give them a dewiog overhead with the garden engine or a syringe.

Potting, tying, and generally looking after the wants of the perpetual flowering varieties will give occupation to the grower during this and the two following months. Some people grow them under glass all the year round; I have done so, but it is much better to put them out-of-doors in a rather sheltered place; but they must be well exposed to light and air, else they get drawn up, which is an evil to be avoided: such plants will not produce the best flowers—they are obtained from sturdy clean plants that have had the full benefit of light and air without being checked by heing exposed to draughts.

THE PINK .- June is the month for the Pink to bloom; the buds are, therefore, well advanced, at least such as we have, for quite three-fourths of them have been destroyed by wire-worm. Growers should take note of this when planting on recently brokenup meadow-land, as even with all the care and attention to trapping this pest they still destroy the plants. Many of the worms are destroyed by placing Carrots and Potatos under the surface of the ground, into which they insert themselves, and are drawn out with The blooms are much increased in size, and them. the lacing is more perfectly developed when the surface of the bed is dressed with decayed manure, and the plants well watered in dry weather. About the end of this month the pipings should be put in. They will do in the open air if dibbled into fine soil under the shady side of a wall or fence. They do better of course if a hand-light or frame can be afforded for

THE FORCING PINKS should now be in the form of good-sized plants. They do best planted in an open space of ground with about 9 inches allowed between each plant. We first put in the cuttings closely together in pots, then plant out a few inches apart in boxes, to be ultimately planted out in the open ground. They are potted into the pots they are to flower in during the month of October.

THE PANSY.—Our plants of these have been rather late in blooming, and the flowers are not very large, owing to the late cold spring and succeeding dry weather. When there is time to mulch the surface of the beds and to water freely, there is then oot much difficulty in getting good blooms. The weather is very seldom too cold for this plant. I found the wire-worm quite as destructive to the Pansies as it was to the Pinks. The plants that were in pots are now over, and if there are plenty out-of-doors the pot plants may be thrown away. Old Pansy plants give quantities of bloom, but all of it out of character. Cuttings may be put in now to flower in the autumn. For giving a mass of bloom the whole season through, seedlings are the best. They must be planted in rich deep soil a foot apart; and also be surface-dressed three times during their time of flowering, and in dry weather be well watered.

THE PHLOX AND PENTSTEMON.—These hardy plants are amongst the most useful things we have in the flower garden for the late sunmer and autumn months. The young plants of Phloxes propagated from cuttings in March should be grown on vigorously whether they are in pots or planted-out. They are both gross feeders, and require good surface dressings and plenty of water. The old plants of Pentstemons usually suffer from severe frosts in winter, so that it is necessary to propagate plants in the autumn from cuttings. This year we scarcely lost a single plant out-of-doors; but the young ones are certainly the best to produce good flower-spikes. They ough now to be planted-out. J. Donglas, Great Gearies, Hjord.

COLONIAL NOTES.

CEYLON.—We extract the following notes from the Report of the Director of the Royal Botanic Gardens, Ceylon, for the year 1883:—

COFFEE,—The transition period of the planting revolution which has been in progress here for the last few years may be now considered nearly over, and the new conditions to be in a fair way to full establishment. Coffee, which was estimated only three years ago to cover 252,000 acres, now occupies little over 178,000 acres;* and, what is more striking as evideoce of the change, very much more than half of this is being grown along with Cinchona, Tea or Cacao, a condition general preliminary only to a complete substitution of the old by the newer and more promising crop.

The export for the past commercial year (ending with September, 1883), 260,000 cwt., is the lowest for forty years, and is considerably less than half that of the previous one.

This tremendous falling off in crops is, with a due allowance for a series of had seasons, the result of leaf-disease. On estates, no doubt, this has operated indirectly as well as directly, by rendering it impossible to afford a liberal cultivation, but the terrible direct effects of continued attacks of the pest are strikingly seen in the condition of so-called "native" Coffee, the export of which has dwindled to 14,422 cwt., little over one-third of that of last year.

The complete extinction of "native" Arabian Coffee would, under present conditions, be no great loss, and as regards Hemileia, even a direct benefit; and the same may be said of that on many old and ill-tended There is indeed reason to hope, that when Coffee hecomes one crop out of several, and its cultivation, instead of occupying vast sheets of country to the exclusion of all other vegetation, becomes restricted to localities and estates where it is known to respond to good treatment, attacks of leaf-disease will be less severe and less frequent. We may hope that the fungus will then take its place with the many other more or less similar pests which afflict cultivated plants, and which, though always present, vary in mildness or severity in accordance with climatic conditions (weather) from season to season. It is to be earnestly desired that every encouragement be given to keeping up a liberal cultivation of Coffee where possible

The area, 4651 acres, given as under Liberian Coffee, shows that the cultivation of this species is slowly increasing. It appears to be allowed that its yield is, as a rule, better than that of Arabian Coffee, in spite of severe attacks of leaf-disease. A large distribution has been made to native cultivators, principally through the Government agents. From Henaratgoda garden over 40,000 seedling plants have been given out, and a smaller quantity from Pérádeniya.

TEA.—Though the progress in this cultivation was astonishingly rapid in 1882, the past year has seen a for greater extension. Ceylon exported in the commercial year (1882-3) over a million and a-hall pounds (1,522,852), and in the three closing months of 1883 probably not lesss than 150,000 lb. more. The acreage under Tea is estimated at 32,000, but on 20,000 acres of this the plants are not yet three years old. A very large proportion is, however, old Coffee land, and about 5000 estimated acres of Tea are mixed with Coffee or Cunchona.

The prospects of Tea-growing are, on the whole, very favourable, and present experience is most encouraging. From the first, when the consumption was almost entirely local, an excellent character distinguished Ceylon Tea; and its special qualities appear to be generally maintained and to be winning approbation in the home market. The fine series of samples (over eighty in number) which competed at the Colombo Agri-Horticultural Show in August, has been sent on by the Planters' Association to the Calcutta Exhibition, where they will be able to be compared with the picked Teas of India.

CINCHONA.—The export of bark from Ceyloa for the last commercial year attained the extraordinary total of nearly seven million pounds (6,925,953 jb.), and it is supposed that fully one a half million more have been exported in the three concluding months of 1883. This is a greater quantity than could have

A I take the estimates and other figures throughout this part of my report from the series carefully prepared for Ferguson's Directory for 1883-4.

been expected, but it is to be feared that a large proportion has been very poor stuff, which, at the low prices prevailing, it can scarcely have been worth while to send home. To make it profitable to sell "twigs" at 2d.—6d. a pound, needs the existence of a local manufactory in operation. This, too, would be independent of all "rings" and combinations in Europe, such as that which during the past year has succeeded in lowering the price of bark and raising the cost of quinine. A local factory for extracting alkaloids on the spot, when it is established, will indeed be an equal benefit to the growers of Cinchona and the consumers of the febrifuge alkaloids in the East; but at present it seems more likely to be set up in South India than in Ceylon.

It is estimated that there are probably 128,000,000 Cinchona trees in the Colony, of which not over 22,000,000 are more than two years old. What proportion of the remaining 106,000,000 is likely to grow up to maturity can only be guessed at, but it will pro-bably not be a large one. Much less Cinchona has been raised during this year, and it is very doubtful if the large export of the past one will be maintained.

An extensive contribution to the botany of cultivated Cinchonas is contained in a report* upon the Government plantations in the Nilgiris, which I had the honour of offering to the Government of Madras, after a visit made in May at the invitation of that Government, and with the kind sanction of His Excellency the Governor of this Colony. The most interesting question here dealt with, is the nature of the Cin-chonas known in the Nilgiris as magnifolia and pubescens. In my report for 1881, p. 5, I have referred to these kinds of Cinchona, and there proposed the name robusta for them, expressing the opinion that their local hybrid origin, as maintained by McIvor, and generally accepted in Ceylon, was more probable than the correctness of Mr. Cross statements as to their identity with the Pata de Gallinazo, of Chimborazo-i.e., C. erythrantha. Against this view it had been urged that the trees existed in the oldest plots at Naduvatam, planted in 1862, before any Cinchona had flowered in India. careful examination of these, and of the reports of the plantations, has confirmed the original opinion, and I have shown that these trees were almost certainly planted by McIvor as supplies in 1866 7, and as hybrid seedlings. I was also able to name the puzzling corky-barked species called crispa by Cross (who collected it in the Samora Mountains, east of Loxa, in 1861), lucumæsolia by Markham, and decurrentisolia by Howard. It proves to be C. Humboldtiana, Lamb., a species botanically allied to C. carabavensis (C. Pahudiana), and not likely to prove of value, Attention was also called to another corky-barked Cinchona, a form of C. officinalis, to C. lancifolia, of which a few trees still remain, and to the valuable C. pitayensis. A good deal of synonymy has been cleared up, and it is to be hoped that the nomenclature now given, the result of much trouble and research, may be generally accepted in S. India and Ceylon, where at all events uniformity ought to prevail. The practical suggestions made in the report as to the principles which should regulate the future management of the plantations-including the appointment of a quinologist, to work with the Superintendent in a system of experimental cultivation based on selection by analysis-are under the consideration of the Secretary of State.

CACAO. - The position of this product in very satiscacao.—The position of units product in the last commercial year (3588 cwt.) have actually trebled that of the year before. Of the estimated acreage (9896 acres) over a half is growing along with Coffee (mainly Liberian), and much is not in full bearing. The efforts of the last two or three years to induce a native cultivation have lately been more vigorously pushed; and encouraged by the Government officials, the natives seem at last to be more ment officials, the natives seem at last to be more favourably disposed towards it. The garden at Henaratgoda has played the important part in this attempt to supplant in suitable districts the nearly valueless native Coffee by a profitable substitute. No useful plant is more suited for the village garden than this, if only the cultivators will take the trouble to protect and look after the young plants for the first year or two; when once established little further attention is required.

INDIA-RUBBER: † CEARA .- A planted area of 977

acres is credited to this, but rubber has not yet appeared among our exports. Since it has been ascertained that the quality is excellent,* cultivators have been endeavouring to discover a means by which the milk can be obtained at a cost sufficiently low to give a return, but without, as yet, encouraging

The yield of the gutta percha trees seems to be very small-less even than the rubber trees. Thus, from a tree of Dichopsis Gutta, thought to be over 100 years old, and over 100 feet high, Mr. Wray succeeded in son, and over to feet fight, 3rt. Wray succeeded in extracting, by the ordinary native method of felling and ringing the trunk and branches, only 2 lb. 5 oz. of clean gutta. Of "Gutta Taban puth," a tree to inches in diameter gave 2 lb. 11 oz., and one of Payena Leerii, 2 fect 8 inches in circumference, only oz. Mr. Wray has satisfied himself that only about 3th part of the gutta percha actually in the bark is extracted by this method, and he believes that by pounding and boiling the bark the whole could be obtained. As the question of the supply of gutta percha is becoming a pressing one, it is to be hoped opinion. To quote Sir J. Hooker (Kew Report, 1881, p. 38), "the time cannot be far distant when the natural sources of gutta percha will be definitely used up." In view of this contingency it behoves the Governments of those few British Colonies— Ceylon being one-in which the trees will grow to lose no time in establishing plantations, which must in the future become a valuable source of revenue. But in this Colony neither in this case nor in the case of indiarubber can anything be done until a proper forest conservancy is established.

Peports of Şocieties.

Royal Horticultural : June 10.

SCIENTIFIC COMMITTEE. - Sir J. D. Hooker, SCIENTIFIC COMMITTEE.—SIT J. D. HOOKET, K.C.S.I., in the chair. Present: Messrs. Grote, Bennett, Boulger, Loder, Wilson, Pascoe, McLach-lan, Houston, Murray, Ridley, Hon, and Rev. J. T. Boscawen, Dr. Masters, Rev. G. Henslow, Secre-

tary.

Diatoms in Swimming Bath. - Rev. G. Henslow, adverting to a communication made by him to the last meeting, stated that since he had painted the glass roof of a green colour, the growths in question bad ceased.

Wallflower on Currant Bush .- Mr. G. Murray Wallfower on Currant Bush.—Mr. G. Murray reported that he had examined the specimen refered to him at the last meeting, and found that the body traversing the stem of the Black Currant was a stem, and not a root. The Wallflower seed must therefore probably have germinated in the ground, and sent up jits stem through the centre of the Currant stem, the pith of which was destroyed or partly converted into cork. There was no true epidermis on the stem, which was of two years' growth.

Inseet Pests. — Mr. Houston showed leaves of Plums devoured by larvee of Hypnomenta, which egatack also Hawthorns, Pyracanthas, &c.

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**Rubus Ideats var. Leesti.—Dr. Masters showed flowering specimens of this singular variety of the Raspberry, sometimes called R. obtusifolius, sent by Mr. Culverwell, who retains his conviction that this form was raised by himself as a direct result of the fertilisation of the Raspberry by the pollen of a Strawberry—a view not endorsed by the committee. That the plant is really of hybrid origin, however, seems probable, from the fact that the carpels are almost all deformed, although the pollen in the specifict. Dr. Focke records a hybrid between R. Idæus and R. cæsius, but which does not appear to be the same as the present plant. same as the present plant.

Leeks with well-formed Bulls, Dr. Masters showed on the part of an anonymous correspondent, specimens of Leeks, some of which had globular bulls like those of an Onion. The Leek is supposed to be a gardeo variety of Allium Ampeloprasum, and these specimeos were in some part a reversion to the wild

Deformed Strawberry .- Mr. McLachlan showed a Strawberry with a deformed and contracted inflores-cence and virescent flowers. It was considered probable that it might be due to the puncture of an Acarus.

Lilies .- Mr. G. F. Wilson exhibited specimens to show how Lilies recovered after injury from frost.

Gall on Root of Bean.—Mr. G. Murray mentioned the receipt of specimens of roots of Beans affected

with Galls, the work of a weevil, associated with which were numerous Anguillulidæ, which were con-sidered as more injurious than the weevil.

sidered as more injurious than the weevil.

Monstrous Begenias.—Sir J. D. Hooker showed
small flowers of Begonia destitute of ovary, but with
stamens proceeding from the base of the styles.

Heterocism of Fungi.—Mr. Plowright sent specimens of Rostelia lacerata, artificially produced on
Hawthorn, by means of Podisoma Juniperi, also a
paper on Wheat mildew and the fungi associated with
it. (See p. 267.) (See p. 767.)
Rustelia cancellata on the Pear.—Mr. W. G. Smith

Resteria cancentata on the Fear,—Mr. W. G. Smill said that, without going so far as to say that a connection between the Roestelia and Podisoma was impossible, he might point out that Professor Farlow had shown that R. cancellata was very common in Massachusetts, whilst its supposed Rœstelia was not known to occur at all. Professor Farlow, in America, known to occur at all. Professor Farlow, in America, had never been able to artificially produce the Restelia on the Pear (the plant specially named by Oersted), but, on the contrary, the spores of Podisoma Juniperi-Sabinas, when placed on a variety of leaves, including the Pear, were followed by Spermagonia on Hawthorn only. Oersted said the Spermagonia of Hawthorn were produced by another and different species of Podisoma. Professor Farlow obtained a like result upon Hawthorn leaves after the application of the sources of Gwingsperapring biseature in biseature. like result upon Hawthorn leaves after the applica-tion of the spores of Gymnosporangium biseptum and G. macropus, both fungi being peculiar to America, and, therefore, unknown in Europe. Mr. Smith said that whilst the results of spore application were so contradictory he thought it would be well to place the heterocism of the Uredines—at any rate for the present—in a suspense account.

Formation of Tubers on Rootless Cuttings .- Mr. Burbidge sent a paper detailing how, after making outlings of Solanum Commersoni, a production of tubers on the subterranean portion was observed prior to any formation of roots, the new tuber was therefore in this case formed wholly independently of root action. (See p. 757.)

action. (See p. 757.)

FLORAL COMMITTEE, —Present in Section A: Thomas Moore, Esq, in the chair; Messrs. J. Fraser, J. Laing, F. R. Kinghorn, G. Henslow, II. Williams, J. Dominy, J. Woodbridge, E. Hill, J. O'Drien, H. Ballantine, and Dr. Masters. In Section B: Shirley Hibberd, Esq., in the chair; Messrs. J. James. W. Bealby, G. F. Wilson, G. Duffield, W. B. Kellock, H. Bennett, H. Cannell, and J. Donglas. The principal interest in the exhibition to-day centered in the great collections of hardy finwers, brought by a few well-known metropolitan growers of these now much appreciated plants; and the show of these should at least strengthen the hold they have taken of the majority of people who possess a garden, it matters not of what dimensions. Some of the subjects may not ndapt themselves to all soils and positions, and among these are mainly found such half-hardy bulbs as Babianas, Ixias, Sparaxis, and Tritonias. The best collection as regards variety and general completeness was that staged by Mr. T. S. Ware, Tottenham, which contained such a number of good things that we are constrained to name only a very few of the more striking of them. There were collections of double and single flowered Pyrethrums, of Aquilegia glandulosa, of single Poppies and Violas. Amongst the last-camed were—Blue King, deep blue with purple center; Miss Felton, which, also with purple center; Gem of Roses, deep blue; and Countess of Kintore, porcelain-blue and white—all good bedding kinds. Campanula glomerata dahurica made a fine mass of purple colour, so did Lathyrus grandiflorus of red. There was a good quantity of Cypripedium calceolus, beautifully fresh, making one wonder why so few gardeners grow it. Thermopsis fabacea was a telling group of pure yellow, much superior to Lupinus. Arrows. FLORAL COMMITTEE. - Present in Section A: group of pure yellow, much superior to Lupinus arboreus. Ixias formed perhaps the showiest and most admired genus in this and other collections. In Mr. Ware's were almost all the cultivated hybrids of these Name's were almost all the cultivated hybrids of these lovely early summer flowers. I. rosea plena is a very pretty thing, as is I. Vulcan, a white suffused with rose, and having purplish-rose stripes on the petals; I. Lady of the Lake, a rosy-purple, was likewise of great attractiveness. Good bunches of Dielytra formosa, and collections of Anemones and Iris germanica, and the highly scented white Pink, Alice Lee, were to be seen amongst this lot. A silvergilt Flora Medal or a smaller collection of hardy flowers. Foremost for beauty were some Brompton Stocks in pots, with grand spikes of bloom of nearly 1 foot in length, vigorous and sturdy, with the individual flowers thickly set, and measuring in the fullygrown flowers at the bottom of the spike quite 1\(\frac{1}{2}\) inch in diameter. The Aquilegia californica hybrida shown in this group were also of great beauty, as were the in diameter. The Aquilegia californica hybrida shown in this group were also of great beauty, as were the Ixias and Tritonias. Ixia maculosa and Babiana General Slade, of a deep purplish rose colour, were pre-emineally fine, as was Antholyza coccinea, with brilliant rosy - scarlet bloom. Pretty collections of German Irises and Pyrethrums were also included in this exhibit. A Bronze Flora Medal was awarded

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 † The import of caoutcho into Great Britain during 1882 amounted to nearly twenty million pounds.

^{*} I am informed that as much as 4s. a pound has been obtained for Ceylon Ceara rubber.

to Messrs. Barr & Son, Covent Garden, for an extensive group, containing collections of Pyrethrums of single and double forms; of Iris versicolor, I. neglecta, herbaceous Pæonies, a showy lot of Gladiolus byzantinus, a handsome lot of bloom of Spanish Iris of a most interesting character, Iris squalens in considerable variety as regards names, and many varieties of Iris pallida. Mixed with the more conspicuous plants were quantities of Camassia esculenta and French Ranunculuses. Allium acuminata, a neat purplish-lilae corymb of bloom; Cyclobothra pulchella, Broditea gracilis, yellow, striped with green; and Scilla ciliaris, with rosy-likae petals and lilae anthers, gold tipped, were in Messrs. Barr's collection. A Bronze Flova Medal was also nawafed to Messrs. Hooper & Co., Covent Garden, for a small group, consisting of herbaceous Pavonies, white, crimson, rose fringed, and whole petalled. P. Couronne d'Or, a double flower, the centre petals being tipped with rose—a distinct and pleasing variety; a collection of German Irises. A Bronze Flora Medal was awarded to Messrs. Kelway & Son, Langport, Somerset, for a very extensive collection of the best new and old Pyrethrums, Poppies, and herbaceous Pæonies. Seedling Amaryllis were shown by them, and if not up to the high standard we are accustomed to see from Messrs. Veitch, Williams, and others, there were undoubtedly great advances on old varieties seen Messrs. Veitch, Williams, and others, there were undoubtedly great advances on old varieties seen amongst them. We noticed Maximentius, a crimson antings them. We hother backments, a crimage starlet; stripe on a white ground; Abontes, an orange-scarlet; Bellona, a finely shaped deep crimson bloom of much apparent substance; Tricoris, a crimson, with a broad regular formed band running down each petal; Bellona, a finely shaped deep crimson bloom of much apparent substance; Tricoris, a crimson, with a broad regular formed band runoing down each petal; Volana, a cinnabar-red; Herald, white, striped with crimson; and Neptune, also a crimson of good form. From Messrs. Cannell & Sons, Swanley, there came a bright little boxful of cut blooms of Begonia hybrida, among which were some of stellate form that were very handsome. The three varieties of this form are Clovis, a cinnabar-red, the petals irregularly serrated, and a centre of greyish-green similarly formed petals; Berenice, a bright scarlet flower. Other cut blooms of Begonias were Duchesse de Gallière; Rosamonde, large and fall, with, as it were, several centres; Fulgurante, a deep crimson-scarlet, of pleasing proportions; Mons. Bauer, and Karl XII., a tazza-like bloom, showy and distinct. A collection of Pansy blooms came from the same exhibitor, and received a Vote of Thanks. Mr. J. Rapley, gr. to J. Brand, Esq., Bedford Hill House, Balham, staged a group of Calceolarias, consisting of dwarf plants of yellow and parti-coloured blooms, and the pure yellow Cloth of Gold, for which he obtained a Bronz-Banksian Medal. Mr. J. James, The Nursery, Woodside, Farnham Royal, received a Vote of Thanks for cut blooms of Calceolarias of high quality, the strain of which was Highly Commended. Mr. Stacey, nuryscryman, Dumow, showed a good stand of Verbenas, for one of which, Lord Brooke—a very bright scarlet with a bold white eye—he obtained a First-class Certificate. Mr. Stevens, St. John's Nursery, Putney, showed a new Abultion of full size and colour named Lustrous, and received for the same a Vote of Thanks. Messrs. Paul & Son, Cheshutt, showed the new Tea Rose, Souvenir de Thérése Levet, bright rose shaded with crimson; and Mr. Ware, Papaver nudicanle album and P. miniatum, an orange-tinted bloom. Messrs, J. Veitch & Sons thisted Weigela hortensis nivea, a pure white; Dr. II. Baillon, a dark red; Kalmia latiolia major splendens, a distinct deeper coloured variety of boughast galeate, a desirte wat handsome John of this very useful Fir and the pretty Veronica Lyalli, the correctness of the name being questioned. Mr. S. Williams brought a neat compact example of Metrosideros floribunda alba, a white flowered Bottlerush, for which a Vote of Thanks was given. From Syon House, Mr. Woodbridgebroughtan Ornithogalum called caudatum, an introduction from the Cape, with large dense heads of fine paper-white flowers, which the plant produces with great freedom. A very large form of Oncidium Marshallianum, named giganteum, came from G. N. Wyatt, Esq., Lake House, Cheltenham; and Messrs. Sander & Cockhibited and received First-class Certificates for two grand forms of Odontoglossum crispum. The variety Souvenir du Prince Leopold is a fine white shaded with manve, and the lip blotched with brown; oc. c. roseum guttatum is of fine size and shape, heavily spotted with pale brown. Messrs. Cannell & Sons received First-class Certificates for two fine Begonias—Madame Castiguez, large full double, and bright rosy-cerise in colour; and Lucie Lemoine, a very double white, quite a miniature Hollyhock in shape. Messrs John Laing & Co. bad a very prett double primrose-coloured Begonia, named Canary Bird, which also obtained the coveted award. Statice Swarowii, a miniature growing plant with branched spikes of small rose-pink flowers, came from Messrs. James

Carter & Co. Mr. Hill, gr. to Sir N. de Rothschild, Tring Park, brought a very fine Cattleya gigas with eleven lovely flowers, for which he received a Cultural Commendation.

The awards made were :-

Section A.

FIRST-CLASS CERTIFICATES.

To Messrs, Sander & Co., for Odontoglossum crispum

To Messrs, Sander & Co., for Odontoglossum crispum roseum guitatum.

To Messrs, Sander & Co., for Odontoglossum crispum Sonvenir du Prince Leopold.

To Messrs, Veitch & Sons, for Kalmia latifolia major

splendens.
SECOND-CLASS CERTIFICATE.

To Messrs. James Carter & Co., for Statice Suwarowii.

FIRST-CLASS CERTIFICATES.

To Messrs, John Laing & Co., for Begonia, Canary

To Messrs, H. Cannell & Sons, for Begonia, Madame Castaiguez.
To Messrs, H. Cannell & Sons, for Begonia, Lucie

Lemoine.
To Mr. W. Stacey, for Verbena, Lord Brooke.

HIGHLY COMMENDED.

Mr. J. James' strain of herbaceous Calceolarias,

FRUIT COMMITTEE,—Present: II. Webb, Esq., in the chair; Messrs. H. J. Veitch, R. Hogg, W. Paul, J. Roberts, J. Burnett. G. Bunyard, J. Smith, G. T. Miles, S. Lyon, G. Paul, P. Crowley, R. D. Blackmore, and J. Lee. The labours of this committee were very light, and but few objects brought before them call for special comment. A number of Melons were exhibited, the best being the Chalfont Favourite, a green-fleshed seedling between Victory Meloos were exhibited, the best being the Chairon Favourite, a green-fleshed seedling between Victory of Bath and a scarlet-fleshed seedling, exhibited by Mr. Herrin, gr. to T. N. Hibbert, Esq., Chalfont Park, Slough. It came out 1st in several good competitions last year, and is handsomely netted, besides being high-flavoured. Mr. Butler, gr. to G. Arlett, Esq., Manor Wood, Hatfield, sent a fine dish of Esq., Manor Wood, Royal George Peaches.

The Weather.

STATE OF THE WEATHER AT BLACKHEATH, LONDON,

DAY.	BAROS	ieter.	TEMPERATURE OF							rome- l De- tious om sher's es 6th ition.	WIND.	ALL.	
MONTH AND DAY.	Mean Reading Reduced to 32" Fahr.	Departure from Average of 18 years.	Highest.	Lowest.	Range.	Mean for Dav.	Departure of Mean	so years.	Dew Point.	Degree of Humidity. Sat. = 100.	Average Direction.	KAINFALL	
June	In.	In.								٠,		ln.	
5	29.64	-0.16	59.0	49.0	10.0	51 6		S 7	50 8	97 {	E.N.E.	1.03	
6	29 54	-0 26	51.5	46.5	8 0	48.5	-	9.0	47.9	ς8	W	0 53	
,	29.43	-0.37	56.9	46 o	10.9	49.6	-	8 0	45 2	86	N.E.	0.00	
8	23.62	-0.18	57.5	47.8	9.7	51.3	-	6.2	49.5	93	w.	0.12	
9	20.75	-0.04								92	N.W.	0.03	
10	20,05	+0.16								92 {	N.W.: N.NW.	0.00	
11		+0.23								95	W.	0.00	
	30.04	1 0.23	-		_	-	_						
Mean	29 71	0.09	58.6	47.0	11.6	51.5	-	6.2	59 5	93 {	W.: N.W.	1.71	
Jun	e 5	-Rain	alle	lay a	bas	nigl	ht;	а	flash	of lig	htniog	with	

- thunder at 3.30 rs. .

 6. Few gleams of sunshine; frequent rain.

 7. Fine; cull day and right.

 8. Gleans of sunshine at times; dull day, rain in the evening.
- evening.

 9.—Dull day and night.

 10.—Fine; dull.

 11.—Fine and bright generally, dark clouds passing at

London: Atmospheric Pressure.—During the week ending June 7, the reading of the barometer at the level of the sea decreased from 30.11 inches at the beginning of the week to 29.56 inches by 9 M.M. on the 34, increased to 29.53 inches by 9 M.M. on the 5th, decreased to 29.55 inches by 9 M.M. on the 5th, decreased to 29.55 inches by 9 M.M. on the 5th, decreased to 29.55 inches by 9 M.M. on the 5th decreased to 29.55 inches by 9 M.M. on the M.M. of the mean reading of the barometer for the week at the level of the sea was 29.72 inches, being 0.45 inch lower than last week, and 0.26 inch lower than the average of the week.

inch lower than isst week, and 0.20 like lower than the average of the week.

Temperature.— The highest temperature in the shade in the week was 60%, on the 2d; the highest on the 6th was 54%. The mean of the seven high day temperatures was 60%.

The lowest temperature was 46%, on the 2d and

7th; on the 4th the lowest temperature was 50°. The mean of the seven low night temperatures was

The mean of the seven low night temperatures was 47°.5.

The greatest range of temperature in one day was 23°, on the 24; the smallest was 6° on the 4th. The mean of the seven daily ranges was 13°.

The mean temperatures were—on the 1st, 54°; on the 2d, 56°; on the 3d, 55°; on the 4th, 52°.3; on the 5th, 51°.6; on the 6th, 48°.5, on the 7th, 49°.6; and these were all below their averages by 2°.5, 0°.7, 1°.9, 4°.8, 5°.7, 9°, and 8° respectively.

The highest reading of a thermometer with black-end bulb in vacuo placed in the full rays of the sin was 121°, on the 1st. The mean of the seven reading swa 80°.0.

was 121 of the was 89.9. The lowest reading of a minimum thermometer with its bulb placed on grass was 36°, on June 1. The mean of the seven readings was 40°.1. Rain fell on three days to the amount of 1.90 inch, of which 1.03 inch fell on the 5th.

ENGLAND: Temperature.—During the week ending June 7 the highest temperatures were 75°.6 at Nottingham, 71°.8 at Leicester and Bradford; the highest at Sunderland was 61°, and at Plymouth and Bristol 63°. The general mean was 67°.4 at Nottingham, 34° at Hull, 36° at Sheffield; the lowest at Liverpool was 63°, at Biackheath 46°, and at Brighton 45°.5. The general mean was 40°.1. The greatest ranges were 41°.7 at Nottingham, 32°.8 at Leicester, 31°.1 at Bradford; the smallest ranges were 18°.5 at Liverpool, 20°.5 at Beighton, and 21° at Plymouth and Sunderland. The general mean was 27°.3.

and 27 at rymouth and Sudderland. The general mean was 27's.

The mean of the seven high day temperatures was 67's. at Nottingham, 65'.7 at Leicester, 65''.6 at Cambridge; and was lowest at Sunderland, 55''.3, at Brighton 50''.7, and at Truro 60''.2. The general mean was 62''.

The mean of the seven low hight temperatures was 70''.

Brighton 59°,7, and at Truro 60°,2. The general mean was 62°.

The mean of the seven low night temperatures whighest at Liverpool, 48°,6, at Shefileld 48°,2, at Plymouth and Brighton 47°,9; and was lowest at Itall 41°,8; at Wolverhampton 43°,2, at Nottingham 43°,5. The general mean was 45°,7.

The mean daily range was greatest at Nottingham, 24°, at Cambridge 21°,5, at Hull 20°,9; and was 1°,4 to Cambridge 21°,5, at Hull 20°,3 and was 1°,4 to Shouchtand, 1°,4 to Brighton 11°,8 at Plymouth 12°,4. The general mean was 16°,3.

The mean temperature was highest at Leicrester, 54°,3, at Nottingham and Shefield 53°,7; and was lowest at Sunderland, 4°,9, at Blotton 50°,4, at Ifall 50°,5. The general mean was 52°.

Katim. The largest fall was 1.90 inch, at Blackheath, 1,42 inch at Brighton, 1.07 inch at Truro; the smallest fall was 0.20 inch at Leeds, 0.21 inch at Sunderland, 0.23 inch at Bradford. The general mean fall was 0.70 inch.

SCOTLAND: **Trunserature.—During the week end-

SCOTLAND: Temperature.—During the week ending June 7, the highest temperature was 67°, 3, at Paisley; at Aberdeen the highest was 60°. The general mean was 64°, 6.

The lowest temperature in the week was 37°, at Perth; at Leith the lowest temperature was 44°.9.

The general mean was 42°.

The mean temperature was highest at Paisley, 52°.9; and lowest at Aberdeen, 51°. The general

nean was 5f. 9. general mean was 5f. 10 general mean was 5f. 9. Rain.—The largest fall was 1.04 inch, at Paisley; the smallest fall was 0.10 inch, at Dundee. The general mean fall was 0.43 inch.

JAMES GLAISHER, F.R.S.

Variorum.

GARDENING .- The amateur gardener may profitably bear in mind that success in gardening is like success in life, inasmuch as the secret of success depends, in great measure, on attention to little things. We obtain our plants from all sorts of places-from rocky heights, from humid valleys, from snowy plains, and from warm water-courses-and yet we expect them all to thrive under nearly the same conditions within the boundaries of one garden. And the wonder is that many of them do thrive under conditions that appear so very different to those they were adapted for by Nature. But their adaptiveness is a limited quantity, and it is an important part of the business of the cultivator to discover the limits, so that he may not kill his pets by subjecting them to conditions at variance with their requirements. Two amateurs of hardy Ferns agreed to make an attempt to grow the true Maidenhair Fern in a London garden, and they both bought plants of the same trades-man for experiment. One planted his delicate pet in a nice snug corner of the rockery, and, having followed the teaching of a book as to the mode of planting, he waited and hoped for the best. The other followed the teaching of the book as regards the suitable soil

and so forth, but, having reflected on the frail constitution of the plant, he proceeded to evolve out of his consciousness conditions of which the other had not thought. He made a miniature cave with slabs of stone on edge, thus enclosing the delicate Fern in a kind of open stone box. As winter approached, he laid another slab over the box, thus making a close cave of it, the plant still obtaining sufficient light and air through the rough apertures where the fittings were imperfect. The plant so easily disposed of by No. 1 disappeared during the first winter, and was seen no more. The plant of No. 2 lived and grew, and became a grand specimen, and was displayed to visitors, living all alone, like a jolly hermit, in its substantial cave, through the large chinks of which it laughed at the frost and defied the winds; and when it spoke -as of course it often did-the subject of its discourse was the importance to the gardener of things that thoughtless people call "trifles." "Familiar Garden Flowers," by Shirley Hibberd.

MYRTUS PIMENTA, LIN. - This fine Spice tree grows at some leagues from the lagoon of Sante Comapan, on the detritus of volcanic eruptions in this district, which has its rainy and dry seasons.

The leaves resemble those of a Camellia, except that they are elongated; they give off a heavy aromatic persume when crushed in the hand. The tree is bertome when trushed in the hand. The free is 8—10 m, in height; as it grows isolated it forms a majestic pyramid; its bark peels of annually, like that of the Plane. The young bark is quite smooth, and of a greyish-white colour, so that the tree can be distinguished afar off in the forest. The flowers are white, like those of the Myrtle; the fruits constitute brown Pea-like bodies, which are sold in the shops under the name of "Jamaica Pimento." I can only recommend my readers not to he led by the size of the fruit when huying, as there exists in commerce Pimento of a larger size but much less value. Those rimento of a larger size but much less value. Those of our trees are smaller; they are gathered before complete maturity, after which they are carefully dried in the sun. Their scent is strong and powerful, but aromatic and agreeable, more noticeable in the valves (?) than in the seeds, Roesl, in "La Belgique Hotticole."

Enquiries.

"He that questioneth much shall learn much."-BACON.

WALNUTS.—I shall feel obliged if any reader can inform me of the best means of obtaining a large quantuy of seed Walnuts for planning on an estate of mine in Florida. I should want them specially selected from healthy trees this season, and of the fine paper-shell variety. Wm. Newton.

Answers to Correspondents.

APPLE TREES INJURED: IV. Gallop. We think the damage must have been done by frost. The fact of the fruit-spurs being more full of sap than the woodshoots accounts for their being the most injured.

ASPARACUS AND PEACH LEAVES: T. B. No Asparagus should be cut when the produce is of the size sent. Either the bed is exhausted by excessive cutting to too late a date, or the plants are too young, or the cultivation has not been understood. In respect to the Peach leaves, it is a very bad case of "cul," due to the presence of a fungus often described in these columns, for which there is no knowo cure. Cut the affected leaves clean away, carefully place them in a box or bag, and then as carefully burn them.

BIFRENARIA AURANTIACA: A. J. T. Grow it on a raft, with some peat and moss about its roots, and in a Cattleya-house temperature.

a Catterya-tionse temperature.

Brighton Flower Show: Exhibitor. The authorities have no doubt consulted their own—or, rather, the interests of the Society—as they are fully entitled to do; and if their regulations do not suit the convenience of exhibitors the latter can defend themselves by staying away. A society in debt cannot always consider the exhibitors only, though of course, as a matter of policy, they should do so as far as they can.

GUMMING IN CUCUMBERS: Market Gardener and Enquirer. This is a disease that has given much trouble for some years, and for which a practical remedy has not yet been found.

has not yet been found.

INSECTS: F. B. The insect which has eaten your Gardenia buds "in the same way that the Rose magnet destroys. Rose buds" (which is a state of things which I should hardly have expected from the insect sent), is a Brazilian species of grasshopper which has lately been imported into our greenhouses and hothouses, and done much mischief. A description and figure will appear shortly in our pages. I. O. W.—T. Worth. One of the species of Ottorhynchus. If you found it eating the top of a Dendrobium Wardianum you may take it for granted "it will do harm to the plants." That must be obvious,

LILY OF THE VALLEY: B. B. We cannot see that the flowers sent are different in any way from the ordinary type, of which they are by no means good examples, although it may be possible to see some slight variations in growing plants, as may also be observed in any other genera. Under good cultivation the same variety may be grown to treble the size of the specimen sent.

ANCHESTER BOTANICAL AND HORTICULTURAL SHOW.—In the report at p. 749 the 2d prize for eight stove and greenhouse plants in flower is stated to have been awarded to Lord Wilton, gr. Mr. Baillie, while it was really won by Ino. Rylands, Esc., whose gardener is Mr. George Smith, and not Mr. George Roberts, as inadvertently given in another paragraph. MANCHESTER

in was feath with the development of the design of the design of the design and t

Nepenthes Rafflesiana: H. H. G. It is the usual rule for this species to form two kinds of pitchers on the same plant.

ORCHIDS: Ireland & Thomson. A fine form of Cattleya Mossice, with good broad petals, the colour rich and pure, and the lip bright and showy.

PANSY: A. We do not see anything out of the common in your seedling.

Roses AT ShireCliffe Hall: Erratum, At p. 704, for "40" blooms on Magna Charta, read "80." THE LONDON PLANE: A. Decidedly not Platanus occidentalis, but the acerifolia variety of P. orientalis.

THUIA AUREA: An Old Subscriber. Our advice is to leave the plant alone till the end of July, and then to cut the shoots back as far as is desirable with a knife. On no account clip the bush with shears, unless you wish to utterly spoil it sa papearance.

THUIA LOBBIT: X. What is grown as this is generally either the true Thuia gigantea, or a variety—one of the many—of T. occidentalis. It would be best to do away with the name altogether, for, like Mrs. 'Arris, it is a myth.

WEEPING WILLOW: C. The species is of Chinese origin. The Babylonian Willow, so called, is probably Populus cuphratica.

COMMUNICATIONS RECEIVED.— J., H.— J., Wilson.— J. D. (many thanks).— R. and A., M.— H. E. W., R.— J. W., H. C.— J. W., H. C.— J. W., H. C.— W., W. H. C.— W., W. H. C.— W., W. H. C.— W., W. C.— W., W. C.— W., W. C.— W., P. M. C. C.— J. R.— C. K.— J. H., Janaica.— E. M., Löge.— Y. F. R.— E. W.— W. F.— W. C.— W., G.— H., W.— W.

Markets.

COVENT GARDEN, June 12.

TRADE improved. Large supplies cleared, with prices firmer. James Webber, Wholesale Apple Market.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

PLANTS IN POTS.—AVERAGE WIDLESALE PRICES.

4. Aralia Sieboldi, doz.12 0-40
Arborvitæ (golden), 60-18
per dozen. 40-12 0
Erdorous, 10-10 doz. 60-12
Egomias, per doz. 60-12
Copperus, per dozen. 40-12 0
Copperus, per dozen

FRUIT .- AVERAGE WHOLESALE PRICES

Apples, ½-sieve 3 of Figs, per dozen 4 of Grapes, per lb 2 of	5 0 5 8 0 5 5 0	s. d. s. d. Pine-apples Eng , lb. 20-30 — St. Michael's, each 20-50 Strawberries, per lb. 20-60 Peaches, per do2 40-120
Vacantara	A	ACR DREELS DRIVERS

	8 0 - St. Michael S, each 2 0 - S o
Grapes, per lb 2 o-	s o Strawberries, per lb. 2 o- 6 o
	4 o Pcaches, per doz 4 0-12 0
memmes, per emsett to o	4 O Transmiss, per done in 4 O am o
VUCETARIRE - A	VERAGE RETAIL PRICES.
VEGETABLES.—N	VERNUE MAINIL I MICES.
s. d. s	. d. 1 s. d. s. d.
Articbokes, Globe,	
per doz 3 o-	5 b Horse Radish, bund, 3 0- 4 c
Asparagus, English,	Lettuces, Cabbage,
per 100 4 0-	6 o per dozea 1 6
- Freuch, bund 2 6-	— Cos, each o 2
Beans, French, p. 100 1 6-	Miot, green, bunch o 6
Beet, per doz 1 o-	
Cabbages, per doz I o-	Onions, per bushel 6 o
Carrots, per bun o 4-	o 6 - Spring, per bun. o 6
Carrots, per buil o 4-	
- New French, per	Parsley, per buoch o 6
bunch 13-	Peas, English, quart 1 6
Cauliflowers, Eng-	Radishes, per dor, 1 6
lish, dozen 2 o-	3 o Rhubarb, per bund. o 4- o 6
Celery, per bundle 1 6-	2 6 Small salading, per
Cucumbers, each o 6-	
Endive, French, per	
dozen 2 o-	Tomatos, per lb 1 6
Garlic, per lb o 6-	Turnips, new, bun 1 3
POTATOS Kent Magnums	, 8os, per ton; do., Regents, 10os, to

A105.—Kent Magnums, 80s. per ton; do., Regents, 100s. to 120s.; Champioos, 70s. to 85s. New—Jersey K dneys, 8s. to 11s. per cwt.; Roued, 6s. to 8s.

SEEDS.

LONDON: June 11.—There was but a poor attendance on the seed market to-day, and very little business was done. For the time being there is no consunptive sowing demand, and as yet no speculative enquiry of importance has sprung up. New French Trifolium has now begun to offer. There is a moderate trade passing in Mustard and Rape seed. The sale for spring Tares continues. Bird seeds show no material alteration, John Saku & Sons, Seed Merchants, 37, Mark Lane, London, E.C.

CORN,

At Mark Lane, on Monday, there was only a moderate inquiry for Wheat. Good qualities of English were tarily steady in value, but secondary sorts met no attention. Imported Wheats mostly sustained the previous Monday's value, and Australian showed rather firmer prices. Flour met but a limited inquiry, and remained without quotable change in value. In Barley no change was made in quotations. Maize on the week was rather lower. Peas were written tr. lower. In Oats, common Russian were rather easier, but fine stont qualities rather dearer.—Wednesday's trade was very slow in every department. Wheat and Flour met very little inquiry, and prices remained nominally unchanged, but the tendency was against holders. Barley met less inquiry than recently, and Maize was rather in favour of buyers. Beans and Peas were quiet and unchanged. For common Cast the market continues flat, but for good qualities him.—Average prices of corn for the week ending June 7:—Wheat, 37s. Barley, 27s. 1st. (2018, 21s. 4st. 4st.; Barley, 28s. 2st.) cod.

The following prices have been obtained at market during the week:—Magnum Bonums, 70s. to 100s.; Regents, 6co. to 70s.; Champions, 20s. to 70s. per 10s. Maltas, 7s. to 7s. 6d, per owt.; new—Jerseys, 7s. to 13s. per ewt.; Lisbons, 7s. per ewt.—The imports into London last week consisted of 568 packages 294 baskets from St. Nazaire, 30 cases 10s to boxes Malta, 2 cases Gothenburg, 2164 packages Jersey, 285 cases Bordeaux, 54 packages Lisbon, 349 packages Valencia, and 27 bags from Eoulogne.

COALS.

The following are the prices current at market during the week:—East Wylam, 150; Broomhill West Hartley, 145; Walls End—Hetton, 165; 6d.; Hetton Lyons, 155; Lambon, 165; Pear, 155; Tees, 165, 6d.; East Hartlepool, 156, 9d.; South Hartlepool, 155, 3d.

Government Stock.—Consols closed on Monday at 99% to cos for delivery, and 994% to 100% for the account. Tuesday's prices were as on the previous day for delivery, and 69% to 100 for the account. The linal quotations of Wcdnesday were, 99% to 99% to 90% for delivery, and 99% to 99% for the account. The last quotations on Thursday were 99% to 99% for delivery, and as on the previous day for the account. These quotations are ex div.

EXCELSIOR LAWN MOWER.

Over 100,000 made and Sold. Over 100,000 made and sold.

Never Beaten in Competition. Every
Machine warranted to give satisfaction.

The Field of April 5, 1834, asys:—"We
know of none superior to
the EXCELSION actr
Says:—"It is light in
anythin to the same of th

CHADBORN & COLDWELL MFG. CO.
(T. CLARKE, Manager),
223, UPPER THAMES STREET, LONDON, E.C.

THOS. W. ROBINSON, DENNIS PARK IRONWORKS, STOURBRIDGE.

"Expansion Joint."



and Quickest

4-in Expansion Joint Hot-water Pines, 9 feet long, 4s. 3d. each; 4-in. Socket Hot-water Pipes, 9 feet long, 4s. 6d. each. Price List on application.

The Original and only Genuine Stevens' Trentham Rivetted Boiler.





HOT-WATER PIPES AND FITTINGS.
High Quality. Largest Stock in the Country. High Quality. Largest Stock in the Country.

-inch Pipes, 1s. 6d. per yard.

FRED. SILVESTER. Castle Hill Foundry, Newcastle,
Staffordshire. This Advertisement appears alternate weeks.

HOSE-HOSE-HOSE.

PATENT RED-RUBBER GARDEN HOSE.

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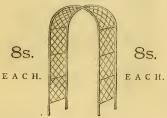


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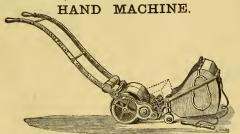
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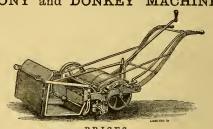
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NOTICE !— COMMITTELS: MEETINGS. Fruit and
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GENERAL MEETING for the Election of Fellows, &c., at
32 M., in the Gallery of the Conservatory, no TUESDAY

NEXT, June Zultt and YEGETABLE SHOW.

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JULY 2, 3, and 4. Schedules and particulars of
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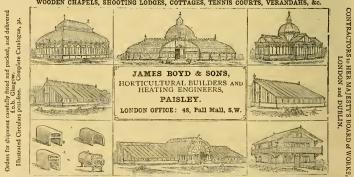


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THE

Gardeners' Chronicle.

SATURDAY, JUNE 21, 1884.

PETWORTH AND THE PERCIES.

THE compilation of an extended history of I the family of Percy would prove an elaborate work. Only a short account can be given here, having special reference to a few of the most prominent of the family, and to their visits to their southern residence at Petworth. The acquisition of this fine Sussex property dates from the Conquest, when "Alsgernon Percy, so called from being heavily whiskered, obtained a grant of 10,000 acres of land here, after Hastings, and resided in the park, as his heirs did after him, for about 300 years. The northern name of Northumberland was first bestowed on the Percies in 1377, when the father of Hotspur was created earl of that county. Till then they had been, so far as their title was concerned, a Sussex family-Barons of Petworth.

In this somewhat gossipping chronicle we have now to relate that the Baron of Petworth of his day fought at Lewes on the king's side, and was taken prisoner by De Montfort. His successor, the fifth lord, won distinction both as a statesman and a soldier, and his seal, with the lion rampant and his motto "Esperance," was attached in the year 1300 to the letter to Pope Boniface VIII. which declared the independence of the Crown of England. The same lion rampant was conspicuous in most of the battles of that period, including Bannockburn. A distinguished crusader, William Percy, must be mentioned as having first adopted the family badge of the crescent, conspicuous at Alnwick, and still the sign of the "Halfmoon Inn," the principal inn of Petworth. His banner, says a

"Swept the shores of Judah's seas, And waved in gales of Galilee.

Henry Percy's lion rampant, also prominent in tented fields, gave its name to the "Blue Lion" of Petworth, and a rampant lion carved in store lords it on a parapet of Sion House, and on the top of the "Tenantry Column" at Alnwick. The Percies probably always had a residence at Petworth, the original dwelling being a stronghold of the usual type; but castle building, without royal licence, was prohibited in the reign of Henry II., and the fifth lord was constrained to seek the necessary licence "to fortify and krenallate with a wall of stone and lime his manors of Spofford and Lekynfield, in the county of York, and Petworth, in the county of Sussex." The fortified residence at the latter place stood on the hill in the park, and some old Chestnut trees in front of the cricket ground mark its site. Henry, the fifth lord, died in 1315.

The great achievement of the sixth lord was the victory at Nevill's Cross, where he commanded the first division of the English Army, ronted the Scots, and captured their king. In 1324 Edward II., who gave permission to "krenallate" the dwelling-house, arrived at Petworth from Horsham on September 6, taking Newbridge, in the parish of Pulborough,

in his way. The retinue of a king at that time has been compared to the tail of a comet for length, and the household charges at Petworth on the following day reached the sum of £11 2s. 3d. The king was fond of fruit, and accordingly the rector of Petworth presented him with seven score Pears. William de la Zouche, ancestor of Lord de la Zouche, of Parham Park-famous for its heronry-sent him four score and sixteen nuts of St. Philibert, twenty-eight flagons of wine grown at Chiltington, some beer, two carcases of oxen, four swans, and six herons. On Friday there was a fish dinner, and the tenant and neighbours sent in eels, trout-not then in season, and one only sent -pike, bream, and mullets-the grey mullets of the Arun. The king gave Nicholas, the harper, 20s. that day, Nicholas being a musician who came in the suite of the Lady Camoys. On the Saturday the king departed for Hamp-

We have now to relate that in 1330 a proctor of the Pope came to Petworth from Slindon, after endeavouring to serve a papal writ on the Archbishop of Canterbury, who had a manor there. Six gallons of cold water had been poured upon him on his producing the writ, and he had ridden over the hills with his party, hunted by the Archbishop's retainers with whips and halloos and vexatious blowing of horns. At Petworth his reception was not a gracious one, and he was imprisoned for three days.

The sixth lord died in 1352. Henry, the seventh lord, fought at Crecy, and was the custodian of David Bruce, and a statesman of

mark. He died in 1368.

With the eighth Lord of Petworth, father of Hotspur, a long era of misfortune commenced, dating partly from the trial of Wycliffe, when, the Londoners siding on that occasion with their Bishop, Northumberland House attacked and entered by the mob. The Duke of Lancaster, the Earl, and John de Ypres, were dining at the time at Ypres Inn, when a messenger brought the news that the Londoners were upon them, the Duke "being then at his oysters." They ran for their lives, reached the river, and arrived by boat at Kingston, the Duke with broken shins, having tumbled over a form, as history relates, and "broken both his shins for haste." Northumberland soon after resigned the office of Earl Marshall. The part he played at Bosworth, and his share in deposing Richard II., are notorious in history, and in Shakespeare's Richard II.; and we shall only say further of this very turbulent gentleman, that he rebelled for the third and last time after the Battle of Shrewsbury, and shortly afterwards lost his head.

One of the most interesting memorials at Petworth is the sword of Hotspur, which Shakespeare makes the reckless hero draw at Shrewsbury, exclaiming:—

"Here draw I A sword whose temper I intend to stain With the best blood that I can meet withal, In the adventure of this perilous day. Now Biperance! Percy, and set on: Sound all the lofty instruments of war; And by that music let us all embrace: For (Heav'n to earth) some of us never shall A second time do such a contresic."

After Hotspur's death, in his forty-first year, his wife, the gentle Kate, came to Petworth, married Lord Camoys, and was buried in the neighbourhood at Trotten Church, with her second husband. Hotspur's son, the second Earl, restored to his honours by Henry V., became the very popular hero of Chevy Chase, and was twice killed, once in poetry and once in prose. On the first occasion, Sir Hugh Montgomery, a Scottish knight:—

"Well mounted on a gallant steed, Ran fiercely through the fight; And through Earl Percy's body Thrust his hateful spear. With such a vehement force and might He did his body gore, The staff ran through the other side A large cloth yard and more."

In point of fact the second earl fell fighting on the Lancastrian side at the battle of St. Albans, 1455. Thomas, a son of his, born at Leconfield, was created first Lord Egremont and fell at Northampton in 1460. The eldest son Henry, who was born at Leconfield, was Queen Margaret's Captain-General in the North, commanded at Towton, and there fell during a slaughter unequalled in the annals of our civil wars, in 1461.

The five last-mentioned Percies having fallen in battle, or on the scaffold, the next earl was murdered in a popular uprising; the next was the most conspicuous of the nobles at the splendid court of Henry VIII., and the author of *The Northumberland Household Book*, entitled "The Regulations and Establishment of the Household of Henry Algernon Percy, the Fifth Earl of Northumberland, at his Castles of Wresil and Lekinfield (Leconfield) in Yorkshire: begun A.D. 1512."

He died in 1527. There is nothing to say of the sixth earl, except that he died of a broken heart on the execution of his brother for treason. In 1552, King Edward VI. came to Petworth: its owner had not conformed to the new faith, and his Sussex manor was in the hands of the crown. The king entered the county on July 21, coming from Guildford and passing from Petworth to Cowdray and Halmaker. were 4000 persons in his train, "enough," says a spectator of the pageant, "to eat up the country, especially as there was little meadow nor hay," the district being densely wooded. The king entered Petworth with his guards amid a stirring blast of trumpets; his yeomen grooms and pages wore the well-known scarlet livery, and carried their halberts, bows, and iavelins.

Edward remained at Petworth fournights, and, writing to his favourite companion—his whipping boy, Barnaby Fitzpatrick, then in France—he says:—"Whereas you have been occupied in killing your enemies, in long marchings, in pained journeys, in extreme heat, in sore skirmishings, and divers assaults, we have been killing of wild bestes, in pleasant journeys, in good fare, in viewing of fair countries, and rather have sought how to fortify our own (Portsmouth) than to spoil another man's." The sympathetic youth who wrote this letter died within a year of his tour in Sussex, having kept up his correspondence with Fitzpatrick to the last.

On the accession of Queen Mary, the seventh lord of Petworth, being a Catholic like his pre-decessors, was created Baron Percy of Cockermouth and Petworth, and seventh earl of Northumberland by re-creation. In the Protestant reign of Queen Elizabeth the tables turned upon the seventh lord, and once more the Percy of the period was beheaded, leaving behind his brother the eighth lord. Another royal visit to Petworth was contemplated in 1583, when the Queen reached Cowdray in the immediate neighbourhood, and would have come on to Petworth but for a letter from its owner, conveying to Walsingham various excuses, such as want of time for the preparations, my lady's health, and the shocking state of the roads. Some time after this he fell under suspicion as a Catholic, and was commanded by the Council "to keep his house." Having half-a-dozen houses he selected one at Blackfriars, where he remained unmolested, riding frequently down to Petworth. At that time the ancient castle in the park was still standing, but the site of the family residence was the same as at present. The wide space in front was laid out with straight gravel-walks, low walls, terraces, and parterres, planted with clipped shrubs.

site of the stables, which, according to Fuller, were the "best of any subjects in Christendom," is now covered by the lake.

The Earl was one of the greatest of the Elizabethan builders, and such a man should have died at home in the midst of his improvements, but unfortunately he brought on himself a sadder fate by tampering in futile Catholic plots. He was not a very dangerous conspirator, but a certain Charles Paget was his companion, and unfortunately for the Earl this man-crossing the Channel, and landing on the coast of Sussex -was conducted to Petworth by Shelley of Michelgrove. Treasonable conversations followed, and were duly reported to Burleigh by a spy, a pretented priest, who joined the gentlemen over their wine. One night Percy and his friends were all arrested, and the unfortunate Earl found himself caged in the Tower, with his friend Shelley in a neighbouring dungeon. There are two stories as to the prisoner's death. According to the official account, he shot himself with a dag, or pistol; the other statement, which was more generally believed, was that he died of the plunge of a knife. He was found in bed undressed, with his clothes in perfect order, and the bed quilt decently drawn about him.

We must here pause to mention, with due praise, Henry, ninth earl and twenty-first baron of his line, who, to catalogue his merits briefly, was a gallant soldier, whom Raleigh himself respected, a man of letters, and the patron and warm friend of all true scholars. Spenser admired him, and sent him a sonnet and a copy of his Fairy Queen. Bacon praised him in a letter still extant. Sion House, which had been previously rented off the Crown, was settled on him for his distinguished public services, and here and at Petworth the accomplished peer, clever, popular, and wealthy, trained his plants and sported with his children. There were four children, all destined to be famous-Algernon, afterwards tenth earl, and one of the heroes of the Civil War; Henry, Lord Percy of Alnwick, the favourite cavalier of Queen Maria Henriette; Lucy, Countess of Carlisle, the friend of Stratford and of Pyne, and the subject of a thousand rapturous songs; and Dorothy, the mother of Algernon Sydney.

Like his predecessors, the earl was a Papist, and on the occasion of the Gunpowder Plot he fell under suspicion. Guy Fawkes had ridden down to Sion House, it was said, to report the official searching of the cellars beneath the Houses of Parliament. When accused, the earl pleaded his secluded habits, his Sussex life, love of children, gardening, and books; but in spite of those pleas he was committed to the Tower, where several of his predecessors had been "done to death" privately, or had passed to the block through its Byeward Gate. The Beauchamp and Bloody Towers in the fortress were dark with traditions of the family, which in this short narrative have not been noticed.

The earl's sentence was a harsh one-imprisonment for life. He resided in the Martin Tower, on the north-east angle of the Ballium Wall, where his friend, the astronomer Heriot, shared his lodgings, while Robert Haes and Walter Warner, and a host of scholars and men of science, were his constant visitors. Happily the restraint of the Martin Tower improved the Earl's character by enlarging his knowledge, diminishing his pride, and softening his heart. His wife had not been able to reside with him at Petworth through "incompatibility of temper;" she came to him in prison, and found him a very good husband, far better in the shadow of adversity than he had been in the sunshine of prosperity. They became, with their offspring, a united and a happy family, their two pretty children were the spoilt favourites of all the inmates of the Tower who had access to them, and as they grew up the Earl hired the adjoining Brick Tower of

the Master of the Ordnance, as a residence for Algernon. In due time they fell in love—Algernon with a Cecil, and Lucy with a Hay, the future Earl of Carlisle, and the prisoner, though softened by his situation, objected to both marriages. "The blood of Percy," he said, "would not mix with the blood of Cecil if you poured them into a ditch," and he sent word to Hay that his daughter should never get a penny from his purse if she married without her father's leave. The young people, however, married immediately. The King honoured their nuptials with his presence, and his bridal present was a promise that the Earl should be liberated.

After fifteen years imprisonment he was "fetched away" in a coach and six, when he immediately retired to Petworth, and lived once more the old Sussex life with his friend Heriot, corresponding with Kepler on the laws of vision, on the sun spots and the satellites of Jupiter. He died and was buried at Petworth in 1632. An appropriate epitaph for his monment would be—"Student, sorcerer, swordsman, scholar; given alike to play and pleasure; prompt and saucy with blade and tongue; prompt and saucy with growing to the still haunts the Martin Tower. Heriot's sundial is still on the wall, and the terrace connecting the Earl's lodging with the Brick Tower and Constable's Tower is still called the Earl of Northumberland's Walk. H. E.

(To be continued.)



A NEW FRITILLARY AND IRIS FROM TROY.

Amongst the discoveries which have been made in connection with the expedition to Troy of Dr. Schliemann is a new species of Fritillary, of which specimens have just been distributed by the collector Sintenis, under the name of Fritillaria Schliemanni, Ascherson and Sintenis. It belongs to the small group with an undivided style, and of the species in cultivation most resembles F. tullpifolia and dasyphylla. It has six to eight alternate leaves, the lower oblong-lanceolate and obtuse, the upper lanceolate and acute, a one-headed stem under a foot long, with a single drooping flower, a yellowish-green perianth, without any distinct tessellation; stameas not more than half as long as the perianth, and a clavate ovary with six acutely-angled ribs. A fine new Iris has also been found. It is closely allied to I, spuria and Guldenstaeditana, and has been named Iris Kerneriana. T. G. E.

MULE PINKS.

THE numerous groups of these useful plants do not receive the attention they deserve, for they are rarely grown. They are wonderfully free of bloom, very showy in the open border, and most useful for cutting from. How and when the mule Pinks first originated is perhaps not exactly known, possibly the perpetual Carnation and Sweet William have lent their influence in the origination of this strain. The new varieties which occasionally appear are of Continental origin; one of the best though not the newest, for it first put an appearance some twentyyears ago, is Dianthus hybridus multiflorus. still grown, and it produces its medium-sized, well formed rosy-pink flowers with great profusion, doing well in the open border, and being also very use-When planted out it forms a dense ful in pots. compact tuft of dark green herbage, attaining a height of 6 inches or so. From amongst this rise up numerous flower-stems, sturdy and freely branched, bearing a profusion of sweet-scented flowers, varying somewhat in shade according to their age, and the act of cutting appears to induce the plant to throw up successional flower-stems. There is this decided gain in this variety, that it is decidedly more perennial in habit than any which preceded it. From this, there is every reason to believe, have proceeded other varieties, among them one named Napoleon III. This is a late introduction of exceptional merit, and it well deserves a place in every garden suited to it, for it is invaluable both for border use and for cultivation in pots, having a dwarf, bushy habit, being very freeflowering, and producing large quantities of dazzling double crimson flowers. Mr. Roberts is growing it somewhat largely at Gunnersbury Park for cutting purposes, and praises it very highly. It was shown in two or three of the collections of hardy herbaceous plants at Manchester, but not in the best condition, having, apparently, been forced into bloom. Another hybrid mule Pink is Dianthus Atkinsoni, said to be one of the oldest, but has remained unnoticed, and therefore scarce for a long time; in colour it is a vivid carmine-crimson, and very striking, with larger flowers than is usually seen in this There are several varieties of these mule Pinks : the two named, with a very good white, are among the best; and our object in calling attention to them is to indicate a class of plants well deserving of a more extended cultivation.

MR, B. S. WILLIAMS' NURSERY.

CALL when we will at the Victoria Nursery, we are certain to find some good plants in bloom to reward us for our trouble, and should our genial friend, the proprietor, be at home, so much the more does a draw on his inexhaustible stock of Orchid lore enhance the pleasure of a visit, The Orchid trade with Mr. Williams has always been a large one, but even his great resources have to be continually increased, to keep pace with the demand for these lovely and interesting plants. The latest addition to the "Orchid area" is the long span-roofed structure formerly devoted to hard-wooded greenhouse plants, which has been converted ioto a Cattleyahouse, and well the plants seem to have taken to their new domicile. This, like all Mr. Williams' Orchid-honses, has the shading fixed well above the glass, which, even in the hottest weather, keeps the houses "nice and cool." The shading material used, too, also demands another word of recommendation, so well does it answer the duty required of it, to break the glare of the sun's rays while admitting plenty of light. Being made of cotton, too, it has the further merit of lasting longer than other shadings of a textile character to recommend it.

In the Cattleya-houses at the end of last week there were some fine types of C. Mossiæ in flower, and enough of them to make any house gay. Varieties of C. Mendelii were also plentiful, and, as usual, well varied in colour, the darkest of all being of a particularly rich deep shade. C. Warnerii and grand C. gigas also claim notice, and specially so does a plant of the true Lælia Brysiana, a showy Brazilian species often confounded with L. purpurata, from which it is distinct both in the shape and colour of its flowers. Cattleya Mossiæ kermesina, a distinct and pretty variety, is noticeable from the presence of so little of the yellow colouring in the throat, and the rich mauve colour of the sepals and petals. One of the forms of C. gigas—not an over-free-flowering species, by the way—has a very rich, broad, open lip, reminding one much of that of Sobralia macrantha. Near by the latter was C. Mossiæ Hardyana, the curiously dappled petals of which render it distinct and attractive amongst others.

In the Vanda-house, the inmates of which seldom look better than at this season, are still some fine fresh flowering plants of the useful Calanthe veratrifolia, some of which have been in bloom since February last. The rare Anguloa Ruckeri sanguinea is also noted in flower, and attracts attention by reason of its peculiar colour—a shade of red not common among Orchids—and strong seent. A good specimen of Cypripedium Stonei, several examples of Vanda teres, and the scarce Aérides Larpentæ are all in flower; and on a strong plant of Vanda Batemanni a grand spike is approaching the flowering stage.

In the cool houses the Masdevallias provide the richest display of bright colours, such species as amabilis, Harryana, ignea, and Veitchii, in numbers, contributing most to the show at this season. The Odontoglossums, as usual, make a strong claim upon our "bump of admiration" as fine spikes here and there of O. crispum, O. cordatum, O. citrosmum, O. Pescatorei, in good varieties, come under review.

The New Holland plants having been ousted from their former abode by the Orchids, Mr. Williams is building a new house for them—a long, wide, span-roofed structure, in two divisions, with every modern improvement that experience warrants the adoption of, and which when completed will be one of the features of the cursery. We noted also that the old Camellia-house at the bottom of the nursery has been adapted for the cultivation of greenhouse Rhododendrons, a class of handsome free-flowering evergreen shrubs which are rapidly becoming popular, thanks to the beautiful acvelties that hybridists have lately put into commerce. The house is filled with a thritty lot of plants, with not a few good "specimens" among

All the houses now are in their summer dress, and the clean, thrifty character of the occupants claims a passing word of praise. In the Palm-house Mr. Williams directed our attention to the merits of Phoenix rupicola, a handsome Palm, which grows more slowly than P. reclinata, and is therefore better adapted for ordinary sized houses than a plant that soon grows "too big for the place." Asplenium candatum, sometimes called A. longissimum, which resembles a Goniophlebium in habit, with fronds 4 feet long, and proliferous at the tips, was pointed out as "a grand basket Fern." The scarce old Brainea insignis, the young fronds of which are of a reddishbronze colour; a fine specimen of Adiantum Williamsii, showing its value as an exhibition plant; the neat little Adiantum mundulum, and the miniature growing Lygodium microphyllum, differing so much in its size from the scandens section, are also pointed out in the fernery as plants worth notice. We have several times called attention to Amaryllis Mrs. Garfield, a very pretty and free flowering variety, introduced by Mr. Williams, and have now to mention another acquisition in the same way. This is Amaryllis Mrs. William Lee, which like the first - named belongs to the reticulata type, and is a genuine "gardeners' plant," insomuch that it seems never to have done flowering or to be out of season. It is evergreen, remarkably freeflowering, will stand almost any amount of heat, and in colour is pink with deep rose-coloured venation.

HERBACEOUS PÆONIES.

Mr. T. S. WARE's remarkable groups of hardy flowers and the marvellous display of Pyrethrums set up by Messrs. Kelway & Son, possessed such an absorbing interest for visitors at the meeting of the Royal Horticultural Society on the 10th inst., that it is not to be wondered at that the blossoms of herbaceous Pæonias that were shown by Messrs. Kelway, Messrs. Hooper & Co., and others, received less attention than they deserved. It is wonderful with what rapidity new varieties are on the increase. Those who think that the crimson flowered forms we are accustomed to see in borders are the sole representatives of a group, will be surprised to learn that Messrs, Kelway & Son this season catalogue 250 varieties, and of these sixty-three are new single and forty-one new double varieties of their own raising, which are being sent out for the first time this year. This rate of production is somewhat astounding, and is calculated to give something like a scare to oldfashioned gardeners, who can remember that fifty years or so ago the number of species and varieties did not much exceed twenty. The shades of colour seen in the new varieties show much variety. Some are blood-red, some purple, some rose, and then down to white there are many soft tints, such as pink, flesh, satiny-white, salmon, &c. — all very pleasing indeed, and forming an admirable contrast to the varieties with rich coloured flowers.

Among the new double varieties shown by Messrs. Kelway & Son were Adelaide, pure white—very fine; Bacelus, rosy-purple; Frigidus, rose and white; Hadraoum, satiny-rose; Macella, pink, with yellow centre; and Papinus, crimson-purple. In Messrs. Hooper & Co.'s stand were some very fine forms, but it was difficult to obtain the names, which was a matter for regret. How extensively Messrs. Kelway & Son grow seedlings may be imagined from the fact that they have this season planted out some 2000 to 3000, which are in bloom, or will flower this year. This firm appear to go systematically to work, as they carefully fertilise the finest varieties. But a considerable amount of patience is needed, for the seed does not germinate under twelve months, and then some three or four years pass before the seedlings

flower and their characters can be ascertained. The patience shown by the Langport firm, and the amount of labour they have expended on the improvement of this fine old-fashioned flower, have been rewarded by the production of varieties worthy of extended cultivation. But in how few gardens are they seen.

Now that hardy plants are receiving a greater share of attention than they did a few years ago, there is a chance of these herbaceous Pæonies rising to a higher level of popularity than they have yet reached. And it is scarcely necessary to add that all that is required to grow them well is a rich deep loam, some shade, and plenty of space in which to develope themselves, and then the plants become objects of conspicuous beauty. A stiff soil suits them better than a light one, and if the clumps are covered over with some mulching in October or November, when the foliage has died down, they will be greatly benefited. May frosts are apt to injure the buds of the Pæonies, and it is a good plan to slightly syringe the plants when frost is deposited on them, taking care to do so before the morning sun shines directly upon the foliage, R. D.

NOTES BY THE WAY.

SOME LEIGESTRESHIRE GARDENS. — There are three of these that appear to me to deserve recognition in the pages of the Gardeners' Chronicle. They are not especially noteworthy perhaps as examples of horticultural skill, yet interesting and instructive nevertheless, as the means of education for the young, quiet contemplation for those who weary of the turmoil of busy life, and a solace and delightful recreation for the aged. Being in the neighbourhood lately, I visited each of these gardens. The first is attached to the Desford Industrial School; the second surrounds the monastery of St. Bernard; the last consists of the allotments adjoining Wyggeston's Hospital at Leicester.

DESFORD INDUSTRIAL SCHOOL. - About five years ago the Leicester School Board determined to provide an asylum for the waifs and straysi.e., the truants—of their busy and prosperous town. The school buildings consist of an extensive and picturesque group of rooms, workshops, farm-stead, &c., standing on a breezy hill half a mile from Desford station. These are surrounded by 60 acres of pasture, arable, and garden ground, the whole of which is cultivated by the boy inmates (nearly 221), under the control and guidance of well qualified labour masters. Every one of these, with the exception of a few employed in the engine-room, must dig, or beg and be ashamed. But little or no compulsion is needed, pure, fresh air, healthy exercise, and a sense of freedom in the open-air workshop, engenders a feeling of self respect and trustworthiness which breeds contentment and promises well for the future. The boys work in relays of twenty. The gardens consists of 26 acres planted with the usual crops, interspersed with rows of standard Apples and Plums, and large breadths of bush fruits and Strawberries. Not the least advantage to the great midland town, beyond an ultimate saving of rates, must be the largely increased supply of freshly gathered vegetables and fruit. It is the intention, moreover, to grow flowers also of the commoner kinds, for sale. On asking the intelligent labour-master why such prominence was given to gardening in the industrial programme of the school, he replied, "A man with some knowledge of gardening never need be idle : there is always something for him to do, especially if he happened to have an allotment or garden of his In Leicester and Nottingham the greater number of workmen have gardens, and then if he emigrated, as many of the inmates do after leaving, there was a trade in their hands at once. A good many people have gardens, and don't know how to till them." Of course in so large an establishment there must be the strictest regard for order and discipline. Every clothing, his towels, brushes, &c., and especially of whatever tools or implements he may use in the course of the day. course of the day. "A place for everything and everything in its place," is a motto not only hung upon the walls of the school-room, but enforced upon the farm and garden. I observed some small plots for flowers which were managed entirely by the boys themselves, small prizes being

given for the best planted and most tidily kept plots. It would be well, however, to put at the disposal of the boys portions of 6 poles or more each, allowing the boys the entire control of them, and letting them take the whole of the profits. The tenancy of such plots should be given to the most industrious and intelligent of the boys, as a kind of reward or prize. The land consists of a heavy loam with clay subsoil, but it appears to be under thorough cultivation; and altogether, with school, workships, farm, and gardens, this noble institution reflects the highest credit upon all concerned, both the School Board which initiated it, and those more immediately associated with its control and management.

THE MONASTERY GARDENS, St. BERNARD .-Charnwood Forest reminds one in its ancient desolation, its granite tors, its bleak moorland and subalpine vegetation, of Dartmoor. It lacks the Heather, however, which clothes the moorland in late summer with purple robes. One can imagine, when glancing round here and there on the apparently unreclaimable soil, what sort of a land it was ere those sturdy selfdenying toilers, the monks of St. Bernard, snatched acre by acre from the desolation, struggled, unmurmuring, stone-laden, up the rugged slopes, and piled their burdens in long straight lines of partition walls. Two hundred acres have thus been saved. The grave and venerable men who did this useful work have long since gone to their rest, within the Vew-enclosed graveyard, but some, at least, of their works remain. A portion of the desert "blossoms as a Rose." As we approach the monastery five monks proceed in single file to their afternoon labours in yonder Wheat field. I see them now bending at the hoe in dignified silencenot a voice seems to break the solemnity of a fine summer afternoon, not a gesture nor a glance escapes the toilers as the lark flutters along the springing corn and mounts in the blue lift above them, filling the air with music. Round one of the lichen-stained tors the brothers have planted a series of small gardens enclosed by Yew, Cypress, and Laurel hedges, and on the rugged central tor. with its green-grey mosses-Nature piled in picturesque confusion-stands the emblem of the Christian faith. The rocky ledges and crevices around the main mass are tastefully, because naturally, planted with Cupressus, Irish Yew, and Bay trees. A roughly hewa stone path leads to the plateau on which the Cross stands.

This part of the garden is in the highest degree impressive. It is known as Mount Calvary. Beyond the Cross, and here and there under a dome of leaves a statue of the Virgin, there is nothing to remind one of the presence of a monastery—no gaudy colour or gilding or tinsel: the garden is a series of quaint and sombre yet graceful vignettes. Here is a brother pulling some ecormous Leeks for the mid-day potage; then another clipping a Vew hedge. Old-fashioned flowers border the stone paved paths, for the most part sombre hued. Only in one soot was there a patch of brilliant colour, Tulips, Hyacinths, and Natcissus. But as I endeavoured to initiate a conversation upon the plants in his little greechouse—the only one, by the way, that was to be seen—he gravely shook his head. Speech to the visitor is forbidden except through the authorised conductor.

The neighbourhood of Whitnick and Coalville is the scene of thriving collieries. It was pleasant to see what capital gardens some of the colliers had, and several of them well furnished greenhouses. Eleven acres of rough forest land had been let out in allottments at the modest reot of £2 per acre after the first three years. During the reclamation no rent was charged.

THE HOSPITAL GARDEN.—About 300 years ago a rich brewer, one William Wyggeston, bequeathed part of his large fortune—for even then brewers made fortunes—for the endowment of a hospital for decayed tradesmen or their widows. The funds, however, got into wrong hands, as was usual with endowments for charitable purposes, educational or otherwise. Radical Leicester, however, insisted on its rights, and sufficient has been saved from the week to build and endow a most successful school, of which the town may well be proud. Another portion of the salvage has been applied in accordance with the benevulent donor's wishes in founding a harbour of refuge for the aged townsfolk aforesaid. It was a happy thought to provide a garden for each inmate. There are twelve men and twelve women in all, and each is

allowed a plot of land 8 poles in extent. They are all, with the exception of a blind inmate and a very old person, cultivated by the tenants themselves, and every one has a small plot for flowers and Strawberries. One old man, whom I remember as a market gardener at Leicester forty years ago, is still as enthusiastic a florist as ever. There are few occupations of which it can be said that one never tires; music is one, and anglers say their recreation is another; but surely gardening may claim pre-eminence in this respect. This eighty-four-year-old gardener watches his opening seedlings, principally Paosies, Polyan-thuses, and Auriculas—though he is proud of his seed ling Potatos also-with as much keen interest and delight as ever, and he adds to his modest luxuries by the sale of them. The gardens, therefore, are a source of profit as well as of quiet, healthy recreation. When one considers that the average age of these fourand-twenty gardeners is something over seventy-five. there is a strong testimony to the longevity of the frateroity. T. W., Harrow.

STREPTOSOLEN JAMESONI.

THIS is a showy greenhouse plant, native of New Grenada, and introduced as long ago as 1846. of shrubby habit, with rugose ovate leaves and terminal heads of showy orange-coloured tubular flowers, whose general appearance may be gleaned from our illustration (fig. 147). It was formerly called Browallia Jamesoni, and under that name was figured and described in the Botanical Magazine, t. 4605, but it differs from Browallia in the inflorescence and the position of the tube of the corolla. The plant had very much gone out of cultivation, if, indeed, it had not been lost altogether, and we are indebted for its reintroduction to M. Aodré. Mr. Cannell exhibited it in flower at a recent meeting of the Floral Committee, where its free blooming habit and bright pleasing colour attracted much notice from plant growers generally.

VEGETABLE PRODUCTS OF LOANDA.

CONSUL COHEN, reporting on the products of Loanda, states that the cultivation-or, more correctly, the collection-of ground-nuts (Arachis hypogea), which had for a few years back dwindled down to a fraction, has again revived, and might, if properly attended to, form one of the most valuable staples of the colony, notwithstanding its very inferior quality when compared to the produce of other countries. The reason is obvious. It can hardly be said that this valuable plant is cultivated in this colony, except in some very rare and few localities. It is merely collected from the wild plant by women and children. The plant, never improved by careful cultivation, has never yielded good nuts, which would certainly be the case in the singularly rich soil of this country if it were carefully planted from selected forms. The natives of the interior, from their habits of iodolence and indifference, only cultivate the Mandioca plant and the Sugar-cane, but generally to supply their immediate wants. Many important and extensive plantations have been made of the Sugarcane, but almost exclusively for the manufacture and distillation of rum, which is preferred by the natives, and commands a higher price than the spirit usually imported from Hamburgh under the name of white rum.

The manufacture of sugar in this colony has never been thought of, notwithstanding the facilities for cultivation of the cane, and the immense interest that would certainly be derived from an outlay of capital for that purpose.

The palm oil, which has now become one of the most important staples of the colony, is collected from the fruit or kernel of the Palm (Eleis guinecasis), which grows wild throughout this province. Notwithstanding the many applications, and the utility of its production, it is never cultivated by the natives; they simply collect what the wild plant yields, and never for a moment think of henefiting the plant or tree. The yield in itself is enormous; each bunch, or spadix, will yield from 500 to 1000 kernels [fruits], or "dendems," as the natives call them. Theo, instead of improving this plant, the natives destroy it by extracting from the tree the juice or sap, of which they manufacture one of their favourite drinks.

The Caoutchouc, or Indiarubber, grows wild and



FIG. 147.—STREPTOSOLEN JAMESONI: FLOWERS BRIGHT ORANGE. (SEE P. 796.)

in abundance throughout the interior. If it were properly or prudently attended to, the produce of rubber would in a very few years be immense; but the natives have in many places reacted the fable of the goose with the golden egg, by destroying the tree in their greed of obtaining a larger supply of liquid, which has almost exterminated the tree in many places.

Cotton has not attained the cultivation or attention that it was anticipated and hoped it would receive; but it has been cultivated almost exclusively by Europeans who introduced it, which accounts for its having already supplanted the ground-outs in value exported, and would become still more important and valuable if the pickers were taught to collect with more care and attention to cleanliness, which would greatly enhance its value in the European market.

Coffee continues to be the grand staple of the colony, and would certainly increase in value if the Coffee of certain districts were fairly and impartially compared with the best Coffee in the European markets; but, unfortunately for the interests of the colony, the commercial body—or, rather, the metropolitan or home Government—has not taken any real interest in the matter, and never even thought of having it presented or compared at the great Coffee fair held last year. While Coffee from every part of the world was examined, compared, and tasted, not even a sample was shown, or a word said about the Coffee of Angola. Some districts of this province produce a very superior quality, which commands preference in a general market.

Another article that has but very recently been brought to the market with a promising future is the Tobacco of this colony. It has been known for many

years growing wild in the interior, and used only as snuff by the natives; but in 1877 an active and enterprising merchant of this place, attracted by the superior quality of the leaf, established a manufactory of cigars and smoking tobacco in this city, and, owing alone to his untiring activity, wading through all impediments and endless obstructions, has succeeded in improving the natural article, and produced a smoking Tobacco which has become very popular throughout the province, selling at about 2:. 4d. Per Ib., besides cigars and cigarettes. There are four distinct qualities of Tobacco in the province. The first quality in every respect is the Ambacca, being equal, If not superior, to the Havanah, especially for cigars, the leaf being very large and very fine. It is highly aromatic and mild, never causing salivation. When collected with more care, and better known in the manufacturing world, it will be much sought after.

The Dande, the second quality, much resembles the Virginia, and in many samples is more aromatic. The Quanza, or third quality, closely resembles the Turkish tobacco, lightly aromatic, and at the same time very mild, and therefore well adapted for cigar-Then the Congo, or fourth quality, is a mixture of two qualities; one very similar to good Kentucky, and the other the Dutch tobacco; but as it comes mostly from the interior, and is conducted with very little care or attention, it is not improved by the handling it now gets.

The natives smoke the leaves of a plant they call Liamba (Cannabis sativa). It is highly narcotic and stupefying, the inveterate smoker becoming idiotic and useless in a very few years. Its action is much more violent than that of Opium. Many Europeans have been addicted to its use, attracted by its stimulating or inebriating qualities.



THE STRAWBERRY CROP.

ITS COMPOSITION AND REQUIREMENTS.

THE Strawberry ranks as an exhausting crop, because it ordinarily requires considerable mulching and high-manuring to make it successful. This highmanuring is necessary partly because the plants, in order to make their culture remunerative, must grow rapidly at the fruiting season, and must therefore be plentifully fed with those substances which agricultural chemistry has of late years made so prominent in the minds of intelligent farmers-namely, nitrogen, potash, phosphoric acid, and lime.

In an analysis of the Strawberry Pierre found that 100 lb. of ripe fruit would yield 4.38 lb. of ash, and on submitting this ash to further chemical analysis he obtained the following data :-

Comfosition of the Ash of Strawberry Fruit.

							P	er ceot.
Potash								40.3
Soda								1.8
Lime					٠			16.7
Magnes	ia							1.5
Oxide o								7.8
Phosphi	oric a	cid						11.1
Silica								3.1
Sulphui	ic ac	id, car	bonic .	acid,	and chi	orine		17.7
							_	

This investigation by Isidore Pierre was made in 1862 at Caen, in France, with the variety known as Comte de Paris, and is described in his Agronomie, t. 2, p. 156.

Professor Pierre also gives a stalement of the composition, exclusive of water, of the total yield per hectare of fruit taken up to June 30, and of leaves, stems, and runners, taken up to the middle of August of the same year. These results, calculated to pounds per acre, may be stated as follows:—The quantity of fresh fruit (which Pierre considered to be rather below the actual produce of his land) amounted in round numbers to 11,000 lb. per acre. The entire plants were reckoned to contain 62.3 per cent. of water, and the Vines 30 per ceot.

Composition of a Strawberry Crop (Roots Excepted)
in Pounds per Acre (Water Free),

				Plants.	Fruit.	Total.
Organic matter,	exc	lusive	of			
' nitrogen	4.4	4.4		4268 4	1053.5	5321 9
Nitrogen				88.5	16.0	104.5
Silica, iron, and n	augan	ese ox	ides	43.3	5-3	48.6
Phosphoric acid				35-3	5 4	40.7
Lime				1027	7.9	110.6
Magnesia				16.1	0.7	16.8
Potash				8g r	19.7	108.8
Soda				6 4	0.0	7.3
Other substances				120.0	8.8	120 7
m 4.1			•••		0.0	129 7
Total dry mai	ter per	acre		4770.7	1118.2	5888.9
	-					

Before entering upon a consideration of these figures let us see what constituents would be removed from the soil by the growth of ordinary farm crops. Potash, phosphoric acid, lime, and nitrogen are by far the most important elements of plant-food, so we will confine our attention to these.

Weight and Average Composition of Selected Farm Crops, in Pounds, per Acre.

Description of crop.		Weight of crop dry.	Potash.	Phosphoric acid.	Lime.	Nitrogeo.
		Lb.	Lb.	Lb.	Lb	Lb.
Wheat grain, 30 bushels		1530	9.7	143	1.0	33
,, straw		2553	18.2	8 4	9 2	12
Total crop		4183	27 9	22.7	10 2	45
Bean corn, 30 bushels		1513	23 0	22 3	29	77
,, straw	••	£848	58 1	92	30.2	22
Total crop		3451	81 1	31 5	33.1	99
White Turnip bulbs, 17	lons	3126	108.6	22-4	25.5	7 f
" " leaf	••	1531	40.2	10 7	48 5	49
Total crop		4657	148.8	33-1	74 0	120
Potato tubers, 6 tons		3360	75-4	24.1	2.9	47
" haulms		954	1.1	2 7	22.7	20
Total crop		4314	76 5	26.8	25.6	67
			-			

Total crop		4314	76 5	26.8	25.6	67
St	!rawl	herry (rop.			
Strawberry fruit ,, foliage and stems Total crop		1118 4771 5889	19.7 89.1 108.8	35 3	7.9 102.7 110.6	_

These figures show that if the whole crop of Strawberries-plants and fruit combined-were removed, it would take from the land more dry matter [dry matter is that which remains after the watery and gaseous portions have been driven off by heat] than an average crop of either Wheat, Beans, white Turnips, or Potatos; four times more potash than Wheat, and very much more than either by Beans or Potatos, but less than with white Turnips. Of phosphoric acid the Strawberry would abstract from the soil nearly twice as much as Wheat, and more than either Beans, white Turnips, or Potatos. Of lime, Strawberries remove ten times more than an average crop of Wheat, three times more than a full crop of Beans, four times more than Potatos, and half as much again as white Turnips. Of nitrogen, the Strawberry would im-poverish the land twice as much as Wheat, rather more than Beans, half as much more as Potatos, but 15 lb. per acre less than white Turnips.

If we regard the fruit only, and compare the com-position with that of Wheat grain, Bean corn, Turnip bulbs, and Potato tubers, which is the part usually removed and sold from the farm, the case is quite different, but in a practical point of view the foregoing figures are extremely useful and instructive, and will repay careful study.

Comparison between the Composition of 1 Ton of Farmyard

Dung and 1 Ton of Strawberry Fruit.

	Potash.	Phosphoric acid.	Lime.	Nitrogen,	
1	Lb.	Lb.	Lb.	Lb.	
Farmyard dung	11	8	16	12	
Strawberry fruit	39	**	16	32	
Fruit more than manure	28	3	0	20	

The three substances-potash, phosphoric acid, and lime-are perfectly soluble in water. When added to the soil they enter into combination with it, which, though insoluble in water, can be taken up readily by the roots of plants. If, therefore, these ingredients are applied to the land, and for any reason the plants do not take them up, they remain there until they are wanted.

Certainly there should be no difficulty in restoring to the soil the substances removed by an average crop of Strawberries.

Such a restoration as we have intimated in the above table is all that is needful, if the fruit only be exported. As it should be the aim of every gardener both to enrich his soil and to preserve it from impoverishment, the old Strawberry vines, runners, and roots should be put into a suitable compost and returned to the land. In this case, except in first establishing the planting, or in raising plants for market, the farm or garden suffers no loss but that of the fruit, and from a consideration of the com-

parison between one lon of farmyard dung and one ton of Strawberries, it can be seen that from 3000 to 3500 lb. of good stable manure is sufficient to make good what the fruit removes.

A light dressing of Peruvian guano dug in be-tween the rows, or watering the plants with a weak solution of sulphate of ammonia, will much improve

solution of sulphate of ammonia, will much improve the crop on poor soil.

A Strawberry field too highly manured may give a good crop when the weather is, by its coolness and dryness, just favourable to vegetation, but may fail of its crop when the heat and moisture at the flowering and further than a cross-size.

its crop when the heat and moisture at the flowering and fruiting time are excessive.

The New Jersey State Agricultural Report publishes the following particulars of the successful growth of Strawberies by Mr. P. T. Quinn, of Newark: —

"After a crop of Early Rose Potatos, heavily manured, dug and marketed in the end of July and beginning of August, lurrows half-a-yard apart, and 4 to 5 inches deep, are opened with a plough. Between August 15 and 22, Strawberry plants of the Charles Downing and Green Prolific sorts are set in these furrows 15 to 18 inches apart; weeds are kept down by two turns of the cultivator between the rows, and twice boeing. In December the plants are covered with a light well-decomposed compost, made of sweepings of the vegetable and fish markets, and some stable dung. Towards the middle of April the coarse sweepings of the vegetable and hish markets, and some stable dung. Towards the middle of April the coarse portions of the manure are raked from the plaots, and left between the rows; salted hay is laid under the then luxuriant leaves to prevent undue evaporation from the soil, and to keep the fruit clean. The average yield of Strawberries by this method is stated to be 5487 quarts per imperial acre."

EDINBURGH PARKS AND GARDENS.

EDINBURGH, with its quarter of a million of inhabitants, and soon to be reinforced by visitors to the Forestry Exhibition and crowds of tourists, does not seem to need the same extent of park and pleasure-ground space as other cities of similar population. Its admirable site, where hill and dale are blended together in pleasing proportions, together with the braciog influence from the waters of the Firth of Forth, immediately in proximity, offers more than average security for the prolongation of life, even where crowded tenements prevail. And then, unlike most cities, there are no crowds of chimney-stacks belching forth their hostile volumes of smoke to begrime the face or affect the lungs; everything, even to a stranger, points to it, not as a manufacturing city, but as the chief centre of law, light, and learning of Scotland. In the midst however of wealth there is also squalid poverty, and even the well-to-do working classes who inhabit the roomier and better of these seven to eight storeyed tenements, which make the old town of Edinburgh very conspicuous, are physically better, and consequently better tempered, if they have parks and pleasure-grounds within easy distance of their homes to promenade in. And the same may be said of the respectable middle class. They soon get tired of looking at the Regalia or Mons Meg, or John Knox's house, or St. Giles', or even Holyrood Palace and Chapel with all its grim associations open fields, well-kept drives and walks, trees, shrubs, and plants, and the delightful greensward are more in their way; and hence the municipal authorities of the city, faithful to the behests of their constituents, have done much, and seem to be doing much more, to extend pleasure ground space for the health and recreation of the inhabitants.

Meaotime there is in keeping, under the care of the Corporation, Prince's Street Gardens, divided by the National Gallery into an area of about 35 acres in the centre of the city-that is, dividiog the old from the new town—Calton Hill, extending to over 20 acres, in the East, and Regent Road paddock immediately adjoining covering over 3 acres. On the south there are The Meadows, with an area of 73 acres, and Brunts-field Links immediately adjoining with an area of over 32 acres; and then Stockbridge in the northwest, with an area of over 20 acres. In addition to this there are several squares and open spaces amounting in the aggregate to about 10 acres, all well-kept and suitably decorated, each of considerable importance to the families residing about and around Blackford Ifill, which has been recently acquired, extends to about 107 acres, and lies due south from the centre of the city, commanding a splendid bird's-eye view from its eminences. If to this we add the Queen's Park, which is purely Government property, extending to about 640 acres, there is a strong case made out for the citizens of

^{*} Warrington's Chemistry of the Farm.

Edinburgh enjoying exceptional advantages in this way, and yet we were told that the keeping up of all does not cost 1td. in the pound; and what seems anomalous about it is, the money spent, unlike some of our larger towns, is taken from a common-good fund, instead of being charged directly under a special Parks' trust.

When the stranger is ushered into the city from either of the two termini, the first open space to command attention is the Prince's Street Gardens. These separate in the most successfully undulating way possible the old from the new town-springing from the drive, substantially railed off, running along the street of the city-Prince's Street-and dipping deep down into the gulley, through which the North British Railway glides, rising up somewhat precipitously to the famous rocky eminence-Edinburgh Castle, and the Mound. These gardens have been transformed in conformity with the wants of the age in recent years, a spacious promenade forming one of the most distinguishing features having for its central object at the one end the famous Sir Walter Scott Monument by the self-taught genius Kemp, and St. John's Church on the other, where the celebrated Dean Ramsay so long officiated. The trees in the glade, that are going on grandly, are firstly and chiefly Corstorphine Plane (Golden Sycamore), than which there is not a more ornamental subject among trees, and when in young foliation is ofquite a rich golden colour-as rich in colour and far more handsome in lealage than the Balsam Poplar. Huntingdon and Canadiao, Willows, and the Sycamore are the more conspicuous trees. They all stand out in relief, not being crowded, which is advantageous for park trees, either in gardens of this kind or about the more pretentious demesne. A good scope of grass well kept is a desideratum, and together with the heds of flowering and ornamental plaots give a character to any formal piece of ground. The great slopes receding from the Prince's Street side have been planted with the Irish Ivy relieved at

Passing out of the railed enclosure, the next thing to command observation is the Waverley Gardens, which are merely the roof covering of the Waverley Market, where all the floral, fishery, and other exhibitions of importance are held—the finest thing in the way for this sort of exhibition in the kingdom. This space covers 2 acres, and is a unique piece of elaborate decoration—from the outer railing to the raised flower heds encased in stone nicely decorated both winter and summer.

intervals with the green and gold blotched Aucubas,

and although some of the townsfolk with irrational

ideas about them would rather have it torn out and

mixed with some such thiog, set down in a higgledy-

piggledy way, as Whin and Furze, we in turn would

rather have such things relegated to the fine stony

ridges of the Calton Hill or Arthur's Seat. We quite

agree with the designer, that the place for natural

plantations is not alongside piles of Grecian and

Gothic architecture.

Moving out and along the Portobello Road we come upon the Calton Ifill. From this elevation there is a magnificent prospect of both the city and the Forth. Some little additional expense might be advantageously incurred here, in the way of improving its somewhat hare appearance. Possibly the city authorities are content to keep it in an unfinished state, like the National Monument on its crown; pity that it should be so, for it is one of the first places that a stranger would elect to go to, and it is surely better to have a few parks well clothed and well kept than a lot in an unfurnished unkempt state. The monuments of Nelson, Dugald Stewart, the tutor of Brougham, Palmerston, and others, might have a little more of tree life about them, and the rocky slopes, which have been recently engaging attention, would be vastly more attractive with a few more trees and shyus shout they

Although, as we have indicated, the Queen's Park is not under the charge of the Corporation, but Her Majesty's Board of Works, the stranger will find this the next most convenient and by far the most important open space or park en route. In the time of James V. this extensive park was enclosed with a stone wall, which has not been kept up, although considerable portions of it still exist. This park is more remarkable for its commanding view from Arthur's Seat and Salisbury Crags than for any feature of the planter's art about it; indeed, but for batches of Whins and a few plants indigenous to its soil, the resources of Nature have not heen called in to give it the character it might possess.

The Queen's Drive, set on foot by the late Prince Consort, makes it easy of access for those not inclined to scramble up to its summit, but in all other respects it is as hare of prominent vegetation as the Bass Rock or the tops of the Lammermuirs, both of which can be seen from the summit on a clear day. Assuming that the visitor follows the Queen's Drive from Ilolyrood, passing St. Margaret's Well, St. Margaret's Loch, Whinny Hill, Dunsapie Loch, Sampson's Ribs, and the rifle range, and wending their way by Parkside Street, a few minutes' drive will bring them to the Meadows.

The Meadows connect the important suburbs of the Grange, Newington, and Merchiston with the city proper, and as a park constitutes undoubtedly one of the finest features in the suburban district. It is laid out with spacious drives and walks, and is suitably ornamented with all sorts of deciduous and evergreen trees and shrubs. There is more improvement in this direction in this way than in any quarter of the city. Mr. McLeod, the superintendent, says more people avail themselves both on weekdays and on Sundays of this than of any of the other parks, and just now the fresh green of the deciduous tree foliation, to country folks even, is an exceedingly pleasant sight.

And the same may be said of Bruntsfield Lioks, although not half the area. It adjoins the residential estate of Sir George Warrender, and some very large trees fringe the outline, chiefly Sycamores. Edinergh, even with its comparatively pure air, cannot grow Limes or Chestouts satisfactorily, and consequently they are disappeating, their places being filled with other material, chief among which are the Golden Elder, the Ash, the Laburoum, the English Elm, the Iluntingdon Willow, and the Mountain Ash (Pyrus aucuparia). All sorts of games are permitted in certain portions of these parks. Goli is a great game among the Dunediners, and there is an archery ground kept up and railed off in the Meadows.

Stockbridge Park is chiefly used for the games of cricket and football, and is consequently more a resort for the followers of those who engage in these national games than for more general outing. The great show of the Highland and Agricultural Society takes place there this season.

Upon the whole the parks and gardens of the town have been greatly improved during this last decade, and not a little of the credit in pushing these things forward has been due to the respected superintendent, Mr. Angus McLeod. A.

DISEASE OF PALMS.

In the course of last summer we received from different persons diseased plants of Corypha and Pheenix, the leaves of which were covered with brown patches. Herr Professor De Bary, of Strasbourg, had the kindness to examine them, and the following is the result, which we now publish:—

"The diseased plants of Corypha australis which you sent to me at the end of October were a long time under examination by us before we could say anything about That is the reason the answer has been so long delayed, The browned dead portions contained all sorts of fungi (moulds), but quite preponderating, as further examination taught, was the species Pestalozzia, related to, and similar but not identical with P. macrospora, If the brown spots were made moist the spore forming organs of the mould appeared on the surface in the form of black patches, as the enclosed sample in-dicates. When the moulds were distributed on healthy leaves that were cut from the plants and kept in a moist state the fungus pierced them and caused their death. According to the degree of dampness so spread the destruction over a greater or a lesser area. Whether the fungus is capable of killing perfectly healthy seedlings that are not kept too moist was not determined. From those plants which were sent, and which were grown all died except one. This has a leaf, on which the Pestalozzia has appeared, and which is now partially dried up. The dying symptoms made no further progress in winter, and the plant is pushing out sturdy new foliage. Healthy seedlings of Phœnix dactylifera and of Chamærops were not attacked by the fungus even under quite moist culture under bell-glasses. On saccharine mixture and similar inorganic substances the Pestalozzia grows extraordinarily luxuriant. What most concerns us is the destruction of the fungus. The attacks are most probably invited by the not quite normal forma tion of the Corypba seedlings, or at least assisted hereby,"

A. De Bary, in " Deutsche Gärtner Zeitung."

∯loqists' ∯lowers.

NEW VERBENAS .- The stand of these set up by Mr. W. II. Stacey, of Dunmow, Essex, at the recent meeting of the Royal Horticultural Society, points to the fact that the Verbena is not yet to be permitted to sink into the position of a neglected flower, and it would be a pity if it were so. The names of Sankey, Smith, Weatherill, Edmonds, Perry, Eckford, Keynes, and others have been associated with this flower in times past; its free, prostrate growth, and great plenteousness of bloom, will always make it a favourite. On this occasion Mr. Stacey was awarded a First-class Certificate of Merit for Lord Brooke, a rich shaded scarlet variety with a white eye, pip stout, and of good form. A variety named Orion was remarkable for the great size of the pips-so large, indeed, as to incline to coarseness; the colour bright shaded carmine, with a bold lemon eye. Other good varieties were Harlequin, the pale ground flowers heavily striped with crimson and lilac; Cantab, pale manve, white centre; Marginata, which opens carmine and changes to pale pink, and having a bold white eye; and the Clown, flaked and striped with purple on a white ground. Mr. Stacey has no reason to despair of the future of the Verbena. It may be his lot so to improve it as to make it as popular as it was fifteen or twenty years ago.

WINTER BLOOMING PELARGONIUMS .- It is probably but a well-worn platitude to say of gardening that there is no vocation which requires greater forecasting, or more preparation for the future. gardener, as a rule, has less to concern himself about to-day than about a period several weeks or months hence. By this preparation for the future to-day is provided for, but the to-day has to provide for some to-day yet in the distant future. Just now, for instance, gardens may be literally revelling, both under glass and in the open, in the glories of Pelargonium bloom; the forethought of last autumn has made the present abundance easy. The forethought of to-day may make as beautiful a show of Pelargonium bloom almost as easy at Christmas-certainly it can he had as easily under glass. Some of those who have been privileged to see the marvellous show of beautiful bloom from those favourite plants which Mr. Cannell always has at Swanley in the winter months may have thought, perchance, that only some magical powers could produce what seemed to be at the season of the year so impossible; and yet what has been produced at Swapley has always been obtained by simple means; in fact, the secret of Mr. Cannell's displays has chiefly been found in the early preparation of the plaots, and in growing them in suitable houses. It is true that the simple principle of topheating in vogue in the Pelargonium-houses at Swanley has something to do with Mr. Cannell's beautiful shows of bloom, but certainly not all; hecause, though few others have ever done these plants better, some have perhaps done them as well in a more limited way, and without top heating have produced great results.

All the section of zonal Pelargoniums propagate so readily, that cuttings put in now will be good rooted Now is the time to put in the plants in a month. tops; and to have them once rooted, making solid growth, it is wisest to put the cuttings singly into small pots. Once well rooted in these, they need shifting on into 48's, and again into 32's, and established in them the shifting is done, as heyond that size pot, for plants simply intended to produce an abundance of good bloom, it is not desirable to go. Plants intended for exhibition at the November Chrysanthemum shows should now be well established in 48's, being selected from autumn-struck cuttings, Presently these must be shifted into 24's, and the plants being well pinched, and then plunged in a bed of ashes or cocoa-fibre in the open, will, if kept till the end of September devoid of bloom, with the help of some manure-water, produce at that time in a gentle heat splendid heads of bloom for the Chrysanthemum exhibitions. The rich warmth of colour and glowing hues found in these plants render them truly acceptable aids to the late shows. Seeing that it is just as easy, under proper culture, to have them as good in November as in July, it is to be deplored that for autumn and winter exhibition and decoration they are not far more grown. Even for such particular purposes it is not too late to make a start now, using rooted stocky plants. Where it is not purposed to grow show plants the gardener may have the advantage that he can grow very many more kinds in the same space, and thus secure greater variety and beauty. Mr. Cannell has shown us year after year that doubles will bloom as beautifully as the singles, though as a rule they are less free-flowering; yet it is noteworthy that within the past few years doubles have undergone a great change in form, and are rapidly running the singles hard in the excellence of habit and freedom of blooming.

The original coarse growth, huge leafage, and

sparse flowers, have given place to better qualities in every respect, so that it is not difficult to have many doubles carrying splendid heads of bloom. As to sorts of both kinds most suitable for winter blooming some difference of opinion may prevail, arising, doubtless, from experience of particular kinds only. It is most improbable, however, that there are any kinds which, if properly grown, are not amenable to the grower's requirements, and will furnish him with an ample reward. As a rule, sturdy, compact, free growing kinds are preferable, but where some particular hue of colour can only be obtained from loose growers, it is better to have the indifferent habit than to sacrifice a beautiful variety. Dr. Denny Is a sample in point, for it is of very indifferent habit, but the rosy-lake colour of its flowers renders it in the winter singularly beautiful. It is one of not the least charming features of winter blooming Pelargonlums, that the hues seen in the flowers are always much more refined-and, indeed, it may truly be said exquisite-in the dull months of that period of the year than in summer; then the brilliant sunshine gives to the rich tints almost a gaudy air, that is not always pleasing, though necessarily they are in a degree effective. In the winter colour seems almost to give warmth, and warmth then is so very grateful. houseful of Chrysanthemum blooms is in the month of November a charming sight; a houseful of double and single Pelargoniums in bloom then is a glorious spectacle, and, as evidenced at Swanley, once seen never likely to be forgotten. All gardeners who have not yet grown Pelargoniums for winter blooming will do well immediately to set about it.

ANTIRRHINUMS .- The genial winter has permitted these biennials to live over and bloom now with a degree of strength that is unwonted here, for on stiff clay land wet mild winters seem almost as destructive to these plants as do severe frosts. As a result, a big bed of Antirrhinums over the greater portion of its area is now producing grand spikes of bloom some 4 feet in height, carrying flowers of great size and of exceeding beauty. Whether some form of fungus, or other disease, affects the Antirrhinum I cannot say, but in one portion of the bed plants early in the winter began to assume a browned appearance, and gradually to die off. The soil was the same, the strain the same, and there were no special reasons for this decay. Still it existed, although with no visible evidences of fungus such as we see so plainly on many other plants. Without doubt Antirrhinums thrive hest on dry gravelly soil, and the deaths amongst the plants may have been but an accident of soil, and nothing more. Very beautiful indeed now are all those which came through the winter untouched, and the noble spikes of great length are such as can only be seen on plants that have been well wintered, Though the majority are producing striped or flaked flowers, I do not think them open to the charge of sameness sometimes brought against them, for not two can be found absolutely alike, the markings being so varied in form and colour. One feature of any good striped strain is that it always produces many rich coloured self flowers; indeed, it is very common to find self coloured flowers of the first year breaking into stripes and flakes the following summer. Seed should be sown at once under glass to ensure late autumn bloom, and, the winter permitting, a grand show of bloom next year. Where it is absolutely needful the plants should be treated as annuals; seed should be sown in a gentle heat in March; and, put out early, the plants will bloom from midsummer till the end of the autumn. A. D.

ALPINE AURICULAS, — In looking over Mr. Turner's fine collection of these plants opportunity was afforded for grouping some of the leading varieties into their several sections, so as to enable growers,

and especially such as are desirous of becoming exhibitors, to make a selection of suitable flowers. At the Manchester and Rochdale Auricula Show all alpine Auriculas staged for competition must be shaded flowers—that is to say, there must be two colours on the margin, one darker than the other, the palest on the edge. Flowers that are true self alpines, i.e., having one shade only on the margin, are not admitted to competition. At the London show no distinction is made, but shaded flowers are decidedly the prettiest and most striking, and the new varieties raised at Slough show a very large preponderance of shaded flowers.

Of shaded flowers with gold centres the following are very good : - Mrs. Phipps, pale lemon centre, maroon shading into violet-this is a charming variety, of great merit; Mrs. Ball, rich golden ceutre, black ground, shaded bright purplish-rose extra fine; King of the Belgians, deep golden centre, maroon and bright crimson shading—one of the finest varieties for exhibition purposes; Picotee, pale gold, dark purple, and shading of bright salmon-pink; Philip Frost, creamy-sulphur centre, dark ground shaded with bright rose—a very handsome variety, but weak in the centre; Mr. Thompson, rich golden centre, maroon ground, with bright crimson edge, nearly a self, but when the shaded margin is clear it is very handsome; President, golden centre, maground, with pale salmon-purple shading, very large pip, and a strong grower; Spangle, bright golden centre, rich crimson ground, with slight bright crimson shading—golden centre; Sleight, dark ground, with broad shading of salmon-buff, large, very fine form; Titian, golden centre, dark ground, with vivid crimson edge -extra fine; John Brown, pale gold, dark ground, with broad shading of salmon-rose-very fine : I. T. D. Llewelyn, pale lemon centre, black ground, bright magenta-purple shading-extra fine; Sultan, bright golden centre, slight dark ground, with broad shading of crimson-very fine; Mariner, bright pale golden centre, dark ground, with shading of purplishcrimson—very fine pip; and Ethel, pale yellow centre, broad velvety margin, with the slighlest wire shading of plum. This by no means exhausts the varieties in this section, but they serve to show something well worthy of attention.

Of what may be termed cream or white-centred flowers the following are good representatives:—George Lightbody, white centre, dark velvety ground, with pale violet shading—very pretty and attractive; Tenniel, creamy centre, dark ground, with bright lilac edge—very pretty; Duchess of Coonaught, cream centre, dark ground, shaded with purplish rose—large and very fine; Queen Victoria, pale sulphur ground paling to green, dark ground, shaded with bright lilac—good form, and very attractive; Susie Matthews, white centre, dark ground, shaded with bright mauve-lilac; and Conspicua, creamy centre, black ground, with bright pale mauve shading—a good old variety. Diadem should properly come into the section: it opens with a pale gold centre, but soon changes to creamy white. This is a lovely shaded variety, having a bright crimson edging to a dark ground, and when in good form is highly

The following represent the self flowers, not a few of which are of great beauty, and well deserving of cultivation:—Phoenix, rich golden centre, with bright crimson-maroon margin, very fine form—sometimes this comes slightly shaded with brilliant crimson, and then it is most attractive; Spangle, golden centre, rich bright maroon margin; Mercury, golden centre, rich crimson-maroon margin—very fine; William Bragg, golden centre, glowing maroon margin—very fine; Colonel Scott, bright yellow centre, very dark maroon margin—large and very fine; John Ball, bright gold centre, rich dark crimson margin—extra fine; and Fred. Copeland, pale golden centre, dark crimson margin—vextra fine; and Fred. Copeland, pale golden centre, dark crimson margin—vextra fine; and Fred. Copeland, pale golden centre dark crimson margin—vextra fine; and Fred. Copeland, pale golden centre dark crimson margin—vextra fine.

William Bragg, golden centre, glowing maroon margin—very fine; Colonel Scott, bright yellow centre, very dark maroon margin—large and very fine; John Ball, bright gold centre, rich dark crimson margin—extra fine; and Fred. Copeland, pale golden centre, dark crimson margin—very fine.

The foregoing list does not Include the many fine varieties of shaded flowers Mr. Turner has produced during the last two or three years. They are not yet offered in commerce, but probably will be, to some extent at least, during the next year. Many of these are singularly beautiful, and mark advances in this flower of a surprisingly satisfactory character. R. D.

TULIPA ALBERTI.—A Central Asiatic Tulip with hright-red flowers, the segments of each of which is marked at the base with an obcordate yellow blotch, margined with brown. Hort. Elwes. Figured in the Botanical Magazine, t. 6761.

THE NEW PARK AT BARODA, INDIA.

IN a former number (p. 318) we published a descriptive account of the new public park, laid-out and planted under the direction of the present Gaekwar of Baroda, India, which we now supplement with two illustrations, kiedly sent to us by an Indian correspondent. The Kamnath Temple and Ghat, illustrated on p. 801, is situated on the north bank of the Viswamitra River, and is the great bathing place of the Hindoos at new and full moon, and after all The small tree near the centre in the family deaths. foreground is Ficus glomerata, and the larger trees inside the court of the temple are specimens of Ficus religiosa, which the Hindoo women venerate, from the belief that their deity, Vishnoo, was born among its branches, and that the performance under it certain rites and ceremonies will cause the barren to be fruitful. The other trees in the background consist mainly of Tamarindus indica.

The handsome stone bridge, illustrated on p. 805, spans a tributary of the Viswamitra, and bears the name of its builder-Charles Waddington. It was built in 1826, in one span of 100 feet, and is situated near to the entrance of the Park. Arundo Donax is seen growing on both sides of the stream. On the right-hand side the trees are nearly all Tamarindus indica, but the large leaves observable on this side are those of Ficus asperima, and the branch hanging immediately over the arch is of Zizyphus jujuba. On the left side the trees are Acacia arabica, amongst which are many plants of Ipomoca carnea, a South American plant which has found an agreeable home in Western India, where it ascends to the tops of the highest trees. The tree immediately behind the horseman ls Pongamia glabra, and to the right, behind the Hindoo and Parsee, is Acacia arabica in fruit. In the ornamental tub is Agave americana variegata, with an Enothera growing over it and in flower,

THE PROPAGATOR.

THE CULTURE AND PROPAGATION OF ARA-LIAS. - Although no restriction is placed upon the propagator as to what season of the year he should commence to propagate the Aralia, yet there are certain times and circumstances in which the cuttings and grafts should be made to ensure a satisfactory result. Strict attention must be paid to the fact that, in the first place, only well-matured wood-or, as it is termed, "hard wood" - is suited for making cuttings and grafts: if soft wood is selected the experiment will result in failure, loss of time, and waste of labour; and, in the second place, that in grafting particular care must be taken to so arrange it that both the bark of the graft and the stock meet as nearly as possible. In instances where a large batch of cuttings and grafts is required, one or two reasons present themselves to us in favour of the months of August or September as a good time to commence In the first place, during these months propagating. the cases will not be required for soft-wooded cuttings, and in the second it will greatly benefit the cuttings and grafts if they are allowed to grow quietly in the cases during the winter months.

It will be found a good plan to select suitable plants of such varieties as Aralia Veitchii, A. gracilima, A. elegantissima, and A. leptophylla, and to propagate them in the following manner: — I, By grafting the tops of the plants on their own roots; 3, by grafting the tops on the plants on their own roots; 3, by grafting the tops on the roots of other varieties; and, 4, by cuttings.

1. Grafting the Tops of the Plants on the Bottoms.—Taking the plants one by one, cut them down, leaving, however, 2 or 3 inches of the main stem—or, as it is called, stock—above the surface of the soil. Now it is necessary to make a graft from the top of that portion of the plant which has already been cut off. As we have previously mentioned, it should be a strong piece, having at least six or eight leaves attached. This is to be grafted on to the stock, or bottom, which is done as follows:—After levelling the top of the stock, or stem, cut a piece out of the side an inch in length and one-eighth of an inch deep, and in shape like the letter V. The graft must be made to fit this cut, taking special care to see

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that the bark of the graft is fixed so as to meet the bark of the stock. It is oow only necessary to hind them together with a strong piece of Russian matting. The old stump, or stock, frequently breaks out into growth, and will soon make a strong and bushy plant. If bushy plants are not required the young shoots should be rubbed off as soon as they appear.

2. Grasting the Tops of the Plants on their Own Roots,—This method can only be employed in such cases where the roots are of sufficient size and strength to nourish the graft. The course followed in grafting on the stem, or stock, can be followed in this case. The following is, however, a very good method:— After having cut the plant down, and cut it up icto pieces each having at least two leaves attached to it, the roots also should be cut into pieces of 1½ inch or frame by themselves on a gentle bottom-heat. After seven or eight days have elapsed they may be watered, but this must be carefully done, in order to prevent the water reaching and injuring the graft.

3. Grafting the Tops on the Roots of Other Varieties.—This may be done in precisely the same manner as detailed in the last preceding paragraph. The roots of the common hardy Aralia spinosa will supply an excellent stock upon which other varieties may be grafted. The sap flows freely from such soft stocks, which will rapidly make robust plants. The soil for potting the grafts in should be composed of half good peat, one-third loam, and one-fourth riversand, which should be well mixed together and rubbed through a 4-inch sieve. To every bushel of this mixture add a 48-potful of finely broken potsherds.

would if it was unsupported. Also in tying the leaves to the main stem it not only takes up less space in the cutting-frame, but also tends to prevent the leaves from decaying.

After watering the cuttings they can be placed in a frame upon a gentle bottom-heat. The lights of the frame should be raised for an hour each morning for purposes of ventilation, and newspapers should be spread over them during the day to protect the cuttings from the scorching rays of the sun. The cuttings will require careful watering, and should never be allowed to become dry.

Culture.—As soon as the grafts have united the plants can be taken out of the case and placed on a gentle bottom-heat, but not in a frame. When they have rooted through they can be potted into pots of

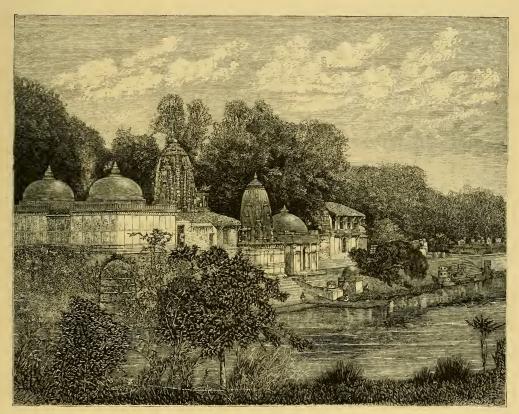


FIG. 148.—THE KAMNATH TEMPLE AND GHAT ON THE VISWAMITRA RIVER, BARODA. (SEE P. 800.)

2 inches in length. On each piece of root a longitudinal cut an inch in length should be so made as to leave a cleft for the end of the graft to fit into. The operation is best described as follows:—Insert the knife at the top of the root, and press it gently downwards for the length of an icch, and instead of cutting the piece off, withdraw the knife and cut it off from the outside in a downward slanting manner, so as to leave a piece projecting like the barb of a fish-hook. The graft must be made to fit this cut, and he firmly bound to it with a piece of matting. The grafts must not be watered until about seven days after they have heen potted; it is therefore necessary that the soil be well moistened before potting. If this is not done it will probably prove to be fatal to the grafts. They should be potted into thumb-pots, with the top of the root level with the surface of the soil, and placed in a case or

4. From Cuttings.—The remaining portion of the plants (the tops of which were taken for grafts), or plants specially set aside for cuttiogs, may be cut up into pieces about 1½ inch long, and having three or four leaves appended to each piece. A sharp knile should be drawn across the bottom of the stem of each cutting in such a manner as to form a cross. By this means three or four roots will often be produced instead of only one. The cuttings should be potted into long thumbs, in soil composed of hall turfy loam, one-third peat, and one-fourth river-saad, after having been well mixed together and rubbed through a 'inch sieve. The soil should be sunk an inch deep in it. The leaves should be raised towards, and tied to, the main stem, which should be securely supported by a small stick. This will keep the cutting firmly in the pot, and cause it to root sooner than it

suitable size, and then be replaced upon the bottomheat for four or five days. At the end of this time they should be removed to a warm house, and placed upon a cool bottom, and in this position they will grow best.

Aralias must never be syrioged when the plants are making new growth. If this is done it will invariably curl the young leaves, which when they have arrived at maturity, being themselves misshapen, will disfigure the plant. The house should be well veotilated, and the cuttings protected from the rays of the sun.

Before concluding it will be well to make a few remarks upon the fungus which commonly attacks, and often destroys, the graft. It is a small blue and white fungus, and appears upon the matting, or other tie, with which the graft is bound. The best way of destroying the fungus is by brushing it off with a small brush, or wiping it off with a plece of cloth; but, in order to prevent its ravages, the grafts should be passed through the gardener's hand, and carefully examined once a week. T. O.

The Erboretum.

SUBSTITUTES FOR THE LARCH .- In your number for the 7th inst, you call attention to the failure of the Larch in many places. Of the varieties you suggest as substitutes no doubt the most promising is Abies Douglasii. One has only to see the fine trees at Murthly (Perthshire), and also those planted by Mr. McCorquodale on the Earl of Mansfield's estates lu the same county, to become convinced of this. There are also some fine young healthy and vigorous trees in the policies of Moncrieffe House, Bridge of Earn, planted by Mr. Bissett, and these are fully exposed to the southwest winds, which are here felt with great severity, the Tay Bridge succumbing to a gale from this quarter. A. Douglasii grows also remarkably well in the stiff clay of the Weald of Sussex. The late Mr. Perkins, who collected so many fine trees at Chipstead Place, near Riverhead, planted two specimens of A. Douglasii close to his residence, in a bank of sand, and after growing to a large size they suddenly died away, after some twenty years' growth; no doubt the sandy subsoil had something to do with the trees giving way.

Pinus Laricio is so difficult to transplant that it is a question whether it will ever be planted in quantity. Mr. Rose, who until lately was gardener at St. George's Hill, Weybridge, some years since showed me a very fine specimen. Sequoia sempervirens will not stand the wind, the young shoots being so brittle that the top is constantly being broken off by gales. The largest bole I have seen of this is at Tandaragee Castle, the seat of the Duke of Manchester in Ireland. The best specimen I remember to have seen was at Wilton House, near Salisbury, the seat of the Earl of Pembroke; it was growing freely not far from the splendid Cedars of Lebanon for which Wilton is noted. If I remember rightly, Mr. Challis told me it (S. sempervirens) was the only Conifer that seemed to thrive, excepting the Cedars of Lebanon, as in the gravelly subsoil, about 2 feet below the surface, water is always standing or percolating. The young tree was as straight as a gun-barrel. There is a Deodar also at Tandaragee growing on the margin of a pond, the roots being consequently in a swamp in a similar state as found growing in the Himalayas; no doubt want of attention to this has been the cause of so many failures. The two trees I would strongly recommend to be planted in quantity in the usual way as grown for timber, so that they could be nursed like other timber trees, are Thuiopsis dolabrata variegata and Retinospora pisifera. The Thuiopsis stood in the Perth nurseries the terrible winters of 1878-79, 1879-80, and 1880-81 without the slightest injury, or even of the foliage being browned, the Retinosporas suffered slightly, as also Cupressus nutkaensis; a few more degrees of frost would have killed many of the Californian and Japanese Couifers of recent introduction. Cupressus Lawsoniana and C. L. erecta viridis, 8 and 9 feet high, exposed to the west, were killed root and branch; and in the nursery quarters nearly a fourth of the Douglas Firs were also destroyed; those, however, that remained after the winter was over seemed none the worse, with the exception of a few of the ends of the leaves being browned. The Thuiopsis dolabrata variegata grows freely, and is so readily propagated that it could soon be obtained in any quantity. Ladies and gentlemen who have resided in Japan have told me that this was the best timber, and that it is highly valued in its native country, Retinospora pisifera and R. plumosa being next in request. Much valuable information may be gleaned from Mr. Hunter's Woods and Forests of Perthshire as to the hardiness of some of the newer introductions, as the winters I have named will never be forgotten. At Kinnoull, across the River Tay from Perth, after the break-up of the long frost of 1880-81, I saw a plumber engaged for two days before he could get at the water-pipe to repair a breakage, and he found the soil frozen to the depth of about 3 feet, show-ing the terrible ordeal recently introduced trees and shrubs had to undergo. Abies grandis will, no doubt, be much planted when more plentiful, also Abies Lowii

(Parsonsi or lasiocarpa). A, Nordmanniana would also be worth trying as a timber tree, being so hardy and growing freely almost everywhere; it is, however, usually seen as single specimens and not planted in clumps or plantations for timber. North of the Tweed the foresters seem to have given more attention to the requirements of timber than those in the south; as there is, however, a prospect of timber before many years being in brisk demand, especially if our foreign supplies fail, landed proprietors would do well to pay more attention to this crop; so much land at present lying waste or almost so, could with modetate outlay be made profitable. William Heale, Lincoln.

Notices of Books.

The Sagacity and Morality of Plants, &c. By J. E. Taylor, Ph.D. Chatto & Windus.

This is one of a class of books which we venture to think is becoming too numerous. In so saying we are not thinking of the interest of authors and publishers, but of the probable effect on the progress of sound botanical knowledge. Of late years, stimulated by the epoch-making works of Darwin, we have had a host of such books, the earlier ones of which we venture to think were the best, because more fully imbued with the inductive spirit and caution of the great master. Such, however, washis influence in revealing and calling attention to points of fascinating interest to those who have a liking for natural history, that many devoid of his judicial spirit have allowed themselves to be carried away into the land of romance, to substitute parable for fact, imagination for reality, all the while believing themselves to be faithful disciples of the great teacher. We fear Mr. Grant Allen has a great deal to answer for in this respect on his own account, and by reason of the example he has set to others endowed with a fluent literary style.

Dr. Taylor, whose previous works we have had occasion to commend, and whose object is so laudable, has, we regret to find, on this occasion allowed himself to stray, as he is not wont to do, from the safe path of induction and accurate statement. That there may be no "misunderstanding" we quote from the chapter on that subject :- " Every flower is in reality composed of aborted and degraded leaves." And again, "Leaf-buds can be changed at will into flower-buds, as every gardener knows." fear gardeners do not know this, but certainly they would be very glad to do so if they could act upon the knowledge. So we are told that the horti-culturist "rings" or otherwise cripples his Azaleas or Camellias, so as to force them to produce flower-buds instead of leaf-buds, and that "he cuts down Lilies year after year just before they give signs of flowering . . . so that when such a plant is allowed to flower there is an unusually magnificent display," We may also ask what proof there is "that the uprising sap or fluid food must be thinnest and poorest at the ends of the branches [where the flowers are borne] seeing that it has been tapped all the way up by the leaves." We should have expected that the growing points would be the best provided with nutriment, and that the requirements of pollen-formation and seed-development would demand, as, indeed, we know they do, a relatively larger supply of nutriment than in the case of the leaves. A few pages further on we are told that "the upflowing fluid is called sap. and that it is to plants what the arterial blood is to animals." This occurs in a chapter headed "Stating the Case," but we must say that it is stating the case as it might have been done a century ago perhapsthough even then the comparison would have been made with venous not arterial blood-but certainly not as it would be expounded by any physiologist of the present day, and certainly not as it would be put before any examiner nowadays by any candidate who had well-founded hopes of passing the ordeal. The metaphorical style of teaching is very useful when the student is made to understand that it is metaphor, not fact, that is laid before him; but if this be not done, the task of unlearning becomes more serious than that of learning. When the opportunity occurs for publishing a second edition, it may be suggested to the author that of the two accuracy is to be preferred to fluency, and if a model be required, none better can be found than in the little works laid down on much the same lines as Dr. Taylor's—we allude to Dr. Asa Gray's How Plants Grow and How Plants Behave.

Prchid Notes and Hleanings.

ZYGOPETALUM BURKEI.—This species, described in our columns, vol. xx., p. 684, is a native of Demerara. The racemes spring from the base of the oblong sulcated pseudobults. The flowers are 2½ inches across, flat, star-like; the sepals and petals ovate, lanceolate, green, with purplish-brown blotches. The lip is shorter than the sepals and petals, rounded at the free end, white with raised orange ridges at the base.

CŒLOGYNE BARBATA.—A winter-flowering evergreen Orchid, with egg-shaped pseudobulbs and racemes of large white flowers, each 3 inches across; the sepals and petals lanceolate; the lip three-lobed, as long as the sepals; the lateral lobes erect, curved over the column, the central lobe oblong, notched; sepia-brown, with darker stripes, and with fringes of brown hairs. It grows in a cool-house, with the Odontoglossums,

ODONTOGLOSSUM PESCATOREI.—A very fine variety of this is in flower with Messrs, John Laing & Co., Stanstead Park Nurseries, Forest ITill, who have just commenced cool Orchid culture. The flowers are pure white and very large, and the labellum is broad, beantifully crenulate, and heavily blotched with violet, and stained in the centre with orange. If Messrs. Laing are as successful with Orchids as they have been with tuberous Begonias, we may expect to see any of the good things which fall into their hands grown to perfection.

DENDROBIUM LINAWIANUM—a Chinese Orchid better known under the improper name of D. moniliforme, with jointed stems, long pedicels, supporting rosy-liac flowerseach about 3 inches across, with narrow sepals, broad petals, and relativelysmall lip with a white base, with two violet spots and an anterior rosy-purple blotch. It is figured in the last number of the Orchid Album, t. 141. Mr. Williams gives a caution as to over-potting and over-watering this species, and recommends that good drainage be given and that the plant be well elevated above the rim of the pot. The plant should be grown at the cool end of the East India-house, with plenty of light.

VANDA SUAVIS.—Mr. De Bary Crawshay has favoured us with a cut spike of fifteen flowers of a good variety of Vanda suavis, from a plant which produced five spikes, and sixty-five flowers in all, a rather unusual number from one "break" of which the specimen only consists. This is 4 feet 6 inches high and has leaves, of which there are forty, down to the pot.

FRUITS UNDER GLASS.

VINES,-We are now enjoying favourable weather for Grape colouring, as air can be freely admitted without causing a chill, and a suitable atmospheric temperature can be maintained without the aid of much fire-heat. Under these agreeable conditions the ventilators of houses in which the fruit is at this stage may be kept well opened until 6 P.M., when they should be left so that a steady circulation of air may continue during the night. The night tem-perature for Muscats while they are changing colour should not be permitted to fall below 70°, and that for the day may range about 10° higher with the usual rise from sun-heat. These like other varieties require a constant current of air to perfect them, but they are particularly impatient of cold draughts, and should therefore be cautiously ventilated in cold weather. The bunches in late houses, which have been all thinned, should now be gone over a second time, and have all defective herries removed. Sublaterals must also be removed as they form, except where wanted to extend over thin spaces; in such cases they should be stopped when they have reached the desired length, and be tied down to the trellis. Afford enough fire-heat to keep up the night temperature to 65°, and be guided by the weather in damping the mulching material for the purpose of creating atmospheric moisture. The floors of houses having only external borders should be thinly coated

over with manure from Mushroom beds which will retain moisture and canse an agreeable humidity which is not to be derived from a hard solid surface. All successional Vines which have fall crops advancing will now require an abundance of tepid liquid manure to keep them well nourished and their foliage in a healthy robust condition. This is often far too stintedly administered, and disappointment frequently results from this cause. Our borders are formed more firmly, and the internal ones are deeper than is generally considered advisable to have them, yet, although they are well mulched with horse droppings, or other short manure, and do not dry so readily as those more porous and shallow, we water them at least once a fortnight until a stream flows freely from the drains from the time the trelliess are covered with foliage until the Grapes have finished colouring, and that such treatment suits them is manifest.

MELONS.-Although at this season Melons are usually grown without fire-heat, we still find a little at night helpful. Our situation is in a valley which is traversed by a stream, and the predominating soil in the neighbourhood is tenacious clay, from which a minimum of heat only radiates; the average night temperature is consequently a low one, and we frequently find ourselves driven to the aid of artificial heat, when those who are more favourably placed can succeed better without it. Continue to sow a few seeds once a fortnight, to yield a supply of fruit in the autumn. When the space can be spared, the young plants may be planted out from their seed-pots as soon as the first rough leaf has fully developed, instead of shifting them into 32's, as is the usual practice. There is a considerable advantage to be gained by planting-out at this stage, inasmuch as the plants do not receive so much check, are not so liable to be spoiled by red-spider, and at once produce a remarkably robust growth not usually obtained by those treated in the customary way. Water both at the roots and in the atmosphere must be carefully given to successional plants trained on soil over beds of fermenting material in unheated pits in dull damp weather, for if indiscreetly made use of the stems will lack fibre, and the plant will, in all probability, succumb to canker. For this reason we never mulch plants subjected to this treatment as we do those trained on a trellis or are grown under the influence of fire-heat. In dull seasons we have found it advantageous to raise the main stems a little above the surface of the soil on small flower-pots reversed to enable the air to pass under and consolidate them. The laterals carrying the young fruits should also be raised well over the foliage upon small wooden props, so that the blossoms may keep dry and proper fertilisation be thus facilitated. Some kind of support must also be provided for the fruit; flower-pots are frequently used. but these cause disfigurement by the fruits resting on their hard surface. We employ two props for each fruit, which support a short rod, to which the lateral is trained. The props are of sufficient length to prevent the fruits coming in contact with the soil. When this plan is adopted a space clear of foliage should be preserved immediately around the fruits, otherwise moisture will rest upon them and cause coarse netting.

PEACHES AND NECTARINES .- The condition of the weather during May was such as to bring up the colour of early Peaches in a very satisfactory manner. As the trees in the early house are severally cleared of their fruits they should be at once sufficiently washed with rain-water, by the syringe being so directed that both surfaces of the leaves are reached with sufficient force to dash off red-spider, which, if previously kept down, usually makes headway and multiplies, while syringing is discontinued during the fruit-gathering period. Much of the wood which has carried the crop will be of no further service, and should be cleanly cut out; in fact, such use should now he made of the knife as will leave but little to be done after the foliage falls. This is an important point in Peach culture, which should not be delayed, for it has a beneficial effect upon the trees when dope in time, by giving the sun and air more freedom to perfectly mature the young wood and foliage, and to thus invigorate the buds upon which the ensuing crop Unnatural or premature maturation of the wood would, however, be fatal, and its growth and development of healthy foliage must be encouraged, and a check from any cause avoided. Inside borders

which have become more or less dry during the gathering season should be thoroughly watered with cool water, and the temperature should be kept as low as possible. The ventilators both back and front must be left wide open continually, or the top sashes may be removed if they are not fixtures, so that the benefit of rain and thorough coolness may be fully reaped. Liberal ventilation should be afforded to houses in which the fruits are ripening, and the use of fire-heat may be discontinued when the state of the weather will admit of its being done without causing a check to the trees. Late houses should be kept freely ventilated; let the young shoots he carefully tied-in and kept clear of insects, and keep external as well as internal borders well supplied with tepid liquid manure. It is an easy matter to be deceived by showers of rain after spells of dry weather when the top-dressings of short manure have become dry; these absorb the rain, and the roots are little benefited. Thomas Coomber, The Hendre Gardens, Monmouth,

Plants and thein Cultune.

THE CONSERVATORY, - With the prospect of some warm, genial weather soon, with some brief periods of which we have been favoured of late, with intervals of somewhat cold and sunless days, we now purpose easing our stoves of several of the hardier among the class of fine-foliaged plants for the decora-tion of the conservatory till the end of September. Reference to a previous Calendar (p. 483, April 12) will be found to give selections of appropriate subjects for the decoration of the conservatory during the summer months, and if they have been treated as then advised no material harm will accrue to any of them. It will be found necessary to lessen the amount of air and to avoid any sharp currents for at least a week or two, till the plants become fairly well acclimatised to their new quarters, then matters may go on pretty much as before during warm congenial weather. It a spell of colder weather should set in, it will he an easy matter to keep the structure more nearly closed to the exterior atmosphere, at the same time avoiding any superfluous moisture as much as possible. Greater caution will be necessary, perhaps, in some instances to avert any damage from scalding, these kinds of plants being more susceptible to injury in that respect than the ordinary run of conservatory

We have previously written against the bad policy of besmearing the ronfs with heavy permanent shading in the form of whiting or lime; in an ornamental building, such as a conservatory, this should on no account be allowed. When a permanent material for this purpose is requisite by the formation of the roof and its inaccessibility to the fixture of roller-blinds, we advise Hexagon Netting to be used. It is of sufficient texture to diffuse the direct action of the sun's rays upon the plants beneath it, and in dull cloudy weather admits a considerable amount of light by reason of its loose make. For upright use to screen the plants along the sides or ends of the building, there is nothing to surpass spring-roller blinds when well fixed. These are far hetter than those with cords to work on the old system, which we have found to he constantly getting out of order by the stretching or contraction of the cords according to the weather. For these we have now substituted the spring-blinds, which give, comparatively speaking, no trouble at all, and if well protected against wet will last many seasons.

When the plants are first taken from the stovehouse to the conservatory be careful not to apply water to their roots in quite such a liberal manner (Palms and Tree Ferns excepted), and that which is used should be chilled previously to being applied, either by exposure to the warmth of the sun or by drawing the supply from another source and of a higher temperature, and reducing the same rather helow that which has been previously used. See that the foliage of plants with bold and massive growth is kept as clean as possible; although this is necessary in every instance, it is of more importance among the most striking and effective plants when under close observation. In the arrangement and grouping of the plants endeavour as far as possible to vary the same as a contrast to the method that has been pursued during other periods of the year. The fine-foliaged element should be allowed to predominate, using flowering plants more sparsely. As each of these latter require renewal they can be taken out without disarranging the entire group when they are only used as dot plants. Our plants are arranged on a flat surface and on the ground line, whilst for the summer months we endeavour to keep the arrangement as low as possible, in order that a good view of the pleasure grounds may be obtained over and above the majority of the plants. Specimen Dracenas and Palms are interspersed to break up the monotony of the group, and thus they produce a very good effect, each plant being allowed an abundance of room.

This kind of arrangement suits our convenience admirably during the summer, and I doubt not many others might adopt it with advantage. Being short of accommodation for bringing on flowering plants at this season of the year, and of the usual description used in conservatories, induced us to take this course. Of these latter we only grow small stuff for the filling of ornamental wire baskets that are arranged under a verandah during this season of the year. When the conservatory is thus arranged an opportunity will be immediately afforded of rearranging the other houses from which the supplies have been drawn, which in our case, and I doubt not in many others also, will become considerably overcrowded of Whilst this work is being proceeded with a watchful eye should he kept on all insect pests, and the remedies so repeatedly recommended in these columns be put in practice without delay. Seize the opportunity, too, of giving the house itself a good cleansing when it is possible to spare the time for that purpose. If a temperate stove, as well as a moist warm one, is at disposal the plants could be arranged in each to suit their respective requirements for the time being.

CAMELLIAS.—Any of these that are grown in pots can be transferred from the conservatory to the open air for the summer season by this time, the growths being now fairly well hardened. A fumigation should, however, be previously given if any thrips or aphides are getting together a colony. When taken out-of-doors some caution at first will be advisable to screen the plants from the direct rays of the san during the heat of the day. We prefer ours to be so placed that the sun's rays do not reach them till late in the afternoon, and they are thus arranged now with precautionary measures employed to secure them against being blown over by a sufficiently strong wind. These plants, when of dense bushy babit, are readily toppled over if they are of extra size, and we find it a saving of labour and an insurance against injury to secure them with stakes in the first instance. Any potting operations had better be deferred another month or two, when the wood is thoroughly well bardened; in the meantine give close attention to the watering of any that are pot-bound, and after a hot sultry day a good all-round syringing will be very beneficial to them.

INDIAN AZALEAS.—The latest of these will now be past their best, and will at once require attention in the removal of the seed-pods, which on late flowering varieties often set very freely, after which the young growth should be pushed forward in a moist growing temperature, and in the course of a few weeks they will be fit to remove to the open air. It is a mistake to keep them too loop in a growing atmosphere, often resulting in a bad set for another season bloom. As the growths are completed any requisite potting operations should be seen to in order to allow these hine rooting plants as long a period as possible to lay hold of the new soil before the advent of another winter. James Hudson, Gunnersbury House Gardens, Acton.

PALISOTA BARTERI.—In the ordinary form of this plant the inflorescence consists of a dense ovoid cluster of flowers not exceeding 2 or 3 inches in length; but a specimen planted out in the Palm-house at Kew has produced a cyliodrical raceme of 6 or 8 inches in length. The outer and inner whorks of the perianth segments are similar in colour and texture—a very abnormal character for the order. They are of a papery or transparent white, and hotticulturally of little decorative value, but they are followed by berries, which are at first white, then spotted with pale violet, and ultimately of a bright scarlet colour. In the germination of seeds of this plant it may be interesting to note that as in so many other monocotyledons, the blade of the cotyledonary leaf does not leave the testa, while the first true leaf appears like a cotyledon that has enlarged, as in the Cyclamen, to perform the duties of an ordinary leaf, although in this case the

APPOINTMENTS FOR THE ENSUING WEEK.

POPAL Horizollural Society: Meeting of Future and Flaval Committees, at 11. As. 1 Future and Flaval Committees, at 17. As. 2 Fortist and Vegetable Show in the Conservatory Special Sale of Orbrids in Flower, at Pro-Leds Horizollural Society's Show (Meeting Meeting Meetin

WEDNEEDAY, Juce 25

Croydon Imported Orchids, at Stevens' Room. Imported Orchids, at Stevens' Richmond Horticultural Society's Show.

THURSDAY, June 27

FEIDAY, June 27

SATURDAY, June 28

SATURDAY, June 28

SATURDAY, June 28

Figure School
THE notes which we have from time to time published concerning the provision of OPEN SPACES IN OUR LARGE TOWNS for recreative purposes, and especially for the supply of fresh, and for the dilution and removal of foul air, have already sufficed to show that although many of our large towns are fairly well provided with such outlets on their outskirts, there is too often a lamentable deficiency of open space within the town itself. Where the piety of our ancestors had not made sufficient provision, municipal wisdom and private generosity have in many cases supplied the void, with the result that few of our large towns have not now, at greater or less distance from their centre, adequate provision of the kind indicated, and public attention is so much directed to the importance of the matter that there is little fear now-a-days of wilful neglect in procuring and maintaining such open spaces. general requirements are for the most part well studied; first and foremost there is the space, as free and unobstructed as circumstances will

allow. No buildings beyond such as are absolutely necessary should be allowed within the precincts of the town parks, but open, breezy lawns for recreation, avenues of trees for shade and shelter, seats in abundance, shrubbery borders and clumps, with a due admix-ture of evergreen and deciduous shrubs, flower-beds in moderation, and, above all, in good taste; well-arranged walks and rides not more numerous than the necessities of the case demand, and devoid of purposeless meanderings. These strike us as the essentials for which the ratepayer may fairly be called on to pay, and they may be summed up in the sentence—Plenty of space and plenty of plants to freshen, purify, and adorn it. Ornamental details furnished by the landscape gardener and the florist, and educational appliances, are by no means unimportant, but for them we might look rather to private generosity than to public

As for the means and appliances for recreation the population itself might not untairly be expected to supply, under proper regulation, what is required. When the essentials are provided, then, and then only, is it desirable to spend money—especially public money—on matters of relatively secondary importance.

But while the facts are as we have stated in the case of the larger areas, in the vicinity of our large towns, the state of things is by no means so favourable within the towns themselves. House abuts upon house, long lines of streets without a break-yards filled up with factories, often noisome-what should be, as they once were, gardens, now filled with warehouses, store rooms, stables, and other even more objectionable obstructions to the free passage of GoD's gracious gifts of light and air: this is what we find in most towns, and it is bad enough without entering into the noisome details of foul slums, festering alleys, and noxious manufactures. On purely sanitary grounds, numerous small open areas thickly dotted in the midst of our large towns, are, we venture to think, even more important than the larger areas in the suburbs, where they are of less intrinsic importance from a sanitary point of view, and where their distance from the densely populated portions of the town of itself constitutes an obstacle to their full enjoyment by the persons to whom they are of greatest importance—the children, the aged, and the infirm.

It is from this point of view that we sympathise so heartily with the efforts made in London and elsewhere to secure open spaces for health and recreation in the very heart of the towns. It is difficult to exaggerate the value of the open spaces on the Thames Embankment, not easy to say too much in praise of the barristers, who with a degree of thoughtful consideration with which they are not often credited, throw open the Temple Gardens at stated intervals for the enjoyment of the dwellers in the neighbouring closelycrowded streets. Few spaces are so limited that a little grass, a tree or two, and a seat cannot be provided, and trifling as this may seem it is not really done, as any one may judge for himself in the courts of busy London. What a relief to the eye and spirit is even a single tree in such a situation, while the amount of oxygen given off by its surface contributes in no small degree to the purification of the vitiated atmosphere.

Those who are too busy-too absorbed in other matters-to note the benefit even of a single tree in a London court, may form some idea of the matter by paying a visit to the Health Exhibition. Consciously or unconsciously, we know not which, the managers of that Exhibition have supplied us with an excellent illustration of the benefits to be derived from small open spaces. Gallery, arcade and corridor, are here packed close to gether, each filled with a crowd of human beings, blocked up with machinery, fouled with dust, redolent of many and divers odours. Here we have in a small compass an epitome of what we may see in London, Manchester, Sheffieldin any large town. Step out from one of these crowded galleries into one or other of the numerous open spaces which separate one block of building from another, and how welcome the change. Just at this season they are rendered exceptionally beautiful by the brilliant colouring of the Rhododendrons and other flowering shrubs supplied by the nurserymen, and by the well-kept grass; but all through the season, even when the brilliancy of the flowers is past, these open spaces, constricted though they are, will be found a delight and refreshment to the wearied visitor.

The exigencies of the Exhibition have prevented any large amount of open space being reserved in any one place, but this makes the smaller areas dotted about all over the Exhibition all the more grateful, and, as we have said, they furnish models for imitation wherever people are densely crowded together in closely restricted areas. Broad thoroughfares, lined with trees if possible; roomy squares, encircling boulevards, small recreation-grounds thickly dotted in the hearts of our towns, these are what are required to promote the health and comfort of the inhabitants, and by consequence the welfare of the State. In the formation, maintenance and management of such spaces, the gardener is the man best suited, and were his advice and his knowledge what to plant more frequently sought, much unnecessary expense and imperiect management would be obviated.

— DISEASE IN TULIFS,—Mr. ELWES sent me some specimens of Tulips in the spring which seemed suffering from cold. He thought at first that the sun acting on the wet leaves was the cause, but the diseased state was extending to the stem. The plants were growing in a frame, which, though exposed to

rain, had been protected from frosts, and it was feared that the disease might affect all the more delicate wild species. Precisely the same affection has taken place at Sibbertoft in wild plants of the true T. Oculus solis, and others growing in the open air. I attributed it at first, like Mr. ELWES, to cold, or some other atmospheric cause. I was unable at the time to examine either, but I have had an opportunity since, and I thought, on making a section, that I had discovered a large-spored Protomyces, which would be quite enough to damage the plants; but fortunately I had preserved Mr. ELWES, specimens, which were yet in the box in which they were received, and I found that on the patches minute plants of Polyactis cana had been developed, which bore myriads of spores, which were undoubtedly what I saw in the section. matter is worth recording, because it shows how easily mistakes may be made. I have this morning examined the bulbs of some of the plants affected in my garden, and I find that they are not seriously diseased, and I still find no fungus in the decayed leaves. I hope, though, that neither Mr. ELWES nor myself will have to regret the loss of some interesting wild imports. M. 7. B.

- Foxgloves,-A lady was seen wandering about in the conservatory at South Kensington during the last meeting of the Royal Horticultural Society, carrying in one hand a portion of a Foxglove spike upon the top of which was one of those not uncommon abjects, a large cup-shaped flower. Probably thinking her flower to be a genuine novelty, she hoped it would have proved a surprise to the Scientific Committee if she could light upon that body. It is rather an odd circumstance in relation to these large Foxglove flowers that they seem for a time to manifest themselves not unfrequently in a strain, and then totally disappear. duction is of course due to some malformation of growth by which two or three ordinary blooms become conjoined into one, but seed carefully saved from the pods resulting, fails to reproduce the exaggeration. Fortunately Foxgloves are so beautiful that they need no meretricious aids such as distorted flowers to render them popular. The Digitalis pur-purea of the woods and waysides is pretty, especially when grown in a mass, but the fine spotted garden forms whilst retaining all that is charming about the wild kind, yet add such fine form, size, variety of colouring, and beautiful markings, that it is fair to say few really British flowers have been more thoroughly improved, yet remain unspoiled. It is a fair subject for surprise that after all Foxgloves of the beautiful spotted strain are not more universally grown, for they seed most freely and are most easily raised. It would be hardly fair, perhaps, to treat them as wild flowers, for without some decent cultivation they may soon lose all their added beauties. It is not too late to sow seed now, but it should be where it may be induced rapidly to germinate, so that the young plants put out with ample room may have time to develope their growth fully.

FUNGUS ON PEAR LEAVES,—In a neighbour's garden I was surprised a few days since to see many of the leaves of very vigorous young Pear trees marked with very dark brown dead patches. I was at first somewhat puzzled, as they were clearly not the ordinary spots due to early cold, but after some search I found that they arose from the attack of a minute fungus, Ascomyces bullatus, which I had not seen for some years. Some of the Condinental botanists have refused to adopt the genus, substituting for it the name of Exoascus. The word was intended to indicate that the whole plant was composed of naked asci, the new name really meaning the same thing. As others may have similar spotted Pear leaves, it may be well to point out the cause. TULASNE refers the plant to the genus Taphrina, but it is doubtful whether he is right in so doing. M. J. B.

——PRESENTATION TO MR. B. S. WILLIAMS,
—For some years past Mr. B. S. WILLIAMS has sent a collection of plants to the annual exhibitions of the South Essex Horticultural Society, the last of which was held on the 12th inst. at Knott's Green, Leyton, on which occasion the committee presented him with a handsome pair of candlesticks and inkstand in silver, "in recognition of his valuable services to the Society." We are glad to note that the managers of one society, at least, have a soul above medals.

EARLY STRAWBERRIES. — Of these we received from Mr. LAXTON, of Bedford, on Tuesday, two varieties perfectly ripe, gathered from plants in the open ground. King of the Earlies, a hybrid between Vicomtesse Héricart de Thury and Black Prince, from which the first ripe fruit was gathered this season on May 31, has fruits of medium size, conical in form, with somewhat prominent seeds, and of a dark crimson colour on the side most exposed to the light. This must he valuable for its earliness, combined with size, in which latter point it excels Black Prince, but the flavour of the sample sent was not equal to that of the old variety, although this might be owing to the want of sun-heat during the three or four days preceding the ripening. The Captain, a cross between Crown

part are unpleasantly prominent. An important feature is an index containing the vernacular names, Arabic, Greek, Persian, and Turkish, prepared by Prof. ASCHERSON. The intimation given on the cover that the author is engaged in the preparation of a supplement will be received with great satisfaction, but, with or without a supplement, the work will remain an enduring monument of the keen sagacity and unwearied labour of the author, and will secure to him the gratitude of many generations of botanists.

— MR. CULVERWELL'S HYDRID RASPERRY. —Mr. CULVERWELL having been good enough to forward us flowers of his supposed hybrid Raspberry, we sent them to Dr. FOCKE, of Bremen, at once a great authority on Rubi and on hybridisation. Dr. the opportunity will repeat the experiment, and in due time record the result.

—— ACTION OF LIGHT ON GERMINATING SEEDS.—The general results of some experiments performed by M. CIESLAR, as recorded in a recent number of the Annales Agronomiques, are:—1. That the influence of light on germination varies according to the species; those of the Mistleto do not germinate without light; other seeds, such as Barley, Maize, &c., germinate indifferently in light or darkness, it growth of others, again, is promoted by light. It may be said, as a general rule, the small seeds with but little reserve-matter germinate better in light than in darkness, while the larger seeds, rich in reserve-matter, either grow better in light than in darkness, unlied the second section of the second s

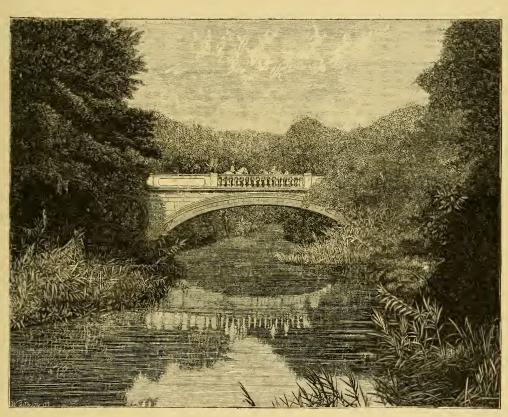


Fig. 149.—Charles Waddington's bridge in the New Public Park at Baroda. (See P. 800.)

Prince and Forman's Excelsior, is a finer fruit than the King of the Earlies, being much broader at the base, and of a closer, heavier texture, and is therefore likely to make a good sort to pack for transit to long distances. The flavour was not equal to that of some other kinds, but it is early, as it was ripe on June 10 in the open ground, and therefore of value in market or private gardens. If these early varieties are amenable to forcing for early fruit, they will be valuable additions to those we already have.

"FLORA ORIENTALIS."—We are pleased to be able to announce the issue of the concluding portion of M. Bolssier's Flora Orientalits, containing the Grasses, the Conifers, Ferns and allied orders. The value of this publication to horticulturists who are interested in the botanical history of the plants they cultivate is very great. The misprints in the present

FOCKE adheres to the opinion expressed by him last year from an inspection of the leaves only—viz., that the plant is a peculiar variety of the Raspherry, R. Ideus, which has been observed in various countries, and which has been koown under the varietal names of R. obtusifolius (WILLD.), R. anomalus (ARRHEN), and R. Leesii (BABINGTON). It agrees even in trilling peculiarities with a plant from Bromberg (E. Germany) which Dr. FOCKE has cultivated for many years. Dr. FOCKE altogether doubts its hybrid origin. On the other hand, Mr. CULVERWELL adheres to his statement that he has produced this plant by impregnating the flowers of the Raspherry with the pollen of the Strawberry, and states that in making the experiment he used due caution—as, indeed, so expert a hybridist might be expected to do. Further experiments are required, and we sincerely hope that Mr. CULVERWELL and others who have

or are indifferent; and in no case has a seed been found to grow better in the dark than in the light. 2. The action of the light is very complicated, as has been shown by experiments with light of various degrees of refrangibility. The yellow rays are favourable to germination, while the violet rays retard it, and even prevent it altogether at certain low temperatures. 3. The favourable influence of white light upon the growth of certain seeds is manifested chiefly by the higher vigour of the seeds so grown—Poa nemoralis, Agrostis stolonifera, Nicotiana macrophylla. Without doubt, further experiments would enlarge the list of these plants. 4. Very even germination under white light affords evidence in favour of the propitions influence of light to germination. 5. The germinative energy of small seeds seems to be augmented by the light. 6. In seeking the causes of the influence of light, it may be said—(a), that the light acts favour-

ably by its conversion into heat; (b), that the favourable effect of yellow light being granted, the acceleration of growth by light is a consequence of accelerated assimilation; (c), that light favours the germination and prosperity of young plants, by producing better root-growth, even in the case of small seeds.

—— STATICE ROSEA.—About forty years ago this very handsome and distinct Sea Lavender was figured in the Botanical Magazine under the name of S. rytidiphylla. It is a native of South Africa. The large calyx and corolla is a rich deep rose colour, and the small shortly stalked leaves clothe the upper parts of stems about a couple of feet in height. The species is now bloming at Kew in the Temperate-house.

THIGHNIUM LEUCOBOTRYS,—Like not a few of its allies in Sikkim, Nepal, &c., this pretty plant is epiphytal in a wild state, although in English gardens it submits readily enough to ordinary cultivation. It is an evergreen shrub, with rigid erect whorled branches and racemes of white flowers, followed by snowy-white berries. The species was first found by BOOTH growing upon Oaks among the Duppla Itilis in North-eastern Bengal, and was figured in the Botanical Magazine, t. 5103. The swollen base of the trunk, which forms so striking a feature in the wild plant, is not particularly developed in the plant now fruiting in the winter garden at Kew.

—— THE GOLDEN MEADOW SWEET.—Of the common Spirca Ulmaria there is a variegated form which is not uncommon in gardens, and which, when grown in somewhat poor soil, in order to prevent as far as possible its tendency to revert to the green-leaved type, is a decidedly handsome plant. The form, however, with self-coloured golden-yellow leaves is much more desirable, as it seems constant enough, and grows vigorously; the brightly coloured foliage being, during the earlier part of summer at any rate, very conspicuous amongst green-leaved herbaceous plants.

—— MECONOPSIS WALLICHII VAR. FUSCO-PURPUREA. — A form with dull brownish petals instead of the blue ones characteristic of the species. Botanical Magazine, t. 6760.

Aroid, with thick erect stems, long-stalked, with peltate, cordate, ovate, acute leaves. The peduocles are terete, slender, and bear a short, cylindrical spadix, invested by a large, oblong, recurved spathe, purple on the inner surface, yellow without. Botanical Magazine, t. 6762, June, 1884.

- THE HEALTH EXHIBITION: TEA .- This is so numerously represented by the growers themselves, in the case of Indian Teas, and by their agents, and also by importers and dealers in the article, that a few notes of the more original and more varied col-lections of the planters and their agents are all that we shall be enabled to notice at any length. In the Indian court on the west side of the buildings the District Association of the Kangra Valley has a very complete assortment of the herb, grown in the country in which the undertaking in question is established. It appears that there are between 300 and 400 different varieties, or perhaps more correctly speaking flavours, as flavour will vary more from soil, shelter, and altitude, and are more appreciable than any differences caused by variety, time of picking, or subsequent manipulation. Here are found about twelve distinct varieties of manufactured Tea from Kangra, placed in glass-covered boxes where it is possible to note such differences as form, size, and colour, the intelligent Hindu in charge being most obliging to answer any questions the visitor may put to him respecting them. There are also on view a portion of the trunk of a Tea shrub of about 4 inches in diameter, equalling therefore that of an old Gooseberry bush, say of twenty years; Tea seeds, photographs representing views in the district of Kangra, operations in the cultivation and manufacture, very English-looking square-towered churches, and dwellings in Sylhet, Cachar, and Assam. Taking out the mountains in the distant views, and substituting short-petticoated Irish garden-women for the semi-nude Kangraites, we might take some of the photographs to represent the regularly planted small fruit farms of Kent, so much, too, do the bushes resemble them. On this same stand are to be found a few samples

of Mysore, Tellicherry, and Nilgherry Coffees; and a case containing samples of Indigo from places far distant from each other, as Java, Oudh, Madras, Bombay, and Benares, and several with quite local appellations. Specimens of Tea growing in nots are also on view; these consist of the wild species of T. sinensis and T. viridis, T. assamica, as well as some hybrid forms possessing mostly creamy variegation on the leaf. Another Indian bazaar near this was tenanted by Hindu attendants, and an Englishman, Mr. BOWDEN. The construction and fittings are as completely Indian in appearance as materials, and a knowledge acquired by long residence in the country, can make them, the native women in their costume adding much to the idea desired to be conveyed. In this bazaar are samples of Teas of a more varied description than is seen at the Kangra stall, while the proprietor is an agent for those Teas generally that are produced on Indian soil. These are packed in airtight metal-like paper, but which is a true metal that can be soldered by merely passing a hot iron over the edges. As this is a bazaar proper it is only to be expected that we should find a varied and curious assortment of native wares, such as curries and what they are made of, pickles of the warmest, a preserve made from Physalis Alkekengi, the Cape berry, said to be superior to that of Guava, in its flavour and aroma are less evanescent and more delicious; Trinchinopoly eigars made from a Tobacco called Lank; Peppers to stimulate the flagging appetite; and Indian toys for bahies brown and white, whose colours are as fast as their own, for they cannot be licked off-an advantage not to be overlooked by owners of infants. Coloured models of Indian fruits of many species form an interesting portion of the items seen at this stall, and we must not forget the toddy gatherer and his wife. As this intoxicating liquid is made from the juice of the fruit-stalk of Borassus flabelliformis, a species of Palm that attains a beight of 70-100 feet, it is necessary, to get the "basis," to climb the tree to the top, where the long bunches of fruit hang. These fruits are of the size of medium Oranges, and it is from their foot-stalk that the liquid slowly drips. A fruit is cut off and a jug hung on to catch the juice, so that there may be several hanging on one bunch. These have to be placed in position in the early morning and removed in the evening, so that our toddytapper bas quite enough on his hands when he bas ten or a dozen Borassuses on draught. His wife, of course, carries the jars and he does the climbing business, which is done by means of a strap round his waist and by fastening his feet near the ankles with another, so that by leaning back against the waiststrap, his feet being placed against the stem, he can ascend by a series of jerks,

ECHIUM ARBOREUM. — Imagine our native Viper's Bugloss (Echium vulgare) with a stem as thick as the wrist and a much branched head 6 or 8 feet high and as much through it, and a fair idea of this singular plant will be obtained. Just now there is a good specimen in bloom in the Winter Garden at Kew. We believe the exact history of the Kew plant is not known with certainty; it appears, however, to be very near the Echium simplex from Tenerifie, as shown in picture No. 23 in the "North" Gallery at Kew.

—— MELALEUCA WILSONI,—Amongst the showiest members of a brilliant flora some of the Melaleucas certainly can claim a place. Above a hundred
species are knowe, by far the larger number of which,
however, are not in cultivation. A group of Melaleucas from New South Wales will be found represented in picture No. 97 in the "North" Gallery,
M. Wilsoni was raised at Kew from seeds sent home
by Baron von MUELLER, and a figure of the species
appeared in the Botanical Magazine, t. 6131. It is a
dry country species, and is very conspicuous with its
dense clusters of flowers with their bright rose-red
stamens. A nice plant is now in bloom in the Winter
Gruden at Kew.

— A BOTANIC GARDEN FOR JERSEY,— The "Gradener temarks that much of the experimental work in connection with economic and medicinal plants, carried on at Kew, must be done under great difficulties, on account of the climate, and asks the pertinent question—" Could they not establish a supplementary garden in Jersey wherein to grow many of the things that will not stand out at Kew?

The Cinchonas, the Guns, the Teas, and many tropical fruits would grow here in favourably selected spots without artificial covering winter or summer, and much of the work in connection with the raising and studying of useful plants and their introduction from one of our colonies to another, now carried on at Kew, might be much facilitated by the establishment of a botanic garden in Jersey worked in connection with and under the same authority as Kew."

--- TURNING PLANTS OUT-OF-DOORS,-Now is the time when many gardeners will be thinking of turning out pot-plants into the open air, with a view to the growth they make possessing more substance and strength than if the plants were kept indoors altogether. The practice is an old one, and correct in principle as regards many things which are being benefited thereby, but it is often carried out without sufficient discrimination as to the plants so exposed, and equally so in the time chosen for putting them out; for instance, how often may be seen Azaleas that have not been forced early, but that have been subjected to warmer treatment to bring them into flower about March, or the early part of April, turned out-of-doors by the end of May, when all their young growth is not half developed, with the shoots and leaves as soft and tender as they can be, the result of which is that they receive so severe n check by the sudden change, that although under such treatment they will set flower-buds freely enough generally, but the flowers forthcoming the following spring are small and often ill-formed compared with what they would have been had the plants been kept indoors until the wood was matured and the buds visible. In the case of plants that bave been forced early, and consequently bave had more time after blooming to make growth, they do not suffer in the same way, but even with them it is better to have the buds formed before standing them out, With Azaleas that have been kept back so as to bloom late, and consequently make their growth correspondingly late, they are better kept under glass altogether. Epacrises are benefited by exposure to the open air; the effect it has on them is to cause the production of more flowers than would he possible if the plants were kept altogether under glass, but the time they are required to come into bloom should be taken into account in deciding when they are stood out, as they generally set their flowers at once, however early in the summer they are exposed, consequently where a succession of bloom is wanted over as long a period of the winter and spring as obtainable, a portion of the stock should be put out at two or three different times, from midsummer to the beginning of August. santhes, which are so useful for greenhouse decoration, especially the high-coloured varieties, can never be depended on to flower as they should do without a long season of exposure in the full sun; when strong shoots of these plants fail to flower it may all but invariably be set down to being stood out too late. They should always be fully exposed from midsummer until there is danger of frost, old yellow Erica, E. depressa, will rarely bloom satisfactorily unless it is out in the full sun from the middle of June, or earlier, until the end of September. Acacias flower freer, especially when the plants are young and comparatively small, in which condition they are the most useful for forcing, if they have a good roasting with the sun out-of-doors, particularly the old A. armata, still one of the bestit should be out by the beginning of July. Genistas require to be out about the same time, and both may remain until in danger from frost. Neriums, which are amongst the most desirable stock that can be grown, should be in the full sun out-of-doors from midsummer till autumn, or there is no dependence on their flowering. The elegant habited Aotus gracillima, all the Boronias, the different varieties of Chorozema, Clianthus puniceus, Mitraria coccinea, and Myrtles should all be outside during July and up to the middle or end of September. All the above are most desirable for ordinary decorative use, even where there is no attempt at growing much in the way of hard-wooded plants.

— ESCALLONIA PHILIPPIANA.—On the outside wall of the Economic-bouse at New is a healthy young specimen of this species in flower. A description and a short history of it is given in the Gardeners' Chronicle for 1873, p. 947. It has also been described under the name of E. angustifolia, or as a variety of

E. virgata; but for horticultural purposes this is a matter of secondary importance. The small white flowers resemble those of the Hawthorn both in size, colour, and smell; while at the same time the spreading petals are altogether misleading to those who are familiar only with such species as E. macrantha and E. illinita, the petals of which stand erect and form a pseudo-tubular corolla. Its introduction from Valdivia, in Chili, somewhat north of the latitude from whence we had E. macrantha; as guarantee of its hardiness and suitability for our climate. The flowers are produced singly from the axils of the leaves along the small lateral shoots, and would be very useful as cut flowers, to mix with others, on account of their Hawthorn fragrance.

— Rose, TRIOMPHE DE L'ENTOSITION.—A robust Rose, with stout straight prickles, dark foliage and large full crimson flowers. Raised by M. MAR-GOTTIN in 1855, and figured in the May number of the Journal des Roses.

— CLIVIA LINDENI.—A small but healthy specimen of this having flowered in the Palm-house at Kew, gives an opportunity of determining its value botanically or horticulturally. It seems to be intermediate between C. miniata and C. nobilis. With respect (to the leaves, they are very robust and suddenly narrowed to a short point, whereas in C. nobilis they are truncate, and in C. miniata drawn out into a long tapering point. The flowers are large, of a deep orange-scarlet colour, with a white tube slightly splashed with orange, and are conspicuous by the great breadth of the inner segments of the perianth. They are decidedly of the C. miniata type, and present a totally different appearance from those of C. cytanthiflora, a hybrid conforming to C. nobilis in the flowers.

—— CHRYSANTHEMUM SEGETUM. — Gardeners will find this an excellent plant to cut from during the summer. It is common in the fields is some districts, and if a few plants be lifted, placed in a good loamy soil, and attended to until they are established, they will be found to produce a great number of flowers. The act of cutting induces the plants to throw out more flowers, and thus a very acceptable succession is provided. It is, unfortunately, a plant of rather straggling and uncouth growth, and needs to be associated with something else to give a little support to the branches.

—— ISMENE ANDREANA.—A greenhouse bulbous plant, introduced by M. ANDRÉ from Columbia. The white flowers are like those of Hymenocallis, with very narrow white segments and very large staminal tube or cup.

—— LYSIMACHIA NUMMULARIA AUREA.—If the common green-leaved type of this plant were rare or difficult to grow, it would in all probability attract more attention. Few plants require less care, and would better repay the cultivator for a small space in some damp spot in the herbaceous border. Perhaps the species is seen best in windows, where its long shoots, laden with large golden-yellow flowers, are allowed to fall over the sides of the pots or boxes in which it is planted. The variety named at the common Creeping Jenny in its golden-coloured leaves; as a companion to the other it is thoroughly worthy of a place in any collection of hardy herbaceous plants.

LINARIA HEFATICÆFOLIA.—In spite of its small size — it makes a dense mat of tiny leaves studded with purple flowers, and hardly attains more than an inch or two in height—this is rather a showy and desirable plant. It makes an admirable plant to cover ground occupied by spring flowering bulbs, and in places where it is not killed by too much moisture it is quite able to take care of itself. This and the charming little Arenaria balearica, with its star-like pure white flowers, are well worth a place in every reckery.

—— RHODODENDRON FORTUNEI.—In the Rhodon-dendron Dell at Kew there has lately been in fine flower a large specimen of this handsome species. It was found by FORTUNE on mountains, at 3000 feet elevation, in the Chinese province of Chekiang, and from seeds sent home by him were raised the plants from which LINDLEY first described the species. Both in foliage and foral characters it comes somewhat pear

the Himalayan R. Ancklandii, so frequently noted in these columns, but differs markedly in colour. The corolla is seven-cleft, shortly campanulate in form, and of a fine pale rose colour. The fragrance, too, is different from that of most other Rhododendrons, reminding one strongly of cinnamon. A good figure is given in the Botanical Magacine, t. 5596.

- THE SCHOOL OF HORTICULTURE OF VIL-VORDE.-A short time since we had occasion to notice the large model in relief of this establishment now to be seen at the Health Exhibition. Our Brussels correspondent tells us that the Count and Countess of FLANDERS lately paid a visit to the school and spent two hours in examining the orchard, the kitchen garden, the stoves, the fruit garden, &c. The collection of fruit trees is the richest in Belgium, containing powards of 1600 varieties of Pears, 600 sorts of Apples, 200 of Peaches, &c. Eight hundred varieties of kitchen and market garden plants are grown for examination and comparison, the director, M. GILLEKENS, attaching much importance to the development of market gardening as a partial remedy for the depressed state of agriculture, which seems to be as much felt in Belgium as here. A training school is attached to the garden.

- WILLESDEN PAPER .- This material, obtained by treating paper in a solution of cupro-ammonium (copper salts with ammonia), is now coming into use for a variety of purposes, and may be recommended for the roofing of sheds, Mushroom-houses, summerhouses, and garden structures generally. alters the character of the cellulose of the paper, converting it into a kind of cement, which is impermeable to water, and binds the fibres of the paper together, thus preserving them. Insects and mildew find no favourable resting-place in paper so treated, so that the material is remarkably durable. Willesden, "4-ply" is the best adapted for roofing material, and we believe is cheaper than galvanised iron, and has the non-conducting power of felt. It requires no painting nor application of pitch. various descriptions of the paper, which may be used for a great variety of purposes. We confine purselves to what we have purselves observed.

- THE WEATHER. -General remarks on the temperature, rainfall, and duration of bright sunshine, for agricultural and sanitary purposes, during the week ending June 16, 1884, issued by the Meteorological Office, 116, Victoria Street, London, S.W.: -The weather has continued unsettled and rainy in the extreme north of Scotland, but in all other parts of the kingdom it has been fine and dry. perature has been slightly above the mean in "Scotland, E.," and about equal to its normal value in "England, N.E.," but in all other districts it has varied from 1° to 2° below. The maxima, which were recorded on the 13th, were as high as 83° in the "Midland Counties," 80° in "England, N.E.," and "England, E.," and 79° in "England, S." In the "Channel Islands," however, the highest reading was 67°, while in "Scotland, N.," the thermometer only rose to 56°. The minima were generally registered on the 10th, and were rather low. In the "Midland Counties" the temperature fell to 35° in "England, S.W.," to 37° in the north and west of Scotland, and in the south of Ireland to 38°, and in most other districts to between 40° and 43°. The rainfall has been a little more than the mean in "Scotland, N.," but considerably less elsewhere. Bright sunshine shows a decrease in duration over the extreme north of Scotland, but in all other districts there has been a decided increase. The percentage of the possible duration varied from 60 in the "Channel Islands" and 55 in "England, S.W.," to 24 in "Ireland, N.," and 16 in "Scotland, N." Depressions observed.-Pressure was generally high and rather uniform in the west and south of our islands and the north and west of France, and comparatively low in the northern and easterly parts of our area, where some extensive but not deep depressions were observed. Moderate S.W. to W. winds prevailed during the earlier part of the period, but alterwards N.W., N., and N.N.E. breezes became general, with cooler weather,

—— GARDENING APPOINTMENTS.—Mr. THOMAS RICHARDS, late Foreman at Davenham Bank, Malvern, as Gardener to Lord TEMPLEMORE, Preston Condover, Basingstoke, Hanls.

The Herbageous Horden.

VARIETIES OF NARCISSUS POETICUS.-Now that the flowering season of this plant is over, it may be of some use to gardeners to mention those varieties which have merit as well as distinctive characters. Of a large number which have been sent to me under many names, and as natives of many countries, I select six of the best. The earliest—and its earliness is its chief merit-is the variety angustifolius, a thin flower, but at least a month earlier than the common typical The second in time is ornatus, with a broad flat flower, and is very good and ornamental, filling the space of time between angustifolius and Contemporary with it, and like it in form but much larger in size, is the variety grandiflorus, the finest of all the section, but rare and slow of increase. The fourth in order is what most people call typical N. poeticus, but in some bulb catalogues it is called recurvus, from its habit of reflexing its petals. It is by far the commonest single form in gardens, and wherever in England the Poet's Narcissus is naturalised this is the form. The fifth, and smallest, is that described by Herbert by the name verban-ensis. It is a neat, diminutive flower, quite distinct, and a native of Italy. The sixth, and last, is the double form. I have been asked by many correspondents, whether there is any difference in kind between those which in doubling entirely lose the orange-tipped segments of the crown, and those which retain them. I believe this difference is accidental, and I find the two forms often mixed together. As for the var. patellaris, I am quite willing to leave it alone, to make its way on its own merits; and though I am said to be incapable of distinguishing a spade from a shovel, I shall always call a spade a spade, even at the risk of offending those whose flowers I criticise. C. Wolley Dod, Edge Hall, June 14.

AQUILEGIA GLANDULOSA,—Messrs. Morrison, of the Elgin Nurseries, bave sent me a box of flowers of A. glandulosa as fine as any I ever saw from Forres, The stalks are branched, each bearing several flowers, and many of them, as sent, are 18 inches high. Elgin and Forres we know are in the same county, and it would be interesting to enquire what conditions the plant finds there especially suited to it. On looking at the rain map it will be seen that the rainfall of the north of Morayshire is exceptionally small, and this Columbine is certainly very impatient of wet in winter. C. Wolley Dod, Edge Hall, Malfas. [The Messrs. Morrison have also favoured us with a fine sample of this beautiful plant. Ed.]

NARCISSUS POETICUS PATELLARIS (see Gardeners' Chronicle, p. 770): N. P., recurvus, the drooping leaved Saffron Riun, not Saffron Sun.—I am about to look into the N. poeticus var. with the view of adjusting the section, and distinguishing the May flowering sorts. I have cleared up the early flowering except spatulatus, and albus, "Haworth." Herbert, who knew Narcissus indifferently, says he did not know ornatus, albus or spatulatus. The first I cleared up some years hack, and may clear up the other two; so when stray roots come in the way of your readest let them not forget me, as I this year set aside a bed or poeticus only. This season I had a poeticus in my grounds: for weeks belore the flower opened there was a little bladder-like spathe on each plant, and when the flower broke through its cell I was reminded of bygone days when a sweep's head emerged from the chimney cowl as proof he had traversed the devious paths of flue-life. P. Barr, Covent Garden.

KNIPHOFIA ROOPERI.—Amongst the occupants of the herbaceous border few are more stately or attractive from a distance than the members of this genus, and certainly none can compete with them in the dull autumo days, when brightly coloured and showy flowers are few or almost absent. This species resembles to some extent the old and well know o K. aloides, otherwise known as Tritoma uvaria, and almost universal in British gardens. K. Rooperi, however, has shorter heads of paler coloured flowers, which differ somewhat in shape from those of the other. Its time of flowering also differs from most of the others in cultivation in being either very late or very early. In mild winters it often persists in throwing up flower-stems, which, however, never become very showy owing to the deficiency of sunshine. It has been flowering for some time on the new rockery at Kew, and there is a figure of it in the Botanical Magazine, t. 6116.

FRUIT NOTES.

PEAR CULTURE IN JERSEY. - The Royal Jersey Horticultural Society has published a list of sorts found, from experience, suitable for culture in Jersey, with their time of ripening. These are as follows :-

Chaumontel, November and December.
 Glou Morceau (west wall), December and January.
 Doyende du Comice, November and December.
 Marie Louise ffree stock, south-west wall), September and

3. Doyeané du Comice, November and December,
4. Marie Louise ffree stock, south-west wall), September and
Gelober.
5. Locale de Manile, September and October.
6. Beurré d'Amanlis, September,
7. Josephine de Malines (wall), January and February.
7. Doyeané d'Hiver, or Bergamotte de la Pentecôte, February and Marchi.
6. Van Mons. Leon le Clerc (free stock, wall), October and November.
7. Van Mons. Leon le Clerc (free stock, wall), October and November.
7. Maréchal de la Cour, October and February.
7. Souvenir du Congrès, September.
7. Bergamotte d'Esperen, March.
7. Bergamotte d'Esperen, March.
7. Bergamotte d'Esperen, March.
7. De Tongres, October.
7. Crasanne fsouth wall), November,
7. Leon de South wall), November,
7. Doyenné Boussoch, September.
7. Anapoléon (free stock), September.
7. Gansell's Bergamotte, October.
7. Juses Colmar (wall), December and January.
7. Jules d'Autielles wall), January,
7. Jules d'Autielles wall), Janua

Passe Colmar (wall), December a
 Jargonelle, August.
 Jules d'Auriolles (wall), January.

The first six are considered the best, and these are probably the most suitable for market work : Nos. 1 and 3, when well grown as stated above, meet with a ready sale, at from £2 10s. to £5 a hundred; No. 3 is rapidly rising in public estimation, and last season fetched a much higher price than the Chaumontel; Marie Louise, under good cultivation here, will reach 13 or 14 oz. in weight, and then meet with a ready sale, as it is never coarse whatever its size; Louise Bonne of Jersey is not a large fruit, but the tree is a good bearer; Beurré Diel is also good oo the same account, and its fruit is one of the finest, often reaching 14 to 16 oz. Again, Duchesse d'Angoulême is a fine large fruit, though it is not in the above list, from which it has been excluded on account of its being a rather uncertain setter: when it does set it carries good fruit, as a bush in the open ground, but, like most of the other popular sorts, the largest are from walls. Gersey Gardener

THE APPLE TRADE IN NOVA SCOTIA .- Two years ago last fall the first ocean steamer came to the port of Annapolis for a cargo of Apples, and some 50,000 barrels were sent to the English market. What has been the effect of this? We have now buyers from Glasgow and Liverpool who pay us 4 dol. a barrel for our Apples at our own doors. There is another most important requisite in this trade, and that is, to have proper warehouses in which to store the fruit, as well as proper steamers in which to carry it. Some grades of our Apples have sold in the London market at from 35s. to 38s. sterling a barrel. That was the effect of their being first carefully stored and then properly carried across the ocean. It was at first supposed that any steamers would answer to carry We, therefore, employed transient boats at a low freight; the result was that the fruit was landed in a poor condition, and brought ruinous prices. ten days' storage in a heated and unventilated hold had seriously injured the fruit. It had become wilted from the high temperature in the hold of the vessel. Heat injures fruit more than frost. Even frozen Apples can be brought back to their original condition by carefully removing the frost, but if they have been wilted by heat they can never be restored. Apples cannot be taken out of a cold, damp temperature and deposited in a ship's hold or anywhere else where the thermometer stands at 55°, without being spoiled. We found then that ordinary steamers are not suitable for the Apple trade, but that we must confine our Apple export business to special freighters. We also ascertained that the fruit must be stored in a dark damp place, with a temperature of not over 30°, and not less than 28°. Apples will not freeze even at a temperature of 25°, but with a temperature below that there is a little danger of frost. That has been the result of our experience. Apples are an article of commerce that vary in price. There is sometimes a difference of from 2 dol. to 3 dol. a barrel, caused solely from the fruit not being properly carried across the sea. In Annapolis a company has been started which is only in its infancy. We have a prospect of exporting not merely 50,000, but 300,000 or 400,000

barrels a year, and we have the market within ten days of us. In some parts of Annapolis County you can almost shake the Apples from the trees into the steamer. England imports annually from 4,000,000 to 5,000,000 barrels of Apples, London alone importing 1,500,000. The exports from America to England in 1880-1 were 1,250,000 barrels in each year. Until last year Nova Scotia was not known in England in the Apple trade. Until within a short period all Apples from this side of the Atlantic were called American Apples. After a little while two classes were recognised, American and Canadian; at last Nova Scotian Apples became recognised as a distinct class. The classes stood-American first, Canadian second, and Nova Scotian third. Now this order is reversed-the Nova Scotian Apples are recognised as the first-class, Canadian second, and American third. All this has been done within the last two years. From the "Transactions of the Fruit Growers' Association of Nova Scotia."

MELONS.

OWING to the facility with which Melon blooms can be cross-fertilised, we find this fruit to be, like Cucumbers, exceedingly fertile in the production of new varieties; but, like Cucumbers also, Melons in all the diverse kinds produced are unable to exhibit any material divergence in the form and character of foliage or flower, and only very little in the character or appearance of fruit, hence the exceeding difficulty which exists in determining how far one assumed new kind may or may not differ from another. Perhaps it is to this incapacity to exhibit variation in ordinary features that we find in Melons so little divergence in colour, flavour, or character of the fruit. It would be of exceeding interest to be enabled now to compare with the best acknowledged Melons of the day the best of twenty or more years since, for gardeners then prided themselves that they produced first-rate fruits. It seems to be the misfortune, even of the best of kinds, that it can never be relied upon to produce fruits equal to its assumed merits at any time, and it is more than likely that out of a dozen of any one sort not more than two or three will be high-class. Have we not bred our Melons up to their very highest pitch of excellence ?-indeed, if we have made so little progress during the past several years in the production of quality, it would seem obvious that, with our present garden race, a point has been reached beyond which it is not easy to pass. What will our Melon breeders say to a proposal to hark back, as it were, to some new and distinct breeds?—new so far, of course, that they have not been utilised in this country, and through the instrumentality of which it is just possible some genuine and desirable novelties may be produced. We have now all that can be desired in form, size, and beauty, and there is little fault to find on the score of productiveness. Our chief want is richer flavour, something more than mawkish sweetness, or mere sugar and water. Who will strike out a new path in Melon productiveness?

ALPINE PINKS.

It is a thankless office to tell either nurserymen or amateurs that the names on their plant-labels are wrong; and yet a recent study of the plates in the European Flora of Reichenbach, who is, I believe, the best authority on the alpine Pinks, has convinced me that very few of those we see in gardens would have the names under which they pass sanctioned by good botanists. The geous Dianthus presents a formidable array of more than 200 names, and as many as seventy species are recognised in the Genera Plantarum; but perhaps not more than one-fourth of these could fairly be called alpine Pinks, however difficult it may be to fix the limits of this title. will be well to take D. alpinus of Linnæus, figured in vol. xxx. of the Botanical Magazine, t. 1205, as the type of alpine Pinks, and to say that the more nearly they approach to this standard the better their right to be included in the class. Nursery catalogues of alpine plants enumerate generally from twenty to thirty species of Dianthus, but these include many with aggregate or bunched flowers, more resembling little Sweet Williams, and not possessing anything like the merit, as rockery ornaments, of the class of which I am speaking. Single dwarf hybrids of the common garden Pink, D. plumarius, are also very frequent, and though many of them are pretty and neat, they make the distinction of the true species all the more difficult. But I am speaking as a gardener; and to gardeners it is less important that flowers should be true to their botanical name than that they should be good.

The best three mountain Pinks commonly to be found in alpine catalogues are named respectively D. alpinus, D. glacialis, and D. neglectus. Nothing bad is likely to be sold under any of these three names, even if they are not botanically true to species. The earliest to flower and the best I have, I first bought in the nursery of Mr. R. Parker, of Tooting, by the name of D. neglectus. Finding that Messrs, Backhouse sent out the same under the name of D. glacialis I have grown it for five years by the latter name, but it is certainly not the D. glacialis of Reichenbach, but a much better plant. It grows in a compact tuft, with dark green, obtuse leaves half an inch long, and bears a profusion of flowers on single stalks, about 2 inches high when flowering, growing to 3 inches afterwards. Sometimes there are two, rarely three flowers on a stalk: the colour is rosy-pink, and the diameter of the flower exactly an inch. It is generally in flower by the middle of April, and on Juoe 14 there are still several flowers left. On a plant the size of the palm of my hand I have had sixty flowers open at a time, overlapping one another, and at its best it is always the gem of the rockery. The capsules swell and harden and open in due course, but I have never found a seed in them. I am disposed to think it is a natural hybrid between D. glacialis and D. alpinus. I am now sending it to Kew for the second time to try to get a name for it. D. glacialis of Reichenbach has smaller flowers, sparingly produced, and always more or less covered by the long stalk-leaves. Mr. E. G. Loder has sent it me several times from the Alps in a letter, wrapped only in wax paper-the best way I find of sending small plants. These have lived unbappily for a year, but never got over their transplanting. Last year, however, I found six seeds on one of them when it came, from which I have grown six healthy plants which I hope to establish. The true typical D. alpinus—I have grown it from seeds collected in the Alps—has dark green shining leaves spread horizontally, half an inch long, broader than those of kindred kinds, and large flowers 11 inch across, with broad overlapping petals. The colour is purple-pink, with darker marks at the base of the petals. The flower-stalk, in the best type, is so short that the flowers seem to rest on the leaves, but in some varieties the stalk is longer. The first flowers appear about the end of May, six weeks later than those of the Pink I first described. This plant rarely ripens a seed in my garden. What I believe to be true D. neglectus in my garden. What I believe to be true D. neglectus according to Reichenbach's figure, has flowers as large as those of D. alpinus, but lighter in colour, and having narrower petals, which leave a space between when spread. The flower-stalks, which often bear two flowers, are not more than an inch high; the leaves are more acute, less shining, and more upright than those of D. alpinus. It flowers at the same time as that species, and often ripens seed,

Another very good variety came to me as D. neglectus. The flower-stalks are quite as long as in the type, the flowers smaller, more plentiful and more uniform in colour, which is deep bright pink. This variety ripens seed plentifully. It seems to me to answer to D. nitidus of Reichenbach, which is quite different from the bunch-flowered Pink called D. nitidus by older botanists. Omittiog two or three similar varieties or natural hybrids of this class, I must notice the two only native perennial species of Pink. The one, D. deltoides, the Maiden Pink, does not belong exclusively to rocks or mountains: but the abundance of its bright pink flowers, and the ease with which it is cultivated, make it a desirable plant for rock gardens; there is also a pretty white flowered variety with a pink eye nearly as common.

The other, D. cæsius, the Cheddar Pink, is an alpine of alpines, being found only on bare and dry exposed rocks. From the figures in Reichenbach the species seems variable both in size and shape of flower, but I have never possessed the true native plant from Somersetshire, of which seeds or cuttings would be gladly welcomed here. It is useless to give a list of species, many of which could not be obtained true, or might be found inferior to hybrids, which have perhaps usurped their names. My advice to those who wish to cultivate alpine Pinks is to buy what they see that is good, and not to be too curious about the name of it, which is a matter that can be

investigated afterwards at leisure. But two more species, which seem to be common in cultivation, may be mentioned-D. fragrans and D. petræus. probable that both of these have had a share in producing some of the garden varieties of Pink generally referred to D. plumarius. They are neat, free-flower ing plants, from white to pale pink, and the two are liable to be confused. The smallest double Pink I have seen is generally referred to D. petræus. Imagine a pure white Jasmine flower with jagged edges, and doubled to a ball, without losing any of its fragrance, and that is the plant. I have distributed it freely for two or three years, as it is too good not to be in general cultivation, but the only single Pink I have seen with the true Jasmine scent was a white one bearing the name "fragrans," so I am disposed to call the double one by the same name. All these kinds seem very ready to form hybrids, and many have been made both naturally and artificially, yet much remains to be done. A plant with the habit of D. alpinus and the colour of D. cruentus would be a great acquisition. Something should be said of cultivation.

selected. C. Wolley Dod. Edge Hall, Malbar. [We supplement our correspondent's remarks with an illustration (fig. 150) of Dianthus glacialis, prepared from a specimen kindly sent to us by Messrs. Backhouse, ED.]

Çhe Kosery.

ROSE PROSPECTS.—The "Time of Roses" is now fast approaching, indeed all say is already upon us; "this warm sunny weather" is fast developing their beauties, already do Belle Lyonnaise, Gloire de Dijon, Bouquet d'Or, Rève d'Or, Climbing Devoniensis, &c., lavish their beauties on our walls, and day after day an unlooked for beauty shows us a lovely Tea, or an early bloom of a H. Williams, and schedules of Rose shows pour in upon us, and on all sides preparations are being made for the coming struggles, and as usual comes the question, What are our prospects for the season? I may claim some little right to pronounce an opinion, although I have visited, perhaps,



FIG. 150 .- DIANTHUS GLACIALIS, HORT. BACKHOUSE: FLOWERS ROSE-COLOURED.

We are often told that alpine Pinks are easily cultivated, and there may be favoured soils where they may be left alone for a long time, and do well. But a raised rockery greatly helps the conditions under which they like to grow; and in such ground as mine it would be hopeless to attempt them without artificial soil. Something which the roots can easily penetrate, and which allows wet to pass readily downwards, but prevents its passage upwards, is good for them. I find cocoa-nut fibre, broken limestone the size of wheat (granite might be equally good if a little powdered mortar were added), coarse sea-sand, fine loam and peat soil, in equal parts, a good mixture. A foot deep of this will grown any alpine Pink well; but soil which becomes hard and cakes does not suit them. They root deeply, and like rough stones to root amongst. Wireworms under ground, and slugs, and short-tailed field-mice above are their worse enemies. I generally put a perforated zinc collar round them till established. Seed, when it can be obtained, is the best mode of increasing them; but cuttings are not difficult to strike in silver-sand under a hand-light, care being taken to avoid keeping them too wet. Some of the kinds root readily if pegged down into sand and peat. In the cultivation of all of them overgrowth and shade must be avoided, and the most exposed situations

not so many gardens as usual, but they have been in various parts of the country, and my conviction is that unless something very untoward happen, we are likely to have one of the very best Rose seasons that we have had for many years. Of course one hears complaints, but they are fewer than I ever recollect. The mild winter at one time seemed as if it would militate against success; the plants grew and kept green'; they were in February and March so forward that blooming buds were formed at the end of the shoots, and two-thirds of the eyes had started ; and it seemed almost too much to have to cut all this away, but it had to be done, and soon instead of the flowing canvas our Roses were "running under bare poles. It was marvellous what they did in a short time and in good Rose soil the growth has been very rapid and strong. The best examples of growth that I have seen have been in Cheshire in the gardens of Mr. Tinsley, Grappenhall Lodge, and Mr. T. B. Hall, of Larchwood, Rockferry; nothing could possibly surpass the vigour and beauty of the plants, but then besides the care and attention bestowed on them, especially by Mr. Hall, what soil it is 1-that rich deep unctuous loam in which the Rose especially delights and which goes down any depth you like. In Mr. Tinsley's garden I saw plants of Charles Lefebvre on its own roots, which had shoots that would, I venture to say, before the season was out, be 8 or 10 leet high. In such soils dry weather is not a serious matter. The roots have gone far and wide in search of food, have got it, and flourish accordingly. It is on light soils such as mine that the trial comes in such seasons. We have sighed for rain, but it comes not, and hence watering must be largely resorted to, and this not, as I have said, for exhibition purposes—for I do not exhibit—but for the wellbeing of the Rose itself. In such a season mulching is very valuable, but it is very untidy, especially as I am here surrounded with blackbirds, thrushes, &c., for whom it is a free hunting ground, and, therefore, I do not use it until the autumn. I once did it when a relative was coming to see me whose nose was very sensitive to. smells, and as there was a good deal from the pigstye in it, it nearly drove her out of the garden.

I have already seen some Roses of interest. Souvenir de Thérèse Levet promises to be the best of the late Teas. It is very free-flowering, and likely to be very useful. Etoile de Lyon, which some have regarded as not equalling, far less surpassing, Perle des Jardins, is likely to be a good beat on that variety. I have already seen it very fine, and the weather we are now getting is very favourable for all such Roses.

As far as the success, then, of exhibitions is concerned everything looks well up to the present time, but all will depend on the character of the weather for the next three weeks. "Hope springs eternal," &c., and although hopes may have been disappointed in years past it may be this season they will be fully realised. Wild Rose.

P.S.—Since the above was written I have seen and heard of a terrible visitation of honeydew, mildew, and aphides, consequent on the cold east winds, which will in many cases quite alter our prospects. Wild Rose,

THE FLOWER-STALKS OF ROSES .- Every rosarian is familiar with the fact that the Maréchal Niel Rose has a specially slender and brittle flower-stem; so much is this the case, that the Rose is often broken off short by the merest twist or change of position: not a few have also marvelled much that the slender branchlet could convey sufficient food to the enormous golden masses of petals that crown or ter-minate them, for the Maréchal Niel is pre-eminently distinguished by substance as well as size and number of petals. With the single exception of Paul Néron, it is probably the largest Rose, though rumours are rife of rivals to both in this respect. Still, for substance, size, and number of flowers, it is difficult to match, perhaps impossible to beat, the Maréchal Niel; and were the flowers weighed no Rose could be found to match it in the gross weight of its rich harvest of bloom. The weight of the individual flowers of the Maréchal Niel Rose would seem incredible were we not so familiar with it. And all this substance, odour, colour, is conveyed along a passage so narrow and so weak that a block or break-down seems inevitable at any moment.

More wonderful still, those buds that have the weakest stems and which bend their necks to the burden the most, seem invariably to produce the finest flowers. I cut several to-day, and in every case the flowers that drooped the most, so as to depend like a bell to such an extent that the blooms bent back and formed a right angle with the growing stems, were the finest, alike in size, form, substance, and colour—the weight of the flowers being seemingly a factor of considerable potency in their development to such abnormal dimensions.

In some correspondence I had the honour of holding with the late Charles Darwin in regard to the attractive power of Grapes and other fruit, that great naturalist appeared to endorse this view-that the mere weight of the produce was one means of ensuring a plentiful supply of food. There can be little doubt but that this is so in the case of Grapes and most other fruits, notably Melons, Cucumbers, &c. And now it is assuredly a case in strong support of similar views that our weakest-necked Rose is also our most massive one, and characterised by a maximum of substance in the petals; and more than this, that the finest flowers are, as a rule, those that droop the most. The drooping may of course be explained on other grounds, and may be held to take place after the special development has taken place. In a word, the Roses may be said to droop because they are fine, and not to become fine by reason of their drooping. Experience and observation, however, by no means confirm this view. Were this so the blooms on the strongest, thickest branchlets that never droop would be the finest. It might also be affirmed that the flowers enlarge by their partial or complete inversion, not by virtue of their weight, but through their change of position. It is a fact, that not a few Roses, especially of those difficult to open, such as Miss Ingram, Madame Lacharme, and several others, may be improved in form, and apparently enlarged in size by being partially or tied down. The petals unfold more determinedly, as it were, the form is somewhat modified, and the bloom may be enlarged. But this special effort of Nature seems different alike in its cause and its results to that seen so frequently-almost invariablyin the drooping buds of the Marcchal Niel Rose. Niphetos grown under glass, trained some distance from the roof, at times developes a similar tendency, though nothing to the extent of the Maréchal Niel; and I trust rosarian observers and vegetable physiologists will give us their opinion, and while about it will also say whether they can throw any new light on the huge warts on the stems that cut short the career of so many Maréchal Niel Roses alike on their own roots and on stocks of all sorts and sizes. Can it be that there is any correlation between the brittleness and weakness of the Rose necks of the Marechal, and those cankerous swellings that prove so fatal to this magnificent Rose? This is hardly likely, and these gropings after, rather than guesses at truth, are offered for what they are worth. D. T.

MILDEW ON ROSES: THE REMEDY .- I have been reading the interesting notes of "Wild Rose on this subject, and am tempted to add a few observations. Some Roses are undoubtedly more subject to it than others. Miss Hassard does not succeed with me, nor, so far as I am aware, in any of the Rose gardens around, though grown under diverse circumstances of soil, situation, and treatment. My limited stock in the open has a southern slope and full exposure, and I never notice mildew, with one exception. The soil sometimes carted from the farm is firm tenacious clay, and very liable to get as firm as iron. When this happens—and excessive rain or watering, followed by a spell of dry weather such as we have been lately experiencing, induces such-death, with mildew as an accessory, frequently results before the real cause can be determined, or before a busy man can notice it. If any one cause superinduce mildew, I should say it is the fierce "north-easter; but too frequently there are concomitant assistants A fortnight since I had most promising specimens of Triomphe de Rennes, Marie Ducher, Beauty of Staplesord, Niphetos, Céline Forestier, &c., in pots. The pots were not large, so I was giving them an occasional dose of artificial manure. The growth was thus forced and tender, though grown fully exposed, and almost wholly in the open air. A few days of the villainous blast referred to, and the leaves were curled at the edges, and mildew set in, especially on the first-named specimens. I am not much of a believer in sulphur as a positive and permanent remedy, especially if there are more causes than one. What can sulphur on the leaves do for the roots, if they are injured from excessive moisture and undue evaporation, or, like the excellent illustration of the London alderman, over-fed? Besides, it is very unseemly, and, as noticed by "Wild Rose," gives yellow Roses an unnatural green tinge. I am no believer in expedients because they were known to our ancestors. What I did was to syringe the worst, back and front of the leaves, with a strong solution of carbolic soap, and with satisfactory results. A new soap, called "Sanitas," used for disinfecting purposes, I consider even better. A few which I considered too moist at the roots, I repotted, without disturbing the ball much, and withheld water until fresh growth commenced. I have recommended the same plan to a neighbouring gardener, and with equally satisfactory results. Preparations from Tobacco I cannot help looking on as an "edged tool" that none but the very experienced in its use should have recourse to, especially in connection with very tender Rose foliage. W. J. Murphy, Clonnel.

SUMMER PROPAGATION OF NOISETTE AND HYBRID CHINA ROSES.—These capital summer and autumn flowering plants, which ought to find more

recognition in the garden than they have obtained of late years, are best increased in the end of June, or in July, by cuttings of firm but not ripe wood. should be made with a slight heel, and should retain all their leaves, even to the base, shortening them back only if too heavy, by cutting the upper portion of the leaf away. A spent hotbed, slightly freshened up by the addition of a few barrowloads of Oak or Beech leaves, will be an excellent place in which to strike them-one with two or three lights being large enough for a big garden. Level the surface when the heat has declined to 80°, then put on about 2 inches of loam, and over that 2 inches of finely sifted sandy soil, and finish off with a slight surfacing of sand, and the bed is ready. On making the cuttings take care they do not flag more than can be avoided, therefore do not keep them lying about, but as soon as a few score are ready insert them to about 14 inch in depth in the bed, water with a fine rose and warm water, close up, and shade effectually with something thicker than scrim. The frame must he kept close during the day, but may have air given early in the morning for twenty minutes to dry up excessive moisture. Watering may become occessary excessive moisture. Watering may become occessary again before rooting takes place, if the underlying stratum of loam is of a porous nature, not otherwise, and a slight dewing over will be found beneficia after hot days. Shading must be constant, only during sunshine, and must be taken off immediately the sun leaves the frame. I found the fewest losses when the frame stood in the sunniest place in the frame ground, and usually 90 per cent. will grow. If potted off as soon as the majority of the cuttings are rooted (which will be in about eighteen days) into 60's, and kept close in a frame for a week, they will make good plants to put out the following spring. In a good strike the plants should not lose their leaves, in that way differing from autumn-struck Rose cut-tings, in which the loss of the foliage, at an early date, affords a sign that success will attend the work. M.

Home Correspondence.

Cytisus Adami.-We have received a fine branch of this interesting tree, bearing tufts of the flowers and leaves of C. purpureus, C. Laburnum, and the inter-mediate form, C. Adami. It appears that in the ordinary course of events the tree bears the intermediate flowers only, but where any injury, such as the destruction of the terminal bud of a branch takes place, one or other of the supposed parent forms is produced. An example in the garden of Mr. C. E. Stuart, of Reading, for many years bore nothing but the flowers of C. Adami; last year, however, a tuft of C. purpureus was produced at the lower part of This was accidentally destroyed, but this year branches of both C. purpureus and C. Laburnum have been produced in various parts of the tree, the former chiefly in the upper parts. The mixture of the erect tufted branches of C. purpureus with the pendulous racemes of C. Laburnum and the curiously intermediate C. Adami, gives the tree a very striking appearance. At every point where one of the parent forms was produced there were marks of some previous injury-a small branch torn off or the extremity of a bough destroyed. A coloured figure of the pendulous variety, C. Adami var. pendula, is given in the Revue Horticole for 1871, p. 370. This shows flowers with the pink and yellow colouring definitely separated. In the Reading tree none of these flowers were to be seen, all were a dull yellowish-pink, with the brown marks characteristic of C. Laburnum at the base of the petals, while the calyx was exactly that of C. pur-pureus. H. N. R., British Museum.

Worms,—The common complaint against cats for scratching up young or small plants in suburban gardens is open to some doubt. In my experience this spring I have found the worms to be answerable for all such that have occurred in my own garden. Early in April a number of Lettuces, planted out, were found for several mornings after to have had their roots removed quite out of the ground, as though lifted up by the leaves and left, some simply laid over on their sides, and others 2, 4, or more, and one nearly 9 inches away. When the plants had properly taken root the attacks ceased, and during the dry weather the young plants since put in escaped, but upon the return of rain the attacks have again been

made, not upon the cultivated vegetables, which are all firmly rooted, but upon the younger growth of various weeds. This is a power of denudation, I believe, not quoted by Darwin. IV.

Sowing Vegetables where they are to Stand. -The long spell of dry weather has been so very trying for all freshly transplanted vegetable crops that it has been next to impossible to keep the plants alive, and many like myself no doubt wish they had practised that best of all systems, the sowing and rearing of the plants where it is intended they should grow and turn in. Those who do so with Brussels Sprouts, Cauliflower, and Lettuce generally have the finest, as there is no check except the slight one at thinning, and the plants being left with tap-roots intact are always much stronger and better able to bear drought, as they can get down and find moisture when there is none near the surface. Transplanted Lettuce at and after this season generally bolt, but those sown, thinned out, and allowed to stand, seldom or never run, and not only that, but they heart-in much harder and closer, and are crisper, more juicy, and better in flavour. The way to manage is to choose a piece of partially shaded ground, such as a border near a building or wall, and having heavily manured and dug it shallow drills 15 inches apart should be drawn, and in these two or three seeds pressed, and just covered in passion and about a foot between, as then the Lettuce, when they come up, will stand in the right positions, and all that is necessary then is the singling out, and leaving the eternnest among them to grow. The hoeing seeds pressed, and just covered in patches, leaving that is necessary then is the singling out, and leaving the strongest among them to grow. The hoeing after, which will be requisite to keep down weeds, gradually fills in the shallow drills, and thus slightly earths up and steadies the plants. For Cauliflower the drills should be at least 2 feet apart, and the patches of seed 18 or 20 inches from each other in the rows, which will afford sufficient room for their the rows, which will afford sufficient room for their full extension, and enable them to turn in with fine heads. Endive, too, are much better sown where they are to stand, and may be treated precisely the same as Lettuce, except that the Endive, having to stand late in the autumn, needs a more open and sunny position. A good situation for it is a sloping border, or a place on one of the quarters, where it can easily be covered or protected for blanching. J. S.

The Jensen System of Protective Moulding,—Probably owing to the vast importance of the Potato crop in these countries you have repeatedly devoted a large portion of your space to the consideration of the above. I am much interested in everything pertaining thereto, both for farm and garden purposes, and I want space for only a few lines to ask a question in reference to this matter, as the time will shortly come to decide whether this system of prevention is to be resorted to or not. Let me for argument sake admit the system of protective moulding is feasible and practicable, I want to ask has any reader of the Gardeners' Chronicle put it into practice to any considerable extent, so as to employ paid hands to do the work, and if he has would be kindly say if he found the experiment a paying one comparatively? W. J. Marphy, Clonmel. [Some experiments are being carried out at Chiswick, under the ausplees of the Scientific Committee, which will be reported on in due season. Ed.]

Royal National Tulip Show.—Mr. Bentley writes that he sent me notice of date of show ten days in advance, and it is proper, therefore, to conclude that the Post-office failed in its duty, which is certainly unusual. As a matter of course, I am sorry I sopke. One of my friends who takes a special interest in Tulips found himself all in the dark, like myself, about the date of the show, although he sent his subscription in good time. I owe Mr. Eentley an apology, which I readily offer, hoping to be pardoned for my loudness, on the ground that I have had painful experience of the prevalence of humbug on this terrestrial sphere. Shirley Hibberd.

Old English Vineyards (p. 774).—Sir Joseph Hooker's letter on the Bassett vineyards is very interesting. In my Plant Lore of Shakespeare I quoted Pbillips' account of them published in the Pomerium Britannicum in 1820, and I have now no doubt that Phillips quoted from Switzer without acknowledgment. I was then unable to identify the vineyards named, but have since discovered them. They were at Claverton, near Bath, and part of the property was sold by Mr. Richard Holden to the Bassetts for Still called The Vineyards. In 1701 the property was sold by Mr. Richard Holden to the Bassetts for vine of the vineyards of Claverton." In 1801 was published a map of 5 miles round Bath, in which the vineyards are marked, and the Vines plainly shown. By the Bassetts the property was sold to the Kegans, and by them in 1868 to the present owner, Mr. Skrive.

Last year I was taken by Mr. Skrive to the site, and if a vineyard could succeed anywhere in England I should think it would succeed there. The soil is a brashy oolite, warm and dry, and the vineyard faces full south, ou a steep slope, fully protected from the north and east, and the ground forming natural terraces. What is the present result of the Castle Coch experiment in vineyards? [Unsatisfactory. Ed.] Henry N. Ellacombe, Bitton Vicarage.

The Fruit Crop.—It is very remarkable that the hardy fruit crop has suffered more than the tender, yet so it is; for while in most places where a little The Pruit Crop.—It is very remarkable that the hardy fruit crop has suffered more than the tender, yet so it is; for while in most places where a little protection has been given, or there is natural shelter more than walls afford, pleoty of Apricots, Peaches, and Nectarines, are to be seen, while in the very same gardens, Cherries, Plums, and Pears, as well as Cooseberries and Currants, are mostly cut off, or badly thioned and injured, as may now be seen by the quantity lying on the ground, and the crippled, unshapen fruit on the trees. This immunity from harm on the part of Peaches, Nectarines, and Apricots, can only be accounted for by their having been in flower so much earlier, and getting set and well on in swelling before the sharp frosts came during the third week in April, which caught Plums, Cherries, Pears, and the bush fruits just at a critical tume, and the result has been wholesale destruction, which will be a serious thing for market growers, who have suffered so much of late. Fortunately, Apples have escaped, and though the trees in most parts of England bore heavily last year they formed plenty of blossom-buds, and have a fair crop this, which the late rain bas helped considerably by washing the foliage and well soaking the ground, thus freeing the Apple clusters of maggots, and causing the fruit to swell at a great rate, so that within a few days it doubled its size. If we get warm weather just now its progress will be rapid, but I do not think there will be any fine Pears, as the frost seems to have played sad tricks with them, and left them gouly and full of knotty excrescences. They are bad on walls, but they are much worse on pyramids, where the greater part have fallen, and most of those left are full of deformity. The hardiest kind, or the one that seems to have escaped best, is Louise Bonne, a tree of which, standing among the others, with no more shelter or advantages, has nevertheless a full crop of clean-looking fruits. The only other variety that has anything like a crop is Easter B only just a few, and the greater point holic, although most of them had plenty of bloom. Cherries on a south-east wall have plenty of fruit, but those on a westerly aspect are very much thinned. The effect of the frost on these has been most singular is at it seems to have destroyed the flesh, the stones being only covered with a thick, tough skin, and those that do swell are all sorts of shapes. Morelos will be plentiful, as they generally are, on account of blooming so much later, and as they are such good keepers, and so valuable in so many ways for cooking and preserving, the wonder is that they are not much more extensively grown. While on the subject of Cherries, I would just like to say a word in favour of Frogmore Bigarreau, which has all the good qualities of the old kind, and is considerably earlier, fruit with us on a tree growing on a south-east wall being now (June 14) ripe, thus being quite a fortnight in advance of the original sort. The Frogmore Bigarreau was strongly recommended by the late Mr. Robert Osborn, who was a good judge, and who, I think, sent it out. Where Gooseberries and Currants seemed to have suffered most is after close pruning or severe thinning, which is more practised in gardees than among market growers, and this difference in treatment, though it is the means of bringing about finer fruit, often ends in a partial and sometimes total loss of the crop. The system of having Gooseberries and Currants in rows between other trees favours the market man; but independent of that shelter, when bushes are thick with branches and full of foliage, they do much to protect and shelter themselves, as there is no draught of cold air through them, and a degree or two gained may, and frequently does, save the Gooseberries and Currants from the sting of the frost. 7, S.

Cytisus Adami. — Your leading article at p. 772 seems to cast some doubt on Adam's statement, that by inarching or grafting Cytisus Laburnum purparascens (not Cytisus purpureus) Coar statement is the one cited by Darwin and Morren; we have not been able to consult the original. The case is important, inasmuch as C. purpurascens is = C. Adami, and is a bybrid production, which materially alters our correspondent's case. ED.] on the common Cytisus Laburnum, the result would be that from this graft shoots exactly similar in every respect to Cytisus purpureus, both in blossom and foliage, would emanate (in reality it would be Cytisus purpureus), and in addition to this shoots would also be produced with both the leaves and flowers of the stock used, viz., Cytisus Laburoum. This has been verified out, and over again in the large nurseries where ornamental trees are grown, and any one who may still be

sceptical has only to purchase or graft C. L. purpurascens on the common yellow Laburnum, and in two or three years the result would be as stated above, reliance should not be placed on a single plant, but half-a-dozen should be tried. A fine specimen of Cytisus Adami used to be in the Royal Horticultural Gardens at Chiswick, and is probably still growing in the portion taken from the old garden. Abother similar specimen used to be in the Upton Nurseries, Chester, growing near the brook that divides the Upton and Newton Nurseries, and the late Mr. Francis Dickson told me it originated in the way I have named, and since then I have seen many similar trees. I have never tried to cross C. L. purpurascens either with the common Laburnum or C. purpures, I have often woodered how C. L. purpurascens originated, as it seems so unlike the C. Laburnum in many respects. I found on one occasion a bundle of scions intended for grafting that had not been required had all rooted freely, showing it could be produced on its own roots. C. L. purpurascens is the best stock on which to bud or graft Cytisus purpureus and C. purpureus albus. On the C. Laburnum they frequently die away and become unsightly; this is not the case when growing on C. L. purpurascens. One of the most beautiful of the yellow Laburnums is C. L. Parksii, William Heale, Lincoln.

A Flower Basket.—The accompanyiog illustration (fig. 151) was sent us by our special correspondent at the late International Horticultural Exhi-



FIG. 151.-A RUSSIAN PLOWER BASKET.

bition at St. Petersburg. It represents what many ladies will consider a handy thing when gathering flowers, inasmuch as it obviates the necessity of carrying a basket while collecting flowers, or of stooping to place them in a basket on the ground. The contrivance figured can be stuck into the ground in any convenient place, and moved about as required.

Early Peas.—The present is a good time to compare notes on Peas with regard to the important points of earliness and quality—the first earliest being now at their best. My method of growing early Peas is to sow in boxes, pots, or on turves (I do not care which, provided they are carefully attended to through all their stages of growth), early in the year, and plant out on a sheltered border when the weather will permit. I have grown several varieties for trial, but will only mention a few of the earliest and best in quality, viz., William I., sown in boxes, January 12, plated out March 10, io bloom May I, gathered first dish June 7—quality excellent; First Crop, sown at the same time as the above, was in bloom on May I, and we gathered the first dish on June 6—

quality and quantity inferior to William I.; American Wonder, sowo and planted out at the same time, bloomed on May 5, and we gathered on June Squality and quantity excellent; Paragon, sown and planted with the others, was in bloom on May 24—will not be fit to gather till the last week in June. Taking all in all—quality, quantity, and earliness—I do not think we have a more useful Pea in cultivation than William I. David Lumsden, The Gardens, Blexham Hall, Steaford.

Fenaria sanguinea, Pim.—In the Gardeners' Chronicle for December 22, 1883, I described and figured a remarkable mould which occurred in some aoundance. Jone of the sound of the plant seemed so doubtful that for the time I refrained from giving it a name, hoping that investigation might give some clue to its nature. In this, however, I was disappointed, as repeated and varied attempts have entirely failed to induce germination beyond the extension of very short hyphæ. I therefore venture to propose the above name as a new genus and species till some more fitting one be found for it. Its place is apparently near Pythium Fernaria (fenum = Hay) saoguinea, nov. gen. et spec. Hyphsama dense, felted, sparingly septate, producing abundantly caducous, somewhat pyriform, conidia, thick walled, also spherical conceptacles containing numerous ovate sporidia, exterior of conceptacles somewhat byssoid. The whole giving a decided blood-coloured tint to the stem of grass on which it occurs. Hab, silo at Albert Farm, Glasnevin, Co. Dublin, October, 1883. Greenwood Vim, M.A., F.L.S.

Acrial Roots on Vines.—Apropos to the remarks on this subject at p. 778, I am tempted to ask whether the so-called acrial roots on Vines are roots at all. This may seem a very sceptical sort of question to put, because the theory as to these pendent leeders from Vine stems being roots is universally accepted. Really are they other than species of tendrils, such as are seen plentifully on many wall climbers, but that in the case of Vines are only created or developed by the peculiar atmospheric conditions under which the Vines are grown? Some would perhaps call these stem-roots or tendrils, spongioles—a fine name that may mean anything. Is it not the case with some climbers that when in close coatact with a wall they produce exactly similar protuberances, yet if detached from a wall have none? Yet in no case can these be called roots. [Why not, if their structure and mode for growth is that of roots? Ed.] A. D.

Chrysanthemums Flowering Prematurely.—
It gave me great satisfaction to see Mr. Salter (at p. 778) calliog attention to this unfortunate precocity. I am growing about 300 plants this year for exhibition purposes, and, to my astonishment, when giving them their last shift into 12-inch pots I found most of the plants intended for cut blooms with flower-buds on them as large as Peas. I concluded that this was caused either by the cuttings being taken too early, or from the plants having been kept under glass too long, on account of the coldness of the nights and sharp piercing winds in the day-time. My cuttings for this year's plants were taken early in November, which to my mind is far too early, for I have never taken them until this year before the middle of March is quite soon enough, as experience has shown. I was the most successful exhibitor of Chrysanthemum plants at Safron Walden for three years, and all my plants were struck from cuttings taken in March, whilst those of my opponents were either old plants or cuttings struck in the autumn. Coming again to the point of early flowering I will give my experience, having adopted three dilierent methods. First I cut some quite down; those I am afraid will not be forward enough for their wood to become well matured. Secondly, I cut some down half way, and those have made such a weak growth that I am disposed to think the quality of the flower will be destroyed; and, thirdly, I simply pinched out the buds, and those I am happy to say are giving more satisfaction, as they are growing again very stroog. Those that are growing on for specimen plants, I am happy to state, have not shown any signs of flowering, as they have been frequently pinched, the only exception being Mrs. G. Rundle. Mrs. Dixon and Cassandra, the Japanese varieties that have been throwing up flower-buds and those that have been throwing up flower-buds

Bronze Jardin des Plantes, Cherub, General Slade, Hereward, Hero of Stoke Newington, Lord Derby, Mabel Ward, Mr. Gladstone, Mr. Jay, Blonde Beauty, Beethoven, Mrs. Cunningham, Mr. Bunn, and I might mention many others. Among those that would have been in bloom now had they not been stopped I may mention—Incurved: Mrs. G. Rundle, Mr. Dixon, Cassandra, Novelty, Pink Perfection, George Glenny, Mons. Elie, Gloria Mundi, Empress of India, Emily Dale, Her Majesty, Lady Hardinge. Japanese sorts that were very forward with flower-buds are:—Album plenum, Apollo, Elegance, Magnum Bonum, Striatum, Perfectum, The Cossack, Victoria, Rosa Bonheur, M. Castel, Red India, Illustration, Jane Salter, and Hero of Magdala. Alfred Bishop, The Gardens, Wannock House, Polegate, June 16.

The Double White Rocket.—Just at this time of the year we hear about that rara avis in flores, the true old double white Rocket, and it seems that occasionally it finds its way inte editorial sanctums, but does not come before the eyes of the public. Will some one who is a favoured possessor of this rarity send it to one of the London shows so that it may be seen, and those who have it not, or it would seem cannot get it, may become acquainted with it.? Our old but, alas! not true double Rocket seems to be but an impostro—a very hard appellation to apply to one of our swetest of hardy border flowers. It is true that this latter kind is not of a pure white colour; it has the demerit of being tinted with rose, but it is very hardy, is a robust free grower, blooming finely, and the flowers are as richly perfumed as the best of Stocks. Beyond being of a purer hue, what more can the true old being of a purer hue, what more can the true old double white Rocket be? A. D.

Wiltshire Woods and Downs,—When reading over the interesting article (p. 766) on a botanical excursion to the Wiltshire Downs by Mr. Horsefield I could not help wishing that I had been the fourth member of the party. It is seldom, indeed, as was, however, the case here, that even three friends having a mutual interest in our native Orchids as was, however, the class nets, that even three friends having a mutual interest in our native Orchids meet for a botanical roam. The members of this securison seem, from the list of Orchids found, to have been amply rewarded for their search, for there are certainly few districts in this country where an equal number of species, some very rare, could have been collected in a day's outing. The large white Cephalanthera (C. grandiifora) is, I am glad to know, still flourishing in at least a few secluded spots, where long may it remain, for, as it is much sought after, I had feared it was now becoming a rare native plant. I was also pleased to know that the Bee and Scorched Orchids (Ophrys apifera and Orchis usultata) are still found pretty plentiful in Wiltshire, as the former especially is in great demand, and must be torn up in quantities each year either here or on the Continent. Habenaria bifolia, or as it is popularly known as the latterfly Orchis, certainly deserves all that Mr. Horsefield has said in its favour. I have a beautiful variety of this plant with variegated leaves, which Horscheld has said In its favour. I have a beautiful variety of this plant with variegated leaves, which offers a rich contrast to the ordinary form. Regarding the Bird's-nest Orchis (Neotita nidus-avis) we have yet a good deal to learn, but I believe that I can now satisfactorily account for the peculiar appearing and disappearing of this interesting plant, and which I may have occasion to refer to at another time. A. D. Webster.

Foreign Correspondence.

GHENT: SYNDICAL CHAMBER OF BELGIAN NURSERYMEN .- The second monthly meeting of the joint committee of the Syndical Chamber and the Royal Agricultural and Botanical Society of Ghent was held recently at the Casino, and was as great a success as the first. Seventy-five new and rare plants were entered for the criticism of the jury. Certificates of Merit were awarded to Masdevallia Harryana var. D'Haenei, shown by M. D'Haene; to Diessenbachia Jenmani, exhibited by M. Auguste Van Geert; to Cattleya Mossiæ Margarita, submitted by the Compagnie Continentale; to Odontoglossum by the Compagnet Commentate, to Contingiossim luteo-purpureum, from M. C. Vuylsteke; to Croton sp. nov., sent by Messrs. Wartel Frères; and to Begonia Countess Louise Erdody, of Messrs François Debois et Cie.

Cultural Certificates were awarded for Masdevallia amabilis, shown by MM. Vervaert, et Cie; to Vriesia fenestralis, which came from M. A. Peters, of Brussels; to Licuala grandis, from the Compagnie Continentale; to Davallia fijiensis plumosa, from M. Auguste Van Geert; and to Phœnix rupicola, from M. Jules Heye-Leysen. Numerous ''Honourable Mentions" were also adjudged. The success of these meetings is now assured, and we have no doubt of their value to the horticultural interests of Ghent.

FORESTRY.

INTERNATIONAL FORESTRY EXHIBITION.—Already the shell of the building in which the grand exhibition of forestry, arboricultural products, and appliances is to be held, is complete. Although the erection is of wood, and therefore paltry (necessarily) as regards its material, some attention has been paid to form and outline, so that the usual shed-like effect produced by wooden buildings is altogether avoided. By means of transepts, central dome, and what may be called conical domelets at the two ends of the main building, an effect is produced very much like that of the International Exhibition buildings at South Kensington in miniature. The whole length of the lawn in front of Donaldson's Hospital has been taken up, so that the stately front of that great building is entirely hidden, only its turrets peeping out in the background. The entrance will not be by the gate next the city, but by the western gate, from with in a few yards of which a wide covered way, 54 yards in length by 10 in width, extends up to the western end of the main building. The gabled portico is of a very handsome rustic design, the entrance being by three arches, immediately behind which will be the paygates, arranged in the most convenient manner, after study of the mode found so successful in London and Paris Exhibitions. At the north end of the covered way another flight of steps to the east gives access to the main building, which affords an uninterrupted view from end to end. The walls of the covered way are to be lined with calico of various colours, but the chief features of the main building are to be brought out into relief by means of paint. The beams or principals supporting the roof are semicircular in lorm, and already some dozen of them finished in blue and white give an indication of the cheerful effect which will be produced. For a temporary structure this style of decoration is admirably adapted, as it is neither too substantial nor too trivial, but pleases the eye and suggests no waste of means. The domes and transepts will, of course, be treated in similar The nave is 233 yards in length by 20 yards in width, and the transcpts, of which there are three, are each 100 yards long, and about as wide as the

Every one is pushing on the work of receiving and arranging in order to be thoroughly ready for the opening on July 1. Mr. W. E. Dixon has entered on his duty of superintending the reception and arrangement of the specimens, but a large staff will he required to be at his command to get everything in thorough order in the short time now left before the opening.

The building will be lit at night by the electric light, fitted up by the Anglo-American Brush Electric Light Corporation. The wires are being led along the roof on either side, and the number of arc lamps will be between sixty and seventy, those depending from the three domes being of course much larger and more brilliant than the others. The building Is run on two circuits, so that, should anything go wrong with one, the other will remain in operation. There will therefore be no fear of the building being left in darkness by any accident to the batteries or wires. In the refreshment-rooms, annexes, and other portions of the building apart from the nave, there will be about 150 incandescent lamps. It is also proposed to construct an electric railway along the front of the building, which will be engineered by the same company, and will doubtless form no small item in the attractions of, and revenues to be derived from,

the Exhibition.

Among the exhibits already forwarded are the whole of the specimens sent by the Indian Government; the collections of Messrs. Vilmorin, Andrieux ment; the collections of Messrs. Vilmorin, Anufficial & Co., Paris; Messrs. Sutton & Sons, Reading; and of Sir James Campbell, Bart., of the Dean Forest.

The committee met a few days since to make

arrangements for the opening ceremony, and appoint

AMERICAN FORESTS .- Dr. J. T. Rothrock, of the University of Pennsylvania, recently delivered one of the course of University lectures in Association Hall, Philadelphia, taking for his subject "The Relation of American Forestry to American Industry." Some of its salient features are brought out in the following synopsis from The American :- "His University lecture was a summary of the latest development of the necessity of forestry laws to protect the tuture timber trade of the country. He showed the percentages of timber land to other productive territories, from the 3 per cent, of Great Britain to the 45 per cent, of Sweden, and that the lowest ratio that can be called self-sustaining is 15 per cent., while in America there is only a margin of 1½ per cent, between dearth and supply. At the rate at which the forests are being destroyed this small advantage will soon disappear, and then there will be a timber famine throughout the land. Great Britain, between 1872 and 1876, imported 77,000,000 dollars' worth of timber—about 2.60 dol. for each individual—while the supply was only about 1.30 dols, from native sources. In the United States, besides using about 19.90 dol, per head, 600,000,000 dols, worth were exported. How long this can last is a question of time, and very little time, too. There ought to be as large a proportion of woodland to clear land for atmospheric purification as for timber supply. The rainfall is not necessarily affected by clearing off the timber; but failing springs and falling rivers do result from it, for forests diminish evaporation over 80 per cent. is the practical remedy within reach? Professor Rothrock points to Germany, with its nine forest schools, their high standard, and their able teachers and growing classes of pupils. One man in America, Professor Sargent, of Massachusetts, is the only person employed and paid by a State to look after the vast empire of timber. He has worked hard to secure active measures to protect the interest entrusted to him. An exemption of preserved forests from taxes would soon return the loss of revenue in the enhanced value of the timber. The reckless destruction of trees is the first thing to be cured. Even if Congress withdraws national timber land from sale it will be only a palliative, and there are no trained men to which this enormous source of future trained men to which this controls source of tulure wealth can be safely entrusted. Within five years the hest white Pine will all be gone; within thirty-five or forty years all the rest of the good timber will have been exhausted. Can there be any question about the necessity of such legislation, State and National, as shall protect the country from a timber famine?" Botanical Gazette.

Reports of Societies.

Edinburgh Botanical: June 12.—The Society met at the class-room, Royal Botanic Garden, W. B. Boyd, Esq., President, in the chair. The following communications were read:—

f. "Obituary Notice of the Rev. John Macvicar, D.D., LL,D., of Moffat." By the Rev. John M'Murtrie,

M.A. II. "Beapt, or Journal M.A. II. "Beapt of the Scottish Alpine Botanical Club at Braemar." By Charles Stuart, M.D., Chimside; communicated by the President. The following plants were exhibited as amongst the most interesting of the finds:—Saxifraga rivularis, S. nivalis, Luzula arcuata, Betula nana, Salix Scalleri.

Sadleri.

III. "On the Progress of Open-air Vegetation at the Royal Botanic Garden." By Robert Lindsay, Curator.

III. "On the Progress of Open-air Vegetation at the Royal Botanic Garden." By Robert Lindsay, Curator.

Vegetation at the Royal Botanic Garden for May, 1884.—During the month of May vegetation made fairly good progress. No frost was registered, and once only did the glass fall to the freeing point, while last May the thermometer was at or below freezing point on four occasions, indicating 9° of frost. From the 181 Miller which a succession of dry, parching, easterly winds with bright sunshine throughout the day prevailed until the end of the month. Most deciduous trees have developed fine healthy foliage, and a few, owing to the absence of frost, have flowered better than usual, such as Horse-Chestnut, Hollies, and few, owing to the absence of frost, have flowered better than usual, such as Horse-Chestnut, Hollies, and a few, owing to the absence of frost, have flowered better than usual, such as Horse-Chestnut, Hollies, and Favia flava. Laburnum and Thorns, both single and double, also promised well; but others, particularly Lilacs, double and single Cherries and mondarity as usual. Although no actual frost was an advantaged to the same emperature was not high. The lowest readings of the thermometer occurred on the 2d, 3½, 4th, 3½, 5th, 3½, 7th, 33′, 10th, 3½. The highest morning readings were—on the 12th, 57′, 22d, 59′, 23d, 652′, 23th, 652′, 31st, 58°, 10th parts of the same month last year, making a total of 455 since January 1st, as compared with 446 for the same period last year. A large proportion of those which began to flower in May were—Corydalis nobilis, Tulipa pulchella, Lychnis demonstrates and sulphurea, Erims alpinus and bispanicus, Dode-catheon integrifolium, Phlox amcma, Daphne encorum. Preonia tenuifolia fi.-pl., Olcaria Gunniana, Enkianthus

himalaicus, Dryas octopetala, Clintonia Andrewsiana, Aquilegia glandulosa, Lupinus nootkaensis, Anthyllis montana, Anthyllis erinacea, Pentstemon Menziesi, Erigeron Roylii, Linaria alpina, Chamæbatia foliolosa, Aciphylla squarrosa, Meconopsis nepalensis, Linaria origanifolia, Onosma stellulata, &c.

acipylla squarrosa, Meconopsis nepalensis, Linaria origanifolia, Onosma stellulata, &c.

IV. Miscellaneous communications:—
(a). Mr. Liodsay exhibited a spray of Elæocarpus cyaneus, from a plant now 30 feet high in one of the hothouses, covered with flowers.
(b). Mr. Muirhead, Factor, Raxton, Berwickshire, exhibited a collection of fifty cut blooms of alpine and herbaceous plants, which were greatly admired.
(c). Mr. Thomas Walker, Carluke, sent fine specimens of Paris quadrifolia and Eortychium Lunaria.
(d). From cold frames in the garden unmer of interesting plants in dower—Androsace cotundifolia var. meteorallys, Aquilegia glandulosa, Erigeron aurantiacus, Cyclobohra cerulea.
(e). Isaac Anderson-Henry, Esq., of Hay Lodge, Trinity, sent pots containing the following Indian and New Zealand plants in bloom:—Morina nova species; Myosoiis adotarctica from New Zealand, new; Catheartia villosa, Pimelea from 4000 feet, in New Zealand, quite hardy; Pratia sp., New Zealand.
Among nuany beautiful plants in flower in pots from the Royal Botanic Garden were Myosoiis alopsetris, Veronica Lyallii, Primula longiflora, P. capitata, Saxifraga mutata, S. longifolia, seedling; Calecolaria Kelyana, Petrocoptis Lagascee, Lewisia rediviva, Erinus hispanicus, alla and alpinus, Gyspophila cerasticise, Linaria origanifolia, Cyclobothra cœrulea, Globularia cordifolia, Lysimachia nemorum, Erigeron aurantiacus, Androsace rotundifolia or macrocalyx, Aquilegia glandulosa.

Royal Botanic; June 18.—This show was held as usual at this season in the large tent in the garden, and proved a worthy conclusion to the successful hortical-intral displays of the present year in the Society's garden. The flowering section, although lacking the gorgeousness always added to any show in early summer, in which the Indian Azaleas are largely seen, was fairly bright with colouring that would have looked admirable had the sun deigned to peep forth. Stove and greenbouse plants were in considerable numbers, the awards in the open class being, 1st, Mr. J. Cypher, nurseryman, Cheltenham, in whose dozen plants were handsome specimens of Allamaoda Hendersoni, profusely bloomed; Ixora Williamsi, equally fine; I Hedaroma (Darwinia) tulljuffera, Azalea Souvenir de Prince Albert, Stephanotis florihamsi, equally fine; I Hedaroma (Darwinia) tulljuffera, Azalea Souvenir de Prince Albert, Stephanotis florihams, et al. (1998) and the stephanotis florihams, et al. (1998) and et al.

Thames, in whose lot were fine Pinnelea mirabils, an extraordinary floriferous example; Clerodendron Balfourianum, Erica mutabilis, and Franciscae calycina major, with an abundance of bloom; 3d, Mr. H. James, nurseryman, Lower Norwood.

The amateurs' class for six stove and greenhouse plants brought some capital specimens of moderate userlistic, the desired field. Ewell, who had excellent examples of Clerodendron Balfourianum, Erica depressa, Statice profinsa, Appleckis macrantha, Dracophyllma gracile, and Azalea Reine des Belges; ad, Mr. A. Gibson, gr. to T. F. Burnaby, Atkins, Esq., Halstead Place, Sevenoaks, in whose collection were Tabernæmontana coronaria, beautifully bloomed, showing what a capital plant it is when well done, and a good plant of Dipladenia antibilis; 3d, Mr. C. Rann.

In the nurserymen's competition for the best six stove and greenhouse plants; st, Mr. J. Cypher, with neat, well-flowered specimens, including Dipladenia anabilis; and the state of the state

specimens, especially an Odontoglossum vexillarium roseum, Cypripedium barbatum superbunn, and Ledia Brysiana, a fine thing, with four blooms; 2d, Mr. H. James, who had some good things, such as Cattleya Mendelit, Cypripedium Stonei, and a large Angulea Clowesii, with a considerable quantity of bloom, II. James had the field quite to himself, and was warded a 1st prize for twelve plants of warious steas—from small plant the other competition for the best six Fuchsias, st. Mr. Eason, gr. to B. Noakes, Esq., Hope Cottage, Highgate, who had Sedan, Marie Cornellisen, Lady Dorothy Neville, Rose of Castille, Carminata, and Earl of Deaconsfield, all of which were welb-bloomed pyramids, d. Mr. G. Wheeler, gr. to Lady Louisa Goldsmith, St. John's Lodge, Regent's Park. For the best six Pelargoniums, 1st, Mr. C. Turner, unseryman, Slough; 2d, Mr. J. Cypher. In the amateur's class for the same number, 1st, Mr. J. Wiggins; 2d, Mr. Z. J. Hill. In the nurserymen's class for the best six fancy Pelargoniums; st, Mr. T. Turner. The amateur's competition for six plants of the fancy section resulted in Mr. F. J. Hill. Being placed 1st, Mr. J. Wiggins, gr. to W. Clay, Esq., Kingston, 2d. In the open class Mr. H. Eason was awarded 1st, for the best six for Dr. Martineau, Clapham Park.

Exotic Ferns were not an important feature, still those shown were good examples of their kind: for the best

Clapham Park.

Exotic Ferns were not an important feature, still those shown were good examples of their kind; for the best six specimens, 1st, Mr. C. Rann; 2d, Mr. G. Archer, Highbury. In the amateurs' class for six fine-foliage plants Mr. C. Rann was 1st, withtwo Crotons, three Palnats and Dasylirion acrotrichum; 2d, Mr. J. Child, with neat useful specimens; 3d, Mr. G. Wheeler. The nurserymen's competition for the best six fine-foliage plants placed Mr. H. James 1st, Mr. J. F. Mould 2d; and in the open class for six Palms, distinct, 1st, 2d, and 3d prizes were awarded respectively to Mr. C. Rann, Mr. H. James, and Mr. R. Buller.

Tuberous-rooted Beegonias were not in very large num-

Mr. H. James, and Mr. R. Buler.

Tuberous-rooted Begonias were not in very large numbers, nor were they conspicuous for large size; but the new varieties with double blossoms were frequently seen. For the best twelve plants, nurserymen, 1st, Messrs. J. Laing & Co., Stanstead Park Nursery, Forest Hill, with had Lord Crewe, a fine scarlet; B. Novelty, B. Bridesmaid, B. Robt, Laing, & Lochair, B. Golden Gen, B. Dr. Masters, and the Hon. Mrs. Goschen; 2d, Mr. C. Coppin, Shirley Nursery. In the amateurs' class for twelve specimens, 1st, Mr. J. Child, for more old-fashioned pendulous kinds; 2d, Mr. J. Tong, gr. to J. S. Law, Esq., South Lodge, Southgate, with nice plants.

CUT FLOWERS formed a good display, and much interest centered in the groups of stove and greenhouse cut blooms, which were in all cases shown in the finest condition, and in quantity sufficient to judge of their merits. Hardy cut blooms were in unwonted abundance, and comprised all those sections of seasonable varieties and species which are now become so popular for outdoor gardening and for indoor decoration. In the amateurs' class for the best twelve varieties of Roses, to be shown in three trusses of each—1st, Mr. J. Hollingsworth, Turkey Court, Maidstone, whose flowers of the following kinds were fine thus early in June:—Etienne Levet, Niphetos, Marquis Castellane, Miss Hassard, La France, Edouard Morren, Madame Willermoz, Madame Bravy, Madame Gabriel Luizet, and Paul Néron.

Madame Bravy, Madame Gabriel Luizet, and Paul Néron the nurserymen's class for the best twenty-four varieties, to be shown in three trusses of each—rst, Messrs. I all & Son, The "Old" Nursery, Cheshunt. In this collection we noticed pretty blooms of Ulrich Baumann, Duke of Edinburgh, Alba rosea, Glory of Cheshunt, Souvenir d'Elies Vardon, Elie Morel, and Cheshunt Hybrid. For the best twelve yellow Roses of one variety, open—rst, Mr. W. Robbins, gr. to E. D. Lee, Esq., Hartwell Grange, Aylesbury, with splendid blooms of Marchal Niel; 2d, Mr. J. Hollingsworth, for Madame Berard. For the best twelve Roses, any colour, one variety—rst, Mr. J. Hollingsworth, with beautiful Cheshunt Hybrid; 2d, Mr. W. Robbins, with beautiful Cheshunt Hybrid; 3d, Mr. W. Robbins, with beautiful Cheshunt Hybrid; ad, Mr. W. Robbins, with Early and Blooms of Adam; 3d, Messrs, Paul & Son, Cheshunt, with La France.

A basket of Roses 3 feet in diameter, tastefully arranged, with a foliaged covered cross handle, was shown by Messrs. Paul & Son, The "Old" Nursery, Cheshunt, who were awarded the 1st prize. Another was shown by Mr. A. Gibson, gr. to T. F. B. Akkins, Esq., to which a 2d prize was awarded.

Hardy cut blooms were shown by Messrs. J. Veitch & Sons, Chelsea, and being put up in large-sized bunches made a fine effect, the species and varieties being arranged artistically, with a view to effect. There were collections of Pyrethrums in single and double forms, Eaglish and German Irises, Antirrhinums, Gladious byzantuns, G. Colvillei abba, G. Lord Grey, G. Prince Alfred, G. Prince of Wales, and G. Crown Princess, fine showy striped varieties; Canterbury Bells, Brompton Stocks, Allium moly, Hemerocallis flava, and Hussrs. Barr & Son, Covent Garden, showed immense

Messrs. Barr & Son, Covent Garden, showed immense Messrs, Barr & Son, Covent Garden, showed immense collections of Pyrethrums, Iris in great variety, very comprehensive collections of Tritonias, Ixias, Peonies, and many other species of hardy flowers, for which they were awarded a Large Bronze Medal, Messrs, Hooper & Co, had also a very large group of similar flowers, and were awarded a Small Silver Medal; and Messrs, Kelway & Son, Langport, an extensive collection of Pæonies, Pyrethruns, &c., that met with undoubted appreciation, containing as it did flowers of great brilliancy of colour and perfection of form.

Store and greenhouse cut blooms were shown in quantum of the property of the proper

Stove and greenhouse cut blooms were shown in quan-

tity. 1st, Mr. Balchin, Brighton, whose blooms were much admired; 2d, Mr. A. Gibson; 3d, Mr. J. Weston. Mr. H. James took the 1st prize for Orchid blooms, shown in twelve trusses; 2d, Mr. Saller. For the best stand of twenty-four trusses of show Pelargoniums, 1st, Mr. C. Turner; 2d, Mr. F. J. Hill; 3d, Mr. Jigglins. For twenty-four trusses of cut blooms of zonal Pelargoniums, 1st, Mr. F. J. Hill; 2d, Mr. J. Weston. Wild flowers were seen in three collections only, but these included the bulk of the indigenous plants in bloom in the districts where the exhibitor resides, 1st, Mr. Dixon, gr. to Sir T. M. Wilson, Bart, Uckfield; equal 1st, Miss E. Smith, Benhall Mill, Frant; 2d, Mr. Dixon, Mr. H. James exhibited some small plants suitable for use in the dwelling, and was awarded the 2d prize. The same exhibitor was likewise Commended for a group of small floweriog plants suitable for a small greenhouse.

house.

BOTANICAL CERTIFICATES.

To Messrs. James Veitch & Sons, for Leucothoe

To Messrs. James Veitch & Sons, Kalmia latifolia major. To Messrs, James Veitch & Son, Abies Douglasii

glauca, To Messrs, James Veitch & Sons, for Osmanthus

myrtifolius.

nyritionus.
To Messrs, James Veitch & Sons, for Andromeda japonica albo-marginata
To Messrs, James Veitch & Sons, for Philodendron

grandidens. To Messrs. James Veitch & Sons, for Lomatiopsis

To Messrs. James Veitch & Sons, for Phyllanthes sub-

marginata,
To Messrs, James Veitch & Sons, for Draccena lati-folia splendens.
To Messrs, James Veitch & Sons, for Adiantum

To Messrs, James Veitch & Sons, for Drosera auricu-

lata.
To Messrs. James Veitch & Sons, for Oncidium

nigratum. To Messrs. James Veitch & Sons, for Cypripedium

Messrs. James Veitch & Sons, for Cypripedium

To Messrs, James Veitch & Sons, for Cypripedium

To Messrs. James Veitch & Sons, for Cypripedium sclligerum majus.

To Messrs. James Veitch & Sons, for Gymnogramma chrysophylla,
To Messrs, James Veitch & Sons, for Odontoglossum

Alexandræ an

To Messrs, James veicei & Sons, for Gaontogiossum lexandre amabie.

To Messrs, John Laing & Co., for Croton superbus,
To Messrs, John Laing & Co., for Croton gracillimus,
To Mr. J. Cypher, for Dendrobium Bensonire alba.
To Mr. J. Cypher, for Dendrobium Cassinode alba.
To Mr. B. S. Williams, for Lælia purpurata albo-

Fo Mr. B. S. Williams, for Metrosideros floribunda

To Mr. B. S. Williams, for Cyp pedium Curtisi.
To Mr. B. S. Williams, for Sarracenia Flambeau.
To Mr. C. J. Salter, for Oncidium macranthum

To Mr. C. J. Satter, for Cattleya Schræderi,
To Mr. C. J. Salter, for Cattleya Schræderi,
To Mr. Balchin, for Leschenaultia biloba major,
To Mr. Hill, for Cattleya Mendelii majus.

FLORAL CERTIFICATES.

To Messrs, John Laing & Co., for Begonia Rose

To Messrs. John Laing & Co., for Begonia Hercules.
To Messrs. John Laing & Co., for Begonia alba-

plena.
To Messrs. John Laing & Co., for Begonia William To Messrs. John Laing & Co., for Begonia Lord

Crewe.
Mr. B. S. Williams, for Amaryllis W. Lee.
To Messrs. James Veitch & Sons, for Glovinia

To Messrs, James Veitch & Sons, for Carnation Mary

To E. B. Forster, Esq., for Fancy Pelargoniums Magnate and Man-at-Arms.

To Mr. C. Turner, for Fancy Pelargonium Phyllis.

Saffron Walden Horticultural,—This Society held a very successful two days' show in the magnificent park of Lady Braybrook, in close contact with the county exhibition of the Essex Agricultural Society. Both shows were very successful. The Saffron Walden Horticultural Society is one of the oldest in the country, having been established in 1819. Those most familiar with the history of the Society affirm, that the one just held (on June 12 and 13) was the best that has yet been held. It was certainly an admirable exhibition. The open classes of stove and greenhouse, and fine-foliage and variegated plants, Puchsias, Pelargoniums, grouping of plants arranged for effect, &c., being exceedingly good, as was also a capital collection of fruit trees are successful. The second of the second with finit of the finest quality and highest colours, with fruit of the finest quality and highest colour. Saffron Walden itself was et 262, gay with bunting and crowded with eager visitors. The very name has a horticultural flavour. Here, long long ago, saffron was grown for profit, and fields now laden with golden grain were full of flowers, and the busy bands of men, women, and children in pursuit of a profitable industry, that seems to have vanished out of the land. In nore modern times Saffron Walden became the centre of another great floral industry—that of the rational of honour and importance in connection with these noble flowers, and distributed went on increasing, and there seemed every prospect of Hollyhock culture being well-nigh universal. Suddenly, however, the disease appeared, and snote down our plants, and finally it became more than a match for our Chater, and Hollyhocks have almost disappeared, even from Saffron Walden. Mr. Chater still tress to hold on to his own old favourites, bast crist of the property of the work of the work of the work of the saffron Walden. Mr. Chater still tress to hold on to his own old favourites, bast centre for the saffron Walden. Mr. Chater still tress to hold on to his own old favour Saffron Walden Horticultural,-This Society Chater still tries to flord on to his own our labourities, but it seems almost hopeless, as no skill or care can guard Hollyhocks from this fell destroyer. The writer has tried starving out the pest, Hollyhocks have been all destroyed and not one left for three or four years.

Hardly have they been reintroduced, when once more the pest is down upon them, and they are gone. But this by the way. In the great tents devoted to the show that in which most of the open classes were staged was this by the way. In the great tents devoted to the show that in which most of the open classes were staged was the best. Here many of the specimens would have done credit to the great metropolitan shows. The fine plants of Ericas, Azaleas, Stephanotis, Eonganvilleas, and other hard-wooded plants, were simply magnificent. There were three lots of twolve each, and Mrs. Gibson, the Mayor's wile—so we understood — beat Messrs. Warren and Tudgey. In the next class, for twelve ornamental foliage plants, the order of the three chief prize-takers was slightly altered, standing thus:—rst, G. Warren; 2d, Mrs. Gibson; 3d, E. Tudgey. Mr. Joshua Clarke showed fourteen him Orchids, but there was no competition in this class.

Azaleas were past their best, but there were nice collections of six each shown, the prize-being awarded thus;—rst, G. Warren; 2d, E. Tudgey; 3d, Mrs. Gibson;
In the exotic Ferus, Mrs. Gibson area.

In the exotic Ferns, Mrs. Gibson was 1st, and C. Emson 2d. These were neat lots, but not specially

Giuson.

In the exotic Ferns, Mrs. Gibson was 1st, and J. C. Emson 2d. These were neat lots, but not specially striking.

Fuchsias were about the finest feature in the show, the three lots of six for the special prize being good, though the 1st prize lot of T. A. Greenwell were by far the best, and as near perfection as could well be; Mrs. Gibson is 2 to 1 for the second of the 1st prize lot of T. A. Greenwell were by far the best, and as near perfection as could well be; Mrs. Gibson is 2 to 1 for the second of the 1st prize lot
these. In the amateurs' classes the same persons were mostly successful, though to those of Mrs. Gibson, T. D. Green, and Joshua Clarke, Messs. Emson, Tuke, Ackland, &c., were added. These classes were generally well filled, zonal Pelargoniums, alike in the plant and cut flower classes, being particularly so, the three lots of six each exhibited by Mrs. Gibson, W. M. Tuke, and Joshua Clarke being as near perfection as may be. The doubles were not equal to the singles. A very pretty group of six lvy-leaved Pelargoniums were shown by Mr. Chester, who was 1st in this class. in this class.

The group of pot plants arranged for effect brought forward a brisk competition. There were four lots forward a brisk competition. There were four lots arranged, at the four corresponding corners of the large tent. Most of them were too flat, and the one with decidedly the most artistic centre had the most common. decidedly the most artistic centre had the most common-place edge. After keen scrutiny and much walking to and fro, the judges—Mr. Fraser, of London; and Mr., D. T. Fish, of Bury St. Edmunds; assisted by Mr. George Paul, of Cheshunt—made the awards, as fol-lows:—rst, T. D. Green; 2d, Joshun Clarke; 3d, Her-bort Taylor; and 4th, J. G. Emson. Neither hand bouquets nor table devices possessed quite average merit, and it would be wise to offer a few liberal prizes for these in the open classes, so as to fire a few professionals into the field and induce a new and higher departure in matters of floral design and decora-tive taste.

higher departure in matters of floral design and decorative taste.

Fruit, unless in the matter of Strawberries and those already named, was rather scarce, and scarcely up to average merit. Vegetables were plentiful and good, and some of the collections remarkably so. The 1st prize was taken by J. C. T. Smith; 2d, J. Wilkes; and the globy B. L. Ackland. Basket of salad,—1st, J. Wilkes; 2d, J. C. T. Smith. It was pleasing to find so many of the prizes in the open classes remaining at home, and Mr. Archer Mrs. Gibson's talented gardener, and other creative for the contractive for the contractive for the prizes in the open classes remaining at home, and Mr. Archer Mrs. Gibson's talented gardener, and other results of their skill. The cottagers' produce was plentiful and good, and the awards liberal. We had almost forgotten to name, among special exhibits bighly commended by the judges, the fine collection of hardy herbaccous plants exhibited by Mr. George Saul. Mr. Chater was also an exhibitor in this class; but the most marvellous special exhibit was the magnificent boxes ot Verbenas shown by Mr. Stacey, of Dunmore. These were the very finest ever seen by the writer. The show was admirably managed and arranged by the committee and the joint Hon. Sees, Messrs. Arthur Midgley and B. L. Ackland; and the weather, being all tlat could be desired, over riceo visitors were admirted, and foo taken at the gates the first day. [From a Correspondent.]

Variorum.

EXHALATION OF OZONE BY FLOWERING PLANTS. -The question, "Are plants in bedrooms unhealthy or not?" has been frequently put, and as frequently answered in directly contradictory terms. The question, so far as the production of carbonic acid is concerned, is of little moment, for the quantity of that gas given off during a night by any conceivable number of plants likely to be placed in a bedroom is so small as to be practically harmless. It is the organic matter which accompanies the expired breath of the sleepers that really renders the air of a bedroom foul,

and it would seem from some researches made by Dr. J. M. Anders that flowering plants at least help to purify the atmosphere wherever they may be placed. Schreiber and other investigators have, for instance, asserted that the emanations from Pine forests actually convert the oxygen of the zir into ozone, and Naquet goes further with the dictum that "ozone exists in woods and fields, and wherever there is active vegeta-tion." However ozone may be produced, there seems no difference of opinion as to its value in our atmosphere, for the majority of chemists are agreed that it is the "great purifier," and no one can attribute any deleterious influence to it. Ozone is rarely found in dwelling-rooms, as it is decomposed in the process of oxidising the organic matter present, and it is only when a number of flowering plants are introduced that ozone in any appreciable quantity can be detected. Dr. Anders has, during the last three or four years, devoted much of his le sure time to an investigation of the question whether flowering plants exhale ozone, and in 1882 he commenced a series of experiments ln the Horticultural Hall of Fairmount Park, Philadelphia, which have enabled him to answer definitely and decidedly in the affirmative. In an interesting review of the subject, which he has contributed to some recent numbers of the American Naturalist, he leaves to the expert chemist the determination of the real nature and properties of ozone, and proceeds to explain how he has discovered that it is exhaled from flowering plants. It was thought at one time that the green parts of plants evolved ozone under the influence of the sun; but lately it has been accepted, principally on the evidence of Cloez and Bellucci, that the change in the iodised test-paper, supposed to be due to ozon, is really caused by the action of moisture, oxygen, and light. The first experiments of Dr. Anders were made in the main hall of the buildings at Fairmount Park, which is 220 feet long, 100 feet wide, with curvilinear 100fs, 65 feet high in the centre. This house corresponds to what is known as the Palm-house at Kew, and is filled with similar plants, the average temperature being 70° Fahr. Alongside is the Fern-house, the forcing-house, the temperate-house, the propagating-house, and the economic-house, each about 100 feet by 30 feet by 20 feet. Many of the first tests were negative, amongst other reasons because the houses were daily visited by considerable numbers, and the ozone, assuming any to have been present, would be used up in oxidising the organic matter given off from the lungs of the visitors. The next series of experiments were com-menced in February, during which month only an The next series of experiments were comoccasional visitor was nemitted, and the chief result was that in the propagating-house the action was found to be greater than in the external air, though even then the colouration was marked as "very slight." He obtained positive evidence that flowering plants at any rate exhale ozone, and it became necessary to repeat the experiments out-of-doors, and to ascertain whether the reactions indicated by the test-papers were really caused by ozone. Accordingly a plant case was removed to the "back yard," where the plants received the sunshine for at least eight hours daily during clear weather, and gave still stronger evidence of their power in colouring the test-papers, probably because the situation was better calculated to enable them to exert their influence, and also because the experiments were of longer duration. A piece of red litmus suspended in the case gave no indication of the presence of ammonia, and peroxide of hydrogen could have nothing to do with the effects observed on the test-papers, because the temperature of the air within the case, which was carefully noted, was never found less than 90°, or 20° higher than the point at which peroxide of bydrogen is decomposed. Dr. Anders satisfied himself by several repeated tests that the reactions were not due to nitrous oxides, and that being the case, the conclusion is inevitable that flowering plants exhale ozone. A trial with foliage plants having soft thin leaves gave negative results. Seven plants of what Dr. Anders calls asperdisteus (probably Aspidistra), one Fern, and three Dracænas were placed in the case for a week, the weather being extremely warm, the temperature of the air in the case ranging from 85° to 100° Fahr. The Schönbein papers gave negative results throughout, and those prepared with guaiacum gave one "very slight reaction." As the first experiment with what Dr. Anders calls inodorous plants did not yield any very definite results, a further trial with seventeen healthy Pelargoniums was made for six days, the observations being taken during ten hours on each day. The

Schönbeins gave one negative, and two "slight," three "marked" blue shades, the negative result occurring on a rainy day when there was no sunshine whatever. Further observations were made on these plants with similar results, and the conclusion again is inevitable, that flowering plants, even when inodorous, exhale ozone. The experiments also prove that sunshine, or at least strong diffused sunlight, is as essential to the generation of ozone by plants as it is to the work of assimilation and transpiration carried on by them. English Mechanic.

SURVIVALS.—The tich and rank vegetalion that surrounds the neatly-built houses is most amazing, compared with the barrenness outside. I saw some remarkably fine clumps of Euphorbias as I entered the village of Vellálá, and further on, some handsome Dracænas or Dragon trees in full hlossom, with graceful sprays of small cream-coloured flowers depending from among the spiky leaves; the general aspect of the plant recalling the Yuccas, to which it is not distantly allied. It is the first and only time that I remember to have seen this Dracæna on the Congo, and it seems curious to find it preserved thus in a village. Indeed, it is an interesting fact that so many plants should be found growing in the villages in this part of Africa, which are never seen in the open. The Euphorbias, for instance, I have never seen in a wild state, so to speak, but they exist in all the villages on or near the Congo from Yellala to Bolobo. Their native name in Congo is "Ndiza," but although they are known and named, I never could ascertain that any superstitious value or importance was attached to them, which would serve to explain was attached to them, which would serve to explain their constant presence in native towns; perhaps the real solution of this fact, as also of the presence of large trees and luxurlous vegetation round the villages, is that all the uninhabited country is periodically set on fire by the natives, and that only periodically set on the by the natives, and that only in those places which the bush-fires do not reach can rich vegetation and forest trees exist. It is evident, and, indeed, the fact has struck Stauley, Schweinfurth, and most observant African travellers, that the grass fires must largely affect the "phytography" of Africa. "The River Congo," by H. H. Johnston, F.Z.S.

The Menther.

STATE OF THE WEATHER AT BLACKHEATH, LONDON,

Month and Day.	BAROMETER.		TEMPERATURE OF THE AIR.					duo fi Gla Tab	grome- al De- tions com isher's les 6th ition.	Wind.	ب
	Mean Reading Reduced to 32° Fahr.	Departure from Average of 18 years.	Highest.	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 50 years.	Dew Point.	Degree of Humidity. Sat. = 100.	Average Direction.	RAINFALL
June	In.	In.									In.
12	30.14	+ 0.35	75.0	54.0	21.0	63.3	+ 4.8	61.2	93	E.	II.C
13	30,06	+0.28	75.0	51.5	23.5	63.2	+ 45	62.4	98	E	0 0
14	30.10	+ 11.32	73 0	\$5.0	18.0	6r.6	+ 2.7	60 3	95	N	0.0
15	30.09						→ 2.6		71 {	N W. : W. NW	0.0
16	30.00	+ 0.22	64.0	51.0	13.0	55.2	- 39	52.8	92	N.	D D
17	29,99	+0.21	62.2	42-5	14.7	54.7	- 46	47-7	77	N.W.	0.0
18		+0.24						47-9	85	N.	0.0
				_	_	_		_			-
fean	30,06	+0.28	67.8	51.0	16.8	58.3	— D.7	54.2	87	N.	D.0

June 12.—Very fine day and night.

13.—Fine hright day, overcast at midnight.

14.—Very fine hright day and night.

15.—Fine day, sun shining occasionally, overcast at midnight.

mdongut.

16.--Duil day and oight.

17.--Fine and hright generally, nearly overcast at midnight.

18.--Duil, overcast day and night.

LONDON: Atmospheric Pressure.—During the week ending June 14, the reading of the barometer at the level of the sea increased from 29,71 inches at the beginning of the week to 30.19 inches by midnight on the 10th, decreased to 30.18 inches by 9 A.M. on the 11th, increased to 30.31 inches by 9 A.M. on the 12th, decreased to 30.30 inches by 3 P.M., and increased to 30.34 inches by midnight on the same day, decreased to 30.19 inches by midnight on the 13th, and was 30.33 inches by the end of the week.

The mean reading of the barameter for the week at the level of the sea was 30.13 inches, being 0.41 inch higher than last week, and 0.16 inch above the average of the week.

Temperature.— The highest temperature in the shade in the week was 75°, on the 12th and 13th; the highest on the 9th was 55°. The mean of the seven high day temperatures was 66°.1.

The lowest temperature was 44°.5, on the 9th; on the 13th the lowest temperature was 49°.7.

The greatest range of temperatures was 49°.7.

The greatest range of temperatures was 49°.7.

The sea of the seven low night temperatures was 49°.7.

The mean of the seven down just temperatures was 25°.5, on the 13th; the smallest was 9°.7., on the 8th. The mean of the seven daily ranges was 16°.4.

The mean temperatures were—on the 8th, 51°.5; on the 9th, 48°.9; on the 10th, 53°.3; on the 11th, 51°.3; of these the first four were below their averages by 6°.2, 9°, 4°.5, and 1° respectively, and the last three were above by 4°.8, 4°.5, and 2°, 7 respectively.

The highest reading of a thermometer with black-ened bubl in vacuo placed in the full rays of the sun was 135°, on the 14th. The mean of the seven readings was 100°.7.

The lowest reading of a minimum thermometer with its bubl placed on grass was 30°.5, on the

ings was 100°.7.

The lowest reading of a minimum thermometer with its bulb placed on grass was 39°.5, on the 11th. The mean of the seven readings was 42°.5.

Rain fell on two days to the amount of 0.15 ioch.

ENGLAND: Temperature.—During the week ending June 14 the highest temperatures were 83° at Hull, 82°, 1 at Nottingham, 81° at Leeds; the highest at Brighton 69°, 3, and at Truro and Bristol 72°. The general mean was 76°.

The lowest temperatures in the week were 40° at Truro, at Wolverhampton 40°.4, at Plymouth 42°s, the lowest at Preston was 47°, at Liverpool 45°.9, and at Leicester, Hull, and Leeds 45°. The general mean

was 43.7.

The greatest ranges were 39° at Nottingham, 38° at Hull, 37°.6 at Wolverhampton; the smallest ranges were 24°.8 at Brighton, 26° at Preston, 28°.7 at Liverpool. The general mean was 32°.9.

The mean of the seven high day temperatures was highest at Nottingham, 70°.6, at Cambridge 69°.3, at Leicester 67°.2; and was lowest at Bolton, 62°.6, at Liverpool 63°.5, at Bradford 63°7. The general mean was 65°.6.

The mean of the seven low night temperatures was

mean was 65°.6.

The mean of the seven low night temperatures was highest at Plymouth, 51°, at Liverpool 49°.8, at Truro and Blackheath 49°.7; and was lowest at Wolverhampton, 45°.4, at Bolton 45°.9; at Nottingham, 46°.8. The general mean was 48°.3.

The mean daily range was greatest at Nottingham, 23°.8, at Cambridge 21°.6, at Hull 19°.2; and was least at Plymouth, 13°.5, at Liverpool 13°.7, at Preston 14°.6. The general mean was 17°.3.

The nean temperature was greatest at Blackheath.

Preston 14%.6. The general mean was 17°.3.

The mean temperature was greatest at Blackheath, 57°, at Nottingham 56°.9, at Cambridge 56°.7; and was lowest at Bolton, 52°.4, at Wolverhampton 53°, at Bradford 54°.2. The general mean was 55°.2.

Kain.—The largest fall was 0.83 inch, at Preston, 0.79 inch at Bristol, 0.73 inch at Bradford; the smallest fall was 0.03 inch at Plymouth, 0.06 inch at Hull, and 0.08 inch at Liverpool. The general mean fall was 0.35 inch. No rain fell at Truro.

SCOTLAND: Temperature.—During the week ending June 14, the highest temperature was 73°.1, at Edinburgh; at Glasgow the highest was 62°. The general mean was 68°.

The lowest temperature in the week was 37°, at Glasgow; at Leith the lowest temperature was 44°.S. The general mean was 41.°2.

The mean temperature was highest at Edinburgh 55°.2; and lowest at Aberdeen, 52°.9. The general

mean was 53°.9.

Rain.—The largest fall was 0.48 inch, at Edinburgh; and the smallest fall was 0.05 inch, at Dun-dee. The general mean fall was 0.21 inch. No rain fell at Glasgow.

JAMES GLAISHER, F.R.S.

Answers to Correspondents.

AQUILEGIA: S. & M. The deformity in question is due to the absence of the petals, and constitutes the variation sometimes called the "stellate," or star-like Columbine. It is not uncommon.

ARAUCARIA: T. Leslie. Please send the photograph on paper for approval.

AUBRIETIA: S. & M. We have compared your Aubrie-NURBERTIA: S. & M. We have compared your Aubric-tia with almost spent flowers of violacea and Hender-soni, and find both these named kinds very much fuer and deeper in colour, though less highly coloured now than they were several weeks since. Your kind ex-actly resembles what either of these kinds will often give from seed, and whilst doubless exceedingly pleasing in a mass, will not compare with the cerufi-cated kinds.

CROSSING POTATOS: B. You should take care to cut away the stamens with a fine-pointed pair of scissors, and this you can the more readily effect as the stigma is (in the flowers we have seen) ripe before the

anthers, and projects beyond them before the authers open. Having isolated the stigma in this way, and covered it with a bag of muslin, to prevent access of insects, you can apply the pollen with a camels'-hair brush from some other variety as soon as you see the stigma is ready—that is, when it becomes moist on the surface. It is of no use doing so before.

The Surface. It is it to use only so better.

The Hydrangea was certainly seen by the committee, or Mr. Barron would not have sent the letter of thanks which you enclose to us. As for ourselves, we do not undertake to notice everything sent to the committee meetings, and which are not considered worthy of an award.

FOXGLOVE VAGARIES: To Numerous Correspondents, The state of affairs is by no means uncommon, and is the consequence-of the running together of several of the upper flowers. No two specimens are quite alike, and no one as yet has given a satisfactory reason why,

FUNGUS ON LILY OF THE VALLEY LEAVES: T. Heb-den. The fungus Puccinia betonice has always been very common, but that on the leaves sent, Ecidium convallariae, has occurred in Britain this year for the first time. We hope to illustrate it in an early number.

Inst time. We hope to illustrate it in an early number.

GARDENERS' ROYAL BENEVOLENT INSTITUTION.—

We have received the following donations from gardeners for the benefit of this Institution, and shall be glad to receive others:—J. H., 51.; H. W., Liss, 51.;

C. F. P. (annual), £1.15. Small contributions (where larger cannot be spared) will be thankfully received.

MOTH: D. M. L. We were unable to identily it.

MOTH: D. M. L. We were unable to identily it.

NAMES OF PLANTS: H. C. r and 3, Festuca elatior;
2, F. sylvatica; 4, Avena flavescens; 6, Authoxanthum Puelli,—E. W. 1, Thalicitrum feetidum; 2, not
recognised; 3, Lilium pomponium; 4, Sedum reflexum.—W. L. B. Biguonia grandiflora. W. Freiti.
We have been unable to identily the MaseVeralla, and
the flower is not fresh enough to send to Prof. Reichenbach.—D. C. 1, Festuca ovina; 2, specimen destroyed; 3, Poo pratensis; 4, Anthoxanthum Puelli,
probably.—IV. B. C. M. 1, Anemidictyon Phyllitidis; 2, Adiantum concinaum; 3, A. concinaum,
small form; 4, Asplenium Fabiaum.—A. R. L. Epidendrum fragrans.—J. W. The true Amaryllis reticulata.

Cuiata.

P.EONIES: H. A. Fairlie. Mr. T. S. Ware, Hale Farm Nurseries, Tottenham.

PANSIES: Y. Forbe. Your named sorts of Pausies appear to be a very good lot, but as you have not sent any names we cannot particularise them. For the most part they are large, well varied, and bright in colour, but we do not note any good yellows among them.

VINE DISEASE: Y. Z. We do not remember to have seen this before. The case is under investigation. There is a fungus growth, but of what nature is not

INTELLIGENT READERS, PLEASE NOTE: — Letters re-lating to ADVERTISEMENTS, or to the supply of the Paper, should be addressed to the Publisher, and NOT to the Editor.

CATALOGUES RECEIVED.

J. H. Krelage & Son, Haarlem—Dutch Flower Roots, and other Bulbous and Tuberous Rooted Plants. Damman & Co., Portici, Naples—Seeds.

Markets.

COVENT GARDEN, June 19.

OUTDOOR Strawberries are now in moderate supply, but owing to the dull weather are far from good. Business continues its improvement, and prices are we maintained. James Webber, Wholesale Apple Market.

FRUIT.-AVERAGE WHOLBSALE PRICES.

VEGETABLES.—AVERAGE RETAIL PRICES.

PDTATOS.-Keat Magnums, 8os. per ton; do., Regents, 100s. to 120s.; Champions, 70s. to 85s. No. 8s. 10 11s. per cwt.; Round, 6s. to 8s. New - Jersey Kidneys,

LAWN-EDGE CLIPPER and Tuif Trimmer

and Turi Trimmer
Price 15s.: 20s., bist
Varranted very
much superier to any
other implement for
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cut when moved
either backward or
toward. thereby

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.					
s. d. s. d.	s. d. s. d. Fuchsias, per doz 4 0-12 0				
Aralia Sieboldi, doz.12 0-24 0	Fuchsias, per doz 4 0-12 0				
Arbor-vitæ (golden),	Hehotrope, doz 6 0-12 0				
per dozen 6 o-18 o	Hydrangea, per doz. 9 0-18 0				
- (common), dozen 6 o-12 o	Lilium longiflorum,				
Begonias, per doz 6 o-12 o	per dozen30 0 48 0				
Calceolarias, per doz. 6 o-12 o	Marguerite Daisy,				
Cyperus, per dozen 4 o-12 o	per dozea 8 a-18 a				
Dracæna term, doz30 0-60 0	Mignonette, per doz. 4 o- 9 o				
- viridis, per doz 12 0-24 0	Myrtles, per doz 6 0-12 0				
Erica, various, doz.12 0-48 o	Palms in var., each 2 6-21 0				
Euonymus, various,	Pelargoniums (show)				
per dozen 9 0-18 0	per dozen 6 0-18 0				
Evergreens, in var.,	- scarlet, per doz 4 o 12 o				
per doze 6 o-24 o	Petunias, per dozen 6 o-12 o				
Ferns, in var., dozen 4 o-18 o	Rhodanthes, p. dozen 6 o- 9 o				
Ficus elastica, each 1 6- 7 0	Roses, each 2 0- 3 0				
Foliage Plants, vari-	Spiræa, per dozen 8 o-12 o				
ous, each 2 0-10 0	Spiræa palmata, doz.18 o 30 o				

CUT FLOWERS .- AVERAGE WHOLESALE PRICES.

s. d. s. d.	s. d. s. d.
Abutilon, 12 bunches 2 0- 4 0	Nemophila, 12 bun. 1 0- 1 6
Anemones, 12 bun 2 0- 4 0	Pæony, 12 blooms 1 0- 2 0
Arum Lilies, 12 blms, 3 0- 6 0	- 12 bunches 6 0-12 0
Bouvardias, per bua. o 9- 1 o	Pelargoniums, per 12
Calceolaria, 12 sprays 1 0- 1 6	sprays o 6- r o
Carnations, 12 blms. 1 o- 3 o	- zonal, 12 sprays o 4- o o
Cornflower, 12 bun 2 0- 4 0	Picks, various, 12 bun, 2 0- 6 0
Eschscholtzia, 12 bun. 2 0- 4 0	Primula, double, bun. 1 0- 1 6
Eucharis, per doz 4 o- 8 o	Pyrethurm, 12 bun, 2 0- 6 o
Forget me-not, 12	Ranunculus, 12 bun. 2 o- 4 o
bunches 2 0- 6 0	Rhodanthes, 12 bun. 6 0-12 0
Gardenias, 12 blms 3 o- 6 o	Roses (indoor), doz, 1 o- 4 o
Gladiolus, various,	- (outdoor), 12 bun. 4 0-12 0
12 bunches 2 0- 9 0	- coloured, doz 2 o- 6 o
Heliotropes, 12 sp o 6- 1 o	Stephaootis, 12 spr. 2 6- 4 o
Iris, various, 12 bun. 3 0-12 0	Stocks, 12 bunches 3 0- 6 0
Lapageria, white, 12	Sweet Peas, 12 bun, 2 o- 6 o
blooms 3 0- 6 o	Sweet Sultan, 12 bun, 4 0- 9 0
- red, 12 blooms,, 1 o- 3 o	Tropæolum, 12 bun, 1 6- 3 o
Marguerites, 12 bun. 3 o- 6 o	Tuberoses, per doz o 6- 1 6
Mignonette, 12 bun. 3 o- 9 o	White Jasmine, hun, o 6- 1 0
migaonetec, is baar 3 0- 9 0	

LONDON: Tune 18.—The market to-day was most thirdy attended with but little business doing. There is still a good sale for spring Tares, and the already limited stocks are of course further reduced. New French Trifolium is now offering, but no attention is yet being paid to same. Mustard and Rape seed continue to move off in small lots. There is a better inquiry for blue boiling Peas and Haricot Beans. Feeding Linsced is firm. Tohn Shaw & Sons, Seed Merchants, 37, Mark Lane, London, B.C.

CORN.

At Mark Lane on Monday there was nothing in Wheat pressing for sale at quotably reduced rates, although the tendency was in buyers' favour. Flour was dull of sale, and barely steady on the week. Maize showed 6d. decline. Beans and Pens were quoted the same as on Monday week, but Lentils were a decline of 1s. There was no improvement in the market for common Oats, which were 6d. to 9d. lower than on Monday seringht; fine Oats, on the contrary, were firm and dearer.—On Wednesday the prices of Wheat and flour were unaltered, the properties of the contrary of the contrary were firm and flour were maltered, when the tentile in the price of the contrary were firm and the price of the contrary were firm and the price of the contrary were firm and the contrary were contrary to the contrary were firm and the contrary were contrary to the contrary to but the tendency was rather adverse to holders. Barley met but little inquiry, and was the turn cheaper to sell. Beans and Peas renained unaltered. For common Oats the market was weak, but firm for fine. Round Maize was held rather more firmly, but flat corn was dead.—Average prices of corn for the week ending June 14;—Wheat, 37.4.4.; Barley, 28; 3d.; Oats, 21s. 5d. For the corresponding period last year:—Wheat, 42s. 9d.; Barley, 25s. 6d.; Oats, 22s. tod.

CATTLE.

At the Metropolian Market on Monday there was a very good assortment of English cattle, no Scotch, and from abroad Canadians of good useful quality, which averaged gs. to 55. 2d. A few Danish and Swedish soid at 4s. 6d. to 5s. 2d., and 4s. 6d. to 4s. 8d. respectively. Sheep and lambs met a slow sale, with a tendency in favour of buyers. Calves met a very slow sale, and Swedish, which comprised the bulk of the supply, were depressed in value. Quotations:—Beasts, 4s. to 5s., and 5s. 2d. to 5s. 2d.; calves, 4s. 8d. to 6s. 4d.; sheep, 4s. 1od. to 5s. 4d., and 5s. 6d. to 6s.; lambs, 7s. to 7s. 6d.; plag, 4s. to 4s. 6d.—Thursday's trade showed more firmness. Beasts sold at full prices, with a fair demand. Sheep and lambs were steady in value, business being moderately active; and calves and pigs were quieter.

HAY,

HAY.

Tuesday's Whitechapel Market report states that supplies were large and the trade firm. Top rates of best Clover and hay advanced 1s. per load. Quotations:—Prime old Clover, 955. to 1165.; Inferior, 6ss. to 755.; prime second cut, 905. to 1122.; best mendow hay, 805. of 95s.; joint stawa, 28s. to 37s. per load. — On Thursday there was a good supply. Trade was steady, and prices were firm. — Cumberland Market quotations:—Superior Clover, 108s. to 1165.; inferior, 65s. to 76s.; superior Clover, 108s. to 1165.; inferior, 84s. to 95s.; and straw, 34s. to 38s. per load.

POTATOS.

New Potatos are plentiful, and trade is now rather limited for old descriptions. The quotations to hand for the week are as follows:—Magnim Bonums, 80.. to 100.; Champions, 30.. to 60.. per ton; new—Jerseys, 61. 109.; (Cherbourgs, 7s.; St. Malo, 65. do. to, 51. isbbons, 55.; Maltas, 55. per cwt.—The imports into London hast week were:—934 cases from Bordeaux, 1600 boxes 3166 packages lashon, 638 packages 2842 baskets St. Knazire, 2300 packages Jersey, 1188 cases Cherbourg, 35 tons St. Malo, and 3 bags from Orotava.

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z yard wide, 3d.; z½ yard, 4\frac{1}{2}d.; acd 2 yards, 6d. per yard.
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-incb 7 0 14 0 21 0 28 0	_

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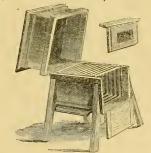
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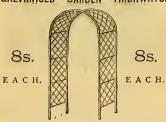
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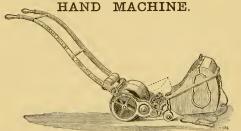
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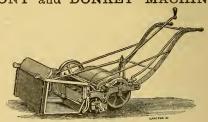


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SATURDAY, JUNE 28, 1884.

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R Y S T A L P A L A C E.

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SATURDAY, July 5. For Schedules, &c., apply, Mr. W. G. HEAD, Garden Superintendent.

TWICKENHAM HORTICULTURAL and
COTTAGE GARDEN SOCIETY.
The FIFTERNH ANNUAL SHOW will be held on
TUESDAY, July r. Schedules and all particulars can be
obtaneed on application to
ALEX ALIERRY, Hon. Sec.
Cedar Villa, St. Margaret's, Twickenham.

ULL BOTANIC GARDENS,
HORTICULTURAL EXHIBITION,
JULY 2, 3, and 4. Schedules and particulars of

PHILIP MAC MAHON, Curator and Secretary. Botanic Gardens, Hull.

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HORTICULTURAL SOCIETY.
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Roses, open to all England. Entries Close, July 8. Schedules
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ISAAC SMITH, Secretary.

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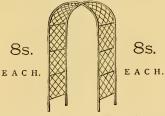


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THE

Gardeners' Chronicle.

SATURDAY, JUNE 28, 1884.

PETWORTH AND THE PERCIES.

(Concluded from p. 795.)

WE now approach another catastrophe in the succession of this ancient house, when the direct line failed. Having introduced in our last rapid narrative by far the most in-teresting of all the Percies, except Hotspur, who owes his fame to chivalry and Shakespeare, we must now descend to a very good sort of man, "Knight of the Garter, and Lord High Admiral of England," son of the scientific and long-time incarcerated ninth earl. Living during the Civil War, and siding with the Parliament he found his chief delight, when the war was over, in his gardens and plantations at Petworth. At Northumberland House the plan of restoring Charles II., was concerted between him and General Monk.

The catastrophe occurred on the death of his son Josceline, eleventh earl. The name of the first Baron Petworth, be it observed, was Algernon, and the same name has been borne by many of his successors, including the present duke. Against the name of Josceline, the eleventh earl, the word finis may be written, for he was the last Earl of Northumberland of the house of Josceline de Louvaine. All that need be said of him further is that he died.

The tomb of his heiress, the Lady Elizabeth, is in the Percy Chapel of Westminster Abbey, where she slumbers in peace, of which she could have had but little, one would think, in her youth, for at her father's death an immediate scramble ensued for her hand and land. She was married for the second time at the age of fifteen, her first husband, Henry Cavendish, Earl of Ogle, having been buried at Petworth within a year of the marriage. She was then betrothed to Thomas Thynne, of Longleat, who missed the prize, being murdered by a foreign rival, Count Konigsmark. At the age of fifteen the Lady Elizabeth was safely married to proudest man who ever ruled at Petworth, Charles Seymour, Duke of Somerset. The duke lived in royal state at Petworth, and the strictest rules were observed relating to his diginity. No person in his household allowed to turn his back upon his Grace. His children-there were thirteen-never presumed to seat themselves before their father. The servant who blew the fire in his presence-fires were of wood then, and bellows were much used -did so standing with his back to the fire, bellows reversed. A daughter stood on each side of this very great man's chair during his afternoon nap, and the Lady Charlotte being tired or ill, and having dared to sit down, had her legacy reduced to £20,000 in her father's will. The great heiress who had married him never forgot his pride of birth, and he on his part loved her better for being a Percy; and when her successor, Lady Charlotte Finch, tapped the duke on the shoulder with her fan (and a lady's fan is the sceptre of the world), he turned upon her with a sharp reproof and eulogised his first duchess,

who would never have taken such a liberty.

During the erection of the Somerset Hospital at Petworth the duke came on visits of inspection, which are still traditionally remembered. He used to arrive from the adjacent park in a sedan chair, all carved and gilded, and carried by majestic serving men. A running footman cleared the way with a silver-topped staff, and two others marched, with silver-headed sticks, one on each side of the chair. The duke's foibles, however, were but little blemishes, and his virtues were considerable; his duchess, the heiress, loved him, and so did Queen Anne. He was a staunch Protestant. When James II. bade him attend the Pope's Nuncio to his audience, he refused. Such attendance, he 1688 he offered his services to the Prince of Orange, and at the critical moment of Anne's decease he was in Council at Kensington, whither he had hastened to aid in securing the Protestant succession.

In 1703 the King of Spain paid a visit to Petworth, and ate and drank very heartily, sitting at the middle of an oval table. He brought his wine with him-"strong red and white Tyrol"-and drank off a glass tumblerful at a time. He had an odd way of disposing his bread in small bits laid upon a plate, and covered with a napkin, and he helped himself bit by bit, keeping the plate always covered on his left hand. His wine was brought to him in a small bottle, carefully concealed or covered up. He exhibited a strange aversion against dogs, and on one of the duke's dogs entering the dining-room the animal was instantly but very quietly removed by the king's attendants, who used every possible precaution to prevent him seeing it. King Charles of Spain, afterwards the Emperor Charles VI., came to Petworth on December 28, and again on his return from Portsmouth on December 31. The roads were extremely muddy, and in passing from Godalming to Petworth his Majesty's coach had to be propped, and the attendants in the first coach were three times overburied. In 1782 Dr. Johnson came to Petworth (see Boswell's Johnson, vol. v., p. 38).

The Duke of Somerset lived during the reign

The Duke of Somerset lived during the reign of Charles II., James II., William and Mary, George I., and George II., and attended the funerals of most of these monarchs. He died in 1748, a very old man, and was buried at Petworth, having built the present palatial mansion.

After the "proud duke" came his son, the seventh Duke of Somerset, and owner of Petworth, which passed to him under his mother's settlement. He had previously succeeded at her death to the barony of Percy, a title she held in her own right, and had been created Baron Warkworth and Earl of Northumberland in his father's lifetime. The title had been extinct seventy years, since the death of Josceline, eleventh earl; it was now revived in favour of a family who were Percies in blood though not in name, and in default of heirs male it was to devolve on Sir Hugh Smythson, Bart., who had married the new earl's and prospective duke's only daughter. In the first year of his dukedom this son of the last daughter of the Percies was also created Baron Cockermouth and Earl of Egremont with remainder, in default of male issue, to his nephew Sir Charles Wyndham, eldest son of his sister Lady Catherine Seymour, who had married Sir William Wyndham, the greatest statesman of the reign of Anne.

Within two years the duke was dead. Sir Hugh Smythson was Earl of Northumberland, and Sir Charles Wyndham, Earl of Egremont, and owner of the manor of Petworth. The first-named nobleman assumed the name of Percy, and was raised to the dukedom in 1766—the last-named died in 1763, when George O'Brien Wyndham, third Earl of Egremont, succeeded him at the age of twelve years. The heritage

of the Percies was now finally divided between the restored house of Percy and the house of Wyndham, each sharing alike the blood of Hotspur through female succession.

Petworth is still held by the descendants of the Earl of Egremont, and Lord Leconfield, his grandson, is a wealthy and worthy agriculturist, country gentleman, and master of foxhounds. The twelve-years-old Earl of Egremont of 1763 became one of the great agricultural improvers of his time, as well as a patron of the fine arts. Several of the rising artists of his day were sheltered in his house and aided in their early struggles by his excellent advice and liberal purse. During sixty years he spent f,20,000 a year in the improvement of his property, Arthur Young and similar adepts in farming being among his frequent guests and advisers. He was one of the first of the great land proprietors of the early part of this century who, in default of agricultural societies and the existing methods of assembling country folk, held great meetings, sheep shearings, and ploughing matches at their houses, and thus brought agriculturists and men of science The Petworth meetings vied with together. those of Woburn and Holkham, but these were not the only means by which "the great Lord Egremont," as he was called in his county, endeavoured to benefit his neighbours. A well known author and visitor at Petworth gives the following account of one of Lord Egremont's feasts to the poor in 1835* :-

"He had arranged it in the open air, and a fine sight it was-fifty-four tables, each 50 feet long, were placed in a vast semicircle on the lawn before the house. Nothing could be more amusing than to look at the preparations. The tables were all spread with cloths and plates and dishes; two great tents were erected in the middle to receive the provisions, which were conveyed in carts, like ammunition; plum puddings and loaves were piled like cannonballs, and innumerable joints of boiled and roast beef were spread out, while hot joints were prepared in the kitchen and sent forth as soon as the firing of guns announced the hour of the feast. Tickets were given to the inhabitants of a certain district, and the number was about 4000; but as many more came, and the old peer could not endure that there should be anybody hungering outside his gates, and he went out himself and ordered the barriers to be taken down, and admittance given to all. think 6000 were fed. Gentlemen from the neighbourhood carved for them, and waiters were provided from among the peasantry. food was distributed from the tents, and carried off on hurdles to all parts of the semicircle. A band of music paraded round, playing gay airs. The day was glorious—an unclouded sky, and soft southern breeze. Nothing could exceed the pleasure of that fine old fellow; he was in and out of the windows of his rooms twenty times, enjoying the sight of these poor wretches, all attired in their best, cramming themselves and their brats with as much as they could and their brats with as much as they coind devour, and snatching a day of relaxation and happiness. After a certain time the women departed, but the park gates were thrown open, all who chose came in and walked about the shrubbery and up to the windows of the house. At night there was a great display of fireworks, and I should think at the time they began not less than 10,000 were assembled. It was alto-gether one of the gayest, most beautiful spec-tacles I ever saw; and there was something affecting in the contemplation of that old man, on the verge of the grave, from which he had only lately been reprieved, with his mind as only lately been reprieved, with his mind as strong and his heart as warm as ever, rejoicing in the diffusion of happiness, and finding a keen gratification in relieving the distress and con-tributing to the pleasures of the poor."

This last Earl of Egremont, heir of the O'Briens and Wyndhams, and part heir of the Percies, lived to complete his eighty-fifth year, and left his estates to his son. H. E. [For some account of the gardens at Petworth, see pp. 491, 523, of vol. x. E.]



CŒLOGYNE DAYANA, n. sp.*

WE have had recently before us two noble Ceelogynes, with leaves like those of Plantago major, and long flaccid pendulous racemes of brown flowers with tomentose ovaries, the old Ceelogyne tomentosa of Dr. Lindley, and the new C. Massangeana. The first one, for a long time only known by a dried specimen presented by Messrs. Veitch, and a discovery of the gallant T. Lobb, has at last flowered with Mr. A. D. Berrington, M.P., Abergavenny; the second one is a new species, which flowered first in the Cattleya paradise of Mons. Massange de Louvere, of Faillowille, but which has been found since elsewhere, and is perhaps an original introduction of Messrs, Jacob Makoy & Co., of Lièce.

Now Messrs. Veitch bring out a third species, quite a worthy rival of the other two, but much nearer to Coelogyne tomentosa, on account of its acute sepals and petals. It was imported from Borneo. The long parrow fusiform bulbs have stalked oblong acuminate leaves. The long lax inflorescence had twenty-three flowers, equalling those of Coelogyne tomentosa. The deciduous bracts are rhomboid, blunt. The sepals and petals do not need a long description: they are ligulate acute, as stated above. The lip is broad, three-lobed, the side lobes blunt, undulate, central-lobe reniform, apiculate, crenulate, transverse. The whole appears to be of the lightest ochre colour, with numerous dark brown collateral longitudinal broad stripes on the lateral lobes, and on the same light ochre ground, a crescent shaped half ring of dark brown opening towards the base on the middle lobe. Two plaited keels run from the base of the lip to the base of the mid-lobe, where they are divided into six similar keels, covered with the most lovely partly denticulate undulations. On each side the upper part of the base runs out into a short retrorse carinate line. The slender column has an emarginate border to the androclinium on the back of the anther.

The species is dedicated with the greatest satisfaction to Mr. J. Day, this time at the suggestion of Mr. Harry Veitch. I had another Corlogyne of somewhat inferior beauty, destined to bear Mr. J. Day's name, so that this excellent gentleman, whose name is so thoroughly connected with Orchids, could no longer escape commemoration by a Corlogyne. H. G. Rehb, f.

FLOWERS IN SEASON.

MR. BUREIDGE sends us a copious supply of specimens to show what is in bloom in Dublin. Fine bunches of Spanish Iris, yellow, blue, bronze, and gold; Delphinlum Barlowi, magnificent in its metallic purple sheen; Cheiranthus mutabilis, with flowers of yellow and lilac; Phacelia sp., fine spikes of Gladiolus Colvillei, and of the white variety The Bride, the donble-flowered Rocket, so useful for cutting purposes, and many others, among which we may specify the following:—

FUNCIA MACULATA, a form with the disc of a pale yellowish white colour, surrounded by a narrow belt of green. Occasionally a natrow green stripe runs down the disc along the course of the nerves. This is a very effective plant. Mr. Burbidge also sends us leaves of the same species, but with only a relatively narrow white band in the centre prolonged down the leaf-stalk. May we suppose that slugs and snails were generously included among reptiles, when St. Patrick drove those creatures out of Ireland? The question suggests another, Did the slugs then all migrate to the London clay? Be this as it may, it is within our experience, that nothing but the most determined vigilance, and that not always, will preserve Funckias

^{*} The Greville Memoirs, 1874, vol. i., p. 84.

^{**} Calagyne Dayana, n. sp.—Aff Cel'gyni tomeatose et Massaogeaum; ps-ud bu bo pyratormi graciit; folis breve periodats obiuspis acuminatus raceno laxifico pendulo; bracteis rhombodes obtuse acuto decidus; ovarnis tomeatoss; sepalis chombodes obtuse acuto decidus; ovarnis tomeatoss; sepalis chombodes obtuse acuto decidus; ovarnis tomeatoss; sepalis chombodes obtuse acuto decidus; mediano transverse renformi apiculato; carrois elegantis-sime pitcats a basi, labeli in basan lobi auterioris, carinis belissime phicigeris ibi senis, lateralibus paulo rerorsum ascendentibus crure altero; columne androclusio p stuce emanginato. Flores pallide ochracet publiche im bunneto-pitcit. Ex Borneo insula imp. el mete Lond, Veitch. H. & Redo, F.

from falling a prey to these marauders. In another garden, with a gravelly subsoil, the Funckias are allowed to grow in peace, although slugs are by no means absent.

LUZULA NIVEA.—A wiry grass-like plant with slender erect stem, narrow leaves, and small white flowers in terminal heads, each about I inch across. The flower-segments of grasses and rushes, to which latter group our plant belongs, are usually green, or quite translucent; but in this case the perianth segments are opaque white. Their dry consistence would permit of their use for the same purposes as "everlasting" plants.

BAPTISIA LUPINOIDES.—A handsome herbaceous perennial, 2—3 feet, with erect striated stem and ascending branches. The leaves are like those of the Laburoum, but with two large leafy stipules at the base. The numerous yellow Broom-like flowers are arranged in long racemes, and are succeeded by long pods ascending pearly parallel with the stem. The Baptisias are natives of the Eastern States of North America. We are not able to verify the plant, but there is sone of that name in Gray's Manual. Some of the Baptisias yield a bluish dye, and this circumstance is said to have suggested the name, from βαπηζω-τή dye.

MUSCARI COMOSUM.—An old plant, dear to every lover of old-fashioned plants, and dearer still to the comnoisseur in botanical curiosities, for there are here no flowers but a thicket of flower-stalks with rudiments only of flowers. In fact, though at first sight dissimilar, the real state of the case is identical with that presented to us in the Cauliflower. With the dainty monster comes a specimen of the normal inflorescence, long, sleeder, unbranched, with a tendency at the tip for the flower-stalks to become violet and for the flowers to disappear, or rather not to appear at all. Here then we have a pretty illustration of the law of compensation in virtue of which if one part is degenerate (in this case the flowers) another part is more highly developed (in this case the flowers) another part is more highly developed (in this case the flowers) another part is more highly developed (in this case the flowers) another part datract insects to the true flowers below, and thus ensure fertilisation; but in the monstrous plant there are no flowers at all, and we can only suppose that in this case the curiosity of mankind has served to perpetuate what in all probability would otherwise soon become extinct.

BRODIEA CONCESTA. — A bulhous plant, with tall slender scapes bearing at the top crowded head's of blueish-violet Hyacinth-like flowers, each about \$\frac{3}{2}\$ inch long, tubular funnel-sbaped. Those who like to look into things will be interested in the scales inside the flower, recalling the crown of Narcissus or Pancratium, but different from either. In this case the scales are very clearly undeveloped anthers opposite the petals or inner segments of the perianth. The plant is a native of British Colombia.

CLEMATIS ALPINA.—In the splendour of the modern garden forms we are rather apt to overlook the elegance and distinct appearance of the older forms of this genus. The present species, with its very twining stems and tufts of broadly cut 3-parted leaves and pale blue stat-like or bell-like flowers, should by no means be lost sight of.

SPIRÆA HUMBOLDTII? — A fine berbaceous perennial, with large spreading triangular bipinnate leaves, the segments of which are lanceolate acuminate, saw-toothed; the minute white flowers are exceedingly numerous, and borne on the sides of long slender white flower-stalks arranged in a paniculate form.

PULMONARIA SIBIRICA. — A peculiar looking glaucous perennial of the Borage family, differing from most of its relatives in its smooth leaves, which are broadly lanceclate. The flowers are tubular, each about half an inch long, blue, fading off into violet and pale red, and disposed in coiled clusters, according to the wont of the order to which it belongs.

SYMPHYTUM PICTUM.—"A fine border perennial," and so indeed it is. Like the preceding it is a Borage-wort, but its rough leaves, inseparate at the base from the stem, are different enough. The arrangement and form of the flowers is the same, but in this case the flowers are rich velvetty magenta in colour, and very handsome. Five sharply pointed scales alternate with the stamens, which open before he stigma is ripe.

SOLANUM CRISPUM.—A handsome but not nicesmelling, half-climbing shrub, with bold foliage, stalked, cordate, ovate, acute leaves and loose, open, terminal cymes of flat, star-sbaped, violet flowers, from the centre of which protrudes the tuft of yellow anthers.

DISEASE OF YEW.

SPHÆRELLA TAXI (COOKE).

In the Gardeners' Chronicle for December 20, 1879, p. 800, there is a brief reference to the above fungus as the cause of disease in Yews. The disease was first detected by the Hon, and Rev. J. T. Boscawen, in Corowall, and the examples were examined and reported on by Dr. M. C. Cooke. This gentleman at first thought the fungus was a mere consequence of disease, but he afterwards altered his views, and expressed his belief in the Spherella being the cause of the new disease in Yew.

Dr. M. C. Cooke described the species as a new one in Grevillea, vol. vi., June, 1878, p. 129, in the following words:—"Spharella Taxi. Epiphyllous; perithecia gregarious, occupying the whole surface of the leaves, black, slightly prominent; asci cylindrical; sporidia elliptical, apparently uniseptate when mature."

During the last six years the disease has been gradually spreading from Cornwall through Devonshire, Somersetshire, and Dorsetshire, and, as far as our information goes, it has not yet got nearer to London than the counties we have mentioned. The fungus is extremely small and very destructive, and all the accounts we have received confirm Dr.



FIG. 152. - FUNGUS PRODUCING DISEASE IN YEW: SPRAY OF NATURAL SIZE, DETAILS MAGNIFIED.

Cooke's later views, that the ungus attacks the healthy Yews, and sets up disease. In the upper part of fig. 152 we have illustrated a small spray of ew suffering from the disease. The ailment attracts attention, as it causes large numbers of the leaves to become brownish-white in colour, instead of dark green; these dead leaves speedily fall to the ground, and so the tree assumes a naked appearance. The white leaves are shown at the bottom of the spray, and the bealthy green leaves above. When the diseased leaves are examined with a leos they are found to be covered chiefly on the upper side with vast numbers of black dots, so small as to be almost invisible to the unaided eye. Each of these dots is a Sphærella, or "little Sphæria or sphere." A fragment of Yew leaf, with the sphærellæ in situ, is

It is obvious from Dr. Cooke's description, that he had imperfect materials from which his description was drawn up, and as I have recently received for naming excellent and mature specimens of the fungus from Prolessor Buckman, of Sherboroe, I have prepared the following description and accompanying

figure to illustrate the plant :-

The sphwrellæ, as immersed in the flesh of the leaf, are shown in the left-hand bottom figure, enlarged ten diameters. As maturity is reached, the epidermis of the leaf is torn either longitudinally or transversely as shown: each of the black dots in Nature is not larger than a pio's point.

To see the nature of one of these very minute black dots a single example must be selected and cut in two with a sharp lancet. This is a delicate operation. From one of the exposed surfaces of the two hemispheres a thin transparent slice must then be cut off. This is a still more delicate operation. When the slice is cut off, enlarged 100 diameters, and examined with the microscope, it will be seen, as in the middle central figure of fig. 152. The dark shading shows the black cellular investing membrane or "perithecium" of the sphærella; the outer unshaded bladders represent the epidermal cells of the leaf. Within the black membrane a number of sausageshaped bladders may be seen; these are termed asci by botanists, and they each enclose a definite number of spores. Some of the latter are seen emerging from the mouth of the sphærella. To save confusion the spores are not shown in the asci in the central illustration; but a single ascus or bladder is shown on the right packed with eight beautiful sep-tate spores or sporidia. These are the reproductive bodies of the fungus, and at maturity the ascus or bladder bursts at the top, and the spores sail out. If we now place a few of the sporidia under the higher powers of the microscope, and magnify them 1000 diameters, we shall see them as in the three bodies on the bottom right of the illustration, each furnished with three, four, or five partitions or septa, and each piece furnished with a minute lustrous nucleus. Each nucleated piece is capable of germinating and producing a new sphærella. Each sphærella produces from 200 to 250 spores, and a single infested Yew leaf will produce from 50,000 to 100,000.

The Yew is a very hardy subject, and Yew leaves are very firm. The germ threads from the spores can only get inside the leaves by forcing an entrance through the little microscopic mouths or organs of transpiration underneath the leaves. This process, no doubt, presents difficulties, so that the fungus of Yew is progressing but slowly towards the Midlands and the North. As the diseased leaves fall to the ground the fungus with its spores is there preserved in a suitably moist and sheltered position. Wherever the disease is seen the invaded branches or branchlets should be cut off and burnt. W. G. Smith.

ROCK PLANTS AT EDGE IN JUNE.

LAST year several of the most successful cultivators of alpine plants recommended the use of open sandy soil in rockeries; I believe they were right. It encourages the plants to root deeply amongst the stones which retain moisture. Besides coarse sand I find that limestone refuse, obtained at a cheap rate from the lime works, and passed through a sieve of 4-inch mesh, is an excellent material to mix in the soil, and to cover the surface, as it stops evaporation. With this treatment several plants are doing well with which I have hitherto failed.

The Cistineæ rejoice in this dry and sunny season, Cistus seldom survives one winter here, but many have now survived two, and are now bushes more than a yard through. None surpasses C. crispus, with a hundred of its brilliant rose-coloured flowers opening every day on each of half-a-dozen plants. A sandy rockery under a south wall, built for hardy Cacti, which proved a failure, is now filled with Cistus and Helianthemum, which at present are a great success. Helianthemum Tuberaria, a herbaceous rock Rose, is never very successful as an ornament, but is curiously The most showy of this class are the varieties of H, vulgare, single and double. The best is a bright copper-coloured flower, which continues week after week a heap of blazing flowers; I think its name is Fireball. Besides these varieties of the native rock Rose there are several other British kinds of merit. H. polifolium, from Torquay, a free-flowering pure white, is good. But the best yellow which flowers in May and is now over, is H. canum. This plant car-pets the barest parts of the Great Orme's Head, and is thought difficult to establish in cultivation; but by beginning with young plants from seed, or cuttings, and planting in broken stone on the summit of a rockery with hardly any soil, pressing the roots very tight, I find it an easy plant. I was amused to see a miserable scrap with two flowers exhibited in a pot amongst the prize alpines at a recent exhibition and to have my attention called to it as a cultural success, haviog just left at home several plants 4 feet round, with probably more than a thousand open flowers on each; when grown so it is well worth its room. The annual H. guttatum sows itself in the same spot each year, and is neat and rare.

Many leguminous plants are now very good; Astragalus hypoglottis is neat, but few of this genus can be trusted, unless known; they are endless in number, and a large proportion are coarse and untidy. An omospessulanus has a good pendulous habit for perpendicular sides, but the colour is poor. I once had one called A. vagioatus, which was a rich imperial purple in colour; but it died in time, and I never could find the plant again, though the name is common. Then there is the native Hippocrepis comosa, and the Swiss H. helvetica, both very good, the former more elegant and light, whilst the latter quite hides its mass of bright green leaves with its yellow flowers. Perhaps neither of them is better than the common wild Lotus corniculatus. The best of all the class is Coronilla iberica; the large size of its flower bunches, and the even way in which they are distributed, make it one of the most desirable of rock plants. Oxytropis pyrenaica is also good, but hard to establish, wanting the most exposed and driest store.

The Toad-flax tribe has many good representatives. One I seldom see-Linaria origanifolia - though apparently only biennial, flowers every year through June and July, sowing itself about like the commoner L. alpina, from which it differs in being more upright in growth and light purple in colour. A large mass of Linaria pallida is now very showy, though I will not take the responsibility of recommending so erratic a plant, especially for a small rockery. The gem of the tribe is L. anticaria, a dwarf perennial, easily grown, either from seed or cuttings. The flowers are pearly-white, with cross bars of purple on the mouth, and it flowers profusely. Lychnis Lagascæ is a dwarf shrub, in the same sense in which a Wallflower or an Antirrhinum is a shrub, but of far more tender growth than these. It is not more than 4 inches high, and produces a great abundance of bright pink flowers from April to July. It is most conveniently treated as a biennial, and is very easily raised in spring from seed, to be planted out in November. tender shoots are not suited to resist the alternate snows and thaws of a rough English winter, they should therefore have the protection of a projecting stone above them; with this they are amongst the best of rock plants. My finest specimens are more than 3 feet round, and still have each more than 500 open flowers. Those wintered in pots in a cold frame and planted out in spring are not so fine. The Geranium tribe rejoice in this dry sunny weather, and are unusually good; none prettier than G. argenteum, which sows itself in the narrow cracks of the limestone, where it is surprising how it subsists. G. subcaulescens is also very dwarf and neat. For a large rockery one named platypetalum, with large broad blue flowers, is very showy; indeed, all the tribe are fond of rocks, and do best on them where room can be found. Erodium macradenum, E. petræum, and the tiny E. Reichardi all like dry beds, and the two former ripen their seeds in weather like this, and are best and easiest grown from seed. On the other hand, Cyananthus lobatus, like most Himalayan plants, abhors drought and must be kept regularly watered. It is just beginning to flower in a dozen places. That curious monstrosity, Phyteuma comoplaces. Inat curious monstrosity, rayteuma comosum, would look quite at home under sea-water in an aquatium, resembling, as it does, some of the sea Anemone tribe. It grows here in the crevice between two projecting stones, having been tied up between two flat bits of limestone, with a mere dredging of soil, and hammered into the aperture. It has now six fine flowers upon it. Viola montana is a June-Gaussiting allegt, producing from a background study and appears to reducing from a background study and the constitution. two flat bits of limestone, with a mere diedging of soil, and hammered into the aperture. It has now six fine flowers upon it. Viola montana is a June-flowering plant, producing from a herbaceous stock an upright bush a foot high, with pale blue flowers—a very distinct species. A little Erythræa 2 inches high is now covered with flowers, like those of the common wild type. It is perennial, and may be pulled to pieces in spring; its habit is excellent. It has several names, but I have not been able to find out which is right, so I forbear to give any. Veroni-cas—the name is as plural as legion—are many of them past. The two best shrubs for the rockery are V. carosula, which is smothered with flowers early in June, though I cannot see that it differs much from pinguifolia and Lyalli, the latter, perhaps, liable to be killed by severe winters. A pink variety of the common wild V. officinalis is so flowery as to give a pretty colour to dry bases of the stones over which it creeps. V. rupestris is well known and good, but the more compact and neat V. saxatilis, with its red and its purple varieties, V. Grievi and V. Balfouriana, hardly get the attention they deserve. There is no room now lett to speak of Campanulas, which will last a long time, and may be mentioned at another opportunity. C. Wolley Dod, Edge Hall, Malpar, Cheshire, June 21.

∯loqists' ∯lowers.

THE AMARYLLIS .- At p. 682 it was stated that the plants were starting into growth for the second time, and I may say at once that it depends on the treatment they receive whether they will push into growth early or late, or perhaps not at all. Too often the Amaryllis is treated as if it were a Tulip or a Crocus, and is dried off almost as soon as the flowering period is over. Under such conditions the plants will not make a second growth, and they will make a very poor attempt at flowering the following season. When the flowers fade remove them, but allow the stems to remain until they decay naturally, and keep the plants growing for about sixteen weeks after the time of flowering is past. By that time they will have completed their second growth, and should be gradually inured to a drier atmosphere, with more air and a free exposure to the sun. The autumn flowering varieties have been produced by crossing the evergreen A. reticulata with the spring flowering type almost at the same time by Messrs. James Veitch & Sons, of Chelsea, and Mr. B. S. Williams, of Holloway. The first-named firm introduced Autumn Beauty, and the latter Mrs. Garfield and Mrs. William These varieties have the evergreen character of A. reticulata, and cannot be treated to such a decided season of rest as the offspring of A. aulica, A. pardina, A. Leopoldii, and A. graviana. sowed the seeds about two weeks ago, and they are now pushing through the ground; in two weeks more they will be pricked out, a dozen plants in a 6-inch pot. It is a sad waste of time and money to raise seedlings from inferior varieties, as they cannot be flowered very well under two or three years from the time of sowing the seeds; the space they occupy may just as well be taken up with really good sorts as with inferior sorts which are scarcely worth house-room.

AZALEAS.-It is now a good time to repot such plants as are not yet placed in heat. If it was thought to be unnecessary to repot any of the plants they are much improved by a surface dressing of some fertiliser. Guano mixed with equal parts of pounded charcoal and sandy peat answers well; the guano itself is rather strong, but a tablespoonful of it spread over the surface of a r5-inch pot would not injure the plants to which it is applied. Three times as much of the mixture I recommend might be given. It will soon be filled with active white hair-like roots, and the plants will show by the dark green of the foliage and the vigour of the young growths how much they enjoy it. If a hothouse can be set apart for the plants the temperature may be kept up to 65° or 70° at night, 85° or more by day, with shade from the direct rays of the sun. If there are any thrips on the plants they, as well as red-spider, can be destroyed by syringing vigorously two or even three times daily, Any vigorous growths that are taking a too prominent lead should be pinched back; the plants ought to be trained in the form of a bush. They will take a goodly supply of water at the roots. Shut the house up where they are growing early in the afternoon, to utilise the sun-heat. If the nights were a little warmer we might do without artificial heat altogether.

CALCEOLARIAS. — Where large specimen plants have to be produced from seeds it is necessary to sow early—say about the first week in May. Successional sowings may be made in June and July, and the July sown seeds will sometimes produce the best, or at least the most useful plants. The culture of these plants is simple enough, and may be summed up in a few words. Keep them clean, and let them be grown on without any check to their growth; the young plants to be protected from scorching sunshine. A frame facing towards the north is the best position in which to grow them.

CINERARIAS.—The treatment of these is much the same as that of Calceolarias at this time of the year. They may be grown in the frames, and be potted, watered, &c., just as the others are. In one respect there is a difference, and that is the treatment of named varieties. The offsets, or suckers, from the base of the old stems are readily propagated by separating them from the old plant with a knife, and potting them in fine soil, using small pots for the purpose. They will soon form vigorous little plants,

if they are placed under the shade of a wall or fence. Dry hot weather brings thrips and green-fly, both very troublesome pests to deal with in the summer.

PELARGONIUMS. - It is the custom with many people to put in any cuttings that may be required when the plants are cut down later in the season. It is much better to take them off before the plants have had time to become too much dried at the roots. The best plants are always obtained from young growths taken off in May and June. Plants produced from such cuttings may be grown on freely during the autumn months, and will form good flowering plants for the following season in 6-inch pots, whereas cuttings taken from the hard well-rlpened wood make but little progress, even after they are rooted. The proper treatment for the old plants that have done flowering is to keep them comparatively dry at the roots for two or three weeks, allowing them to get to the driest point, when they may be cut over. No water should be given for a few days, which will allow the cut portion to heal over. water is applied soon after they are cut, or if the plants should be moist at the roots while they are being pruned, the wounds will bleed, and take long to heal over. The plants should be placed in a cool airy house, near the glass, after they are pruned, or they may stand out-of-doors until the eyes start well.

ZONAL PELARGONIUMS.—The plants intended to flower next winter are now in 60-sized pots; they will presently be repotted in 4½-inch and 5-inch pots, to be repotted again in 6-inch and 7-inch. The plants should either be kept in a cool airy house or they should be placed out-of-doors; they like to be well exposed to the sun all through the summer and autumn months. The flowers have also to be removed as fast as they appear. J. Douglas, Great Gearies, Ilford.

NOTES ON PÆONIES,—III.

SUBGENUS II. PÆONIA PROPER.—Stems herbaceous.

Root a cluster of fusiform fibres. Disc not produced into a cup.

Section 2.—Follicles tomentose, erect-arcuste when mature.

10. P. tenuifolia, Linn.; DC. Frodr., i., 66; Anders., Mon., No. 4; Bot. Mag., t. 926; Rehb., Icon., fig. 4740; Boiss., Fl. Orient., i., 98.—Roottubers fascicled, with creeping stolons. Stems 1-headed, glabrous, 1-1 foot long, densely leafy up to the flower. Leaves 10-12; cut up into very numerous linear 1-nerved confluent segments under a line broad. Flower solitary, creet, surrounded by the crowded reduced upper leaves. Sepals orbicular, ½—2 inch long. Petals dark crimson, elliptic-cuneate, 1½ inch long. Anthers small, linear-oblong, shorter than the filaments. Follicles 2--g, erect-arcuate, villose, not more than ½ inch long; stigma ½ inch long, red, spirally recurved.

Extends as a wild plant from Transylvania to the Crimea, Caucasus, and Armenia. It was introduced into English gardens in 1765, and is a well known and very distinct type, clearly marked at a glance in all stages of growth by its very numerous narrow leaf-segments. It flowers with officinalis at the middle of June. P. laciniata and P. hybrida of Pallas are two varieties with broader leaf-segments than in the type.

11. P. anomala, Lina, Mant., 247; Anders, Mon. No. 3; Bot. Mag., t. 1754; Andr., Bot. Rep., t. 514; Ledeb., Fl. Ross., i., 74. P. intermedia, C. A. Meyer, in Led., Fl. Alt., ii., 277; Led., Fl. Ross., i., 74. P. Fischeri, Hort.—Root-tubers large and fusiform; stolons none. Stem as tall as in officinalis, glabrous, always r-headed. Leaves to—12, cut into numerous confluent lanceolate acute segments ½—j inch broad, 1½—2 inches long, 30—40 to the lower leaves, dark green above, pale green below, glabrous on both surfaces. Flower solitary, with the outer sepals produced into long, office compound leafy points. Corolla bright crimson, 4 inches in diameter, with about eight obovate or oblong petals 1—13 inch broad. Stamens ½—j inch long. Folitices and three, ovoid, 1 inch long, ½ ioch in diameter, arcuate, tomentose or glabrous.

Occurs as a wild plant in Europe, sparingly in Lapland, and in Asia it is spread all through the western half of Siberia, especially in the Ural and Altai ranges of mountains, and round Lake Baikal. It is a well marked type, midway between P. tenuifolia and P. officinalis, and is common in Eoglish collections, but there are two varieties—one with hairy and one with

naked follicles, so that it has just as good a right to be classified in the former section as here.

12. P. Emodi, Wall., Cat. Ind., No. 4727; Hook. fil. and Thoms., Flora Brit. Ind., i., 30; Hook. fil., in Bot. Mag., t. 5719. P. officinalis, Hook. fil. and Thoms., Fl. Ind., 60, non Linn.—Stems 2—3 feet long, quite glabrous, bearing 2—3 flowers when at all Invariant. Leaves thin in texture, glabrous on both surfaces, darkgreen above, pale green beneath; the lower with about 20—30 lanceolate or oblong-lanceolate very confluent acuminate segments, 1—1½ inch broad. Flower white, 3—4 inches in diameter, several of the outer sepals produced into long leafy, sometimes compound points; the petals unequal obovate, the outer 1½—1½ inch broad. Follicles 1—2, ovoid, tomentose, ½ inch in diameter; stigma very small, orbicular, straight, with the two sides folded together.

A native of the west temperate Himalayas, at an

as a wild plant throughout the southern half of Europe. It hegins to flower in our London gardens about the middle of May, P. lobata, Desf., DC. Prod., i., 66, is apparently a variety of officinalis, of dwarfer habit than the type, with narrower more numerous leaf-seerments.

14, P. peregrina, Miller; Anders., Mon., No. II; Bot. Mag., tab. 1650; D.C., Prod., i., 66.—Stem r.½—z feet long, r-headed, pubescent towards the top. Leaves 5—6 to a stem, dull green and glabrous above, pale green and plose beneath, the lower with 15—20 oblong acute segments, 1—1\(\frac{1}{2}\) inch broad, the longes; 3—4 inches long, outer with leafy points. Petals 5—10, bright crimson, 2 inches long, 1\(\frac{1}{2}\)—2 inches broad. Follicles 2—3, tomentose, erect-arcuate, I inch long, inch in diameter; stigmas crimson, folded together, and hooked, \(\frac{1}{2}\) inch

"This is the latest in coming into flower of all Pæonics, excepting albiflora; its flowers seldom expand hefore the latter end of May. It forms a dense tuft of leaves and flowers more dwarf than bumilis, and is the lowest in stature of all the species excepting mollis. From pergrina it differs in the leaves being small, ovate, and more glaucous; the leaflets more divided, crowded, and imbricated; the ultimate fissures shallow and obtuse; in the germens being close pressed together and very little separated even in the ripe follicles." Our most typical wild specimens are from Montpellier and Trieste. A full account of it will be found in Sweet's Flower Garden under the figure cited. It is not recognised as a species by any of the recent Continental Flora writers.

16. P. mollis, Anders., Mon., No. 13; DC. Prod., i., 66; Lodd., Bot. Cab., t. 1263; Sabine, in Bot. Reg.,



FIG. 153.—PÆONIA CORALLINA: FLOWERS CRIMSON.

altitude of 5000 to 10,000 feet. A fine well-marked plant, still rare in English gardens, most like P. albiflora of the common cultivated kinds.

13. P. officinalis, Retz., Obs., 35; Anders., Mon., No. 5; Bot. Mag., t. 1784; D.C., Prod., i., 55; Reich., Ic. Germ, t. 127, fig. 4743.—Stem stout, one-flowered, glabrous, 2—3 feet long. Leaves 5—6 to a stem, glabrous, dark green above, pale green beneath, the lowest with 15—20 lanceolate or oblong lanceolate acute confluent leaflets, 1—2 inches broad. Sepals very unequal, the inner orbicular and obtuse, the outer leaf-like and acute. Petals dark crimson, nuch imbricated, obovate, or nearly orbicular, t.½—2 inches broad. Stamens ½ inch long; anthers rather shorter than the filaments. Carples 2—3, ovoid, densely tomentose, erect-arcuate, when fully mature 1 inch long. ½ inch in diameter; stigmas ovate, complicate, crimson, recurred.

The commonest species in gardens (see fig. 153), especially in the double-flowered form, and spread

Widely spread through the South of Europe, and common in cultivation. It is not distinct from P. officinalis as a species in any broad sense. I do not know how to distinguish it from P. pubens, Sims, in Eot. Mag., t. 2264; or P. banatica, Rochel, Reich., Lo. Germ., tab. 125, fig. 4741 c.

15. P. paradoxa, Anders., Monogr., No. 12; DC., Prodr., i., 66; Sweet., Brit. Flow. Gard., t. 19.—Stem 1-4½ foot long, hairy in the upper part, with never more than a single flower. Leaves 5—6 to a stem, green, and glabrous above, glaucous and plose beneath, the lower cut up into 9—40 acute confluent segments, ½—½ inch broad, the largest not more than 1½—2 inches long. Peduncle so short that the flower is amongst the upper leaves. Calyx and corolla just like those of officinalis and peregrina. Follicles 2—3, ovoid, tomentose, erectarcuate.

This is not in any broad sense more than a variety of peregrina. Anderson identifies it with the Pæonia promiscua of Lobel, Gerard, and Ray, and says:—

t. 474.—Stem about I foot long, I-headed, densely pilose. Leaves 5—6, crowded, dull green above, glaucous and densely pubescent beneath, cut into 30—40 oblong lancoclate segments [§]—I inch broad. Flower like those of officinalis and peregrina, but smaller and duller in hue. Follicles 2—3, densely pilose, erectarcoate.

Not distinct from the last in any broad sense. Anderson, who first separated it, writes:—"This plant is at first sight distiloguishable from its congeners by its short, rigid, upright stalks, the dark bluishgreen colour of its leaves, which are flat, compact, very much divided, the lacinic crowded, overlapping each other, very woolly on the under-side, nowise bordered with red, as in most of the others, and, the lateral leaflets being almost sessile, the exterior side of each disposed to be decurrent. It is the most dwarf of all our species, seldom reaching 18 inches in height, even in our gardens. The flower is small, of a dark dull purplish-red, by no means handsome." It

has not been claimed as a wild plant by any of the authors of recent Floras of the southern countries of Europe. J. G. Baker.

(To be consinued.)

Foreign Correspondence.

BOGOTÁ AND HOW TO GET THERE (continued from p. 779).-When you are at Facatativá you are 10 miles in the plain and 20 miles from Bogotá, and you are at the foot of one of the two islands that in former times projected out of what was then the lake. The drive thence into Bogotá is an easy one-a public coach runs daily backwards and forwards, and the charge is 6s. 8d, or one can take a coach to oneself for £3 10s., or, if there is a return empty coach a bargain can be made with the driver. The alluvial nature of the soil can be easily seen as you drive along -in fact it is rather like a long drive through an Irish bog-on both sides of the road run deep ditches full of water, which prevent access to the neighbouring The land is very fertile, and produces two crops of wheat a year without any manure, and with very little cultivation. The first harvest takes place in January of the crops sown in September, and the second in July, of the crops put in the ground in February, which, curious to state, is the hottest and finest month in the year, with a mean temperature of 61° F. The mean temperature of the Plain of the Sabana, as it is called, is 59°, so that there is very little variation. Besides Wheat, Barley, Maize, Vetches, Beans, and Potatos, garden stuffs are cultivated, and the flocks of sheep and the herds of beasts give the scene quite an English aspect. The farm houses dotted on the plain, and generally surrounded with a clump of trees, assist in the delusion, which is only dispelled by the curious but picturesque costumes of the Colombian cavaliero, and the muffled-up aspect of his señoras, as they ride ambling by on their The use of the lasso still predominates, and the cavaliero, as well as his herdsman, is very clever with it. The mules also are very clever in avoiding it, and will gallop about with their heads closely pressed into their neighbours flanks to dodge the noose as it comes down. There is not a vestige of an Orchid in the Plain of the Sabana, and all search is useless there.

On arriving at Bogotá I went to the boardinghouse of Mrs. Bowden, an Englishwoman, in the street Calle No. 1 al Norte, Her charges are from £8 to £10 a month for a good bedroom, four meals a day and attendance, but, of course, no wine or beer. This is the usual charge at Bogota for living, though the Grand Hotel-a sad misnomer-charges more. Drinks, such as Lager heer, cost 15. 6d. a pint; claret costing nothing under 6s. a bottle, and brandy costing 30s. a bottle, are very dear and very bad. The beer of Bogotá is not nice, and costs 44. a pint. My first afternoon gave me an idea of a tropical thunderstorm in the Andes; the rain descended in torrents for an hour and a half, balls of fire, which seemed to burst with a greenish hue about them, descended every two or three minutes, and these, mixed with the most vivid lightning, gave me the idea that chaos had come back once more. The reverberation of the thunder amongst the mountains at the back of the town was very fine, and the street was The next morning I went to La simply a torrent. Flora to call on Mr. Kalbreyer, the German nurseryman, to whom I had a note of introduction from Messrs. Veitch. Kalbreyer had been an Orchid collector for that firm, but fever had undermined his health, and he set up in business on his own account at Bogota as a general nurseryman and introducer of new plants. The Colombians have money to spend on flowers, and to give bouquets is a favourite method of ingratiating themselves with the ladies. As a sample of prices, a flower of Lycaste Skinneri brings in 6s. 8d., a simple Camellia costs 3s. 4d., and a good spike of Odontoglossum Alexandræ or O. triumpbans is worth from 10s. to 12s. Roses are very abundant all the year round, and very cheap; but the particular favourite flower of the Colombians is the Pansy -El Pensamiento-and good large flowers of this will cost 6.4, apiece, especially if they are a new

Kalbreyer showed me over his garden, which is kept in a thoroughly Colombian, that is to say untidy, manner. Of Orchids he had a good many Odonloglossums Alexandræ, triumphans, and gloriosum in flower, and Masdevallias Harryana and

Shuttleworthii; Cattleyas will not grow up here unless in glass-houses, and that is a very expensive anuscement. Ao old piano case roofed in with glass costs close upon £20. In the garden were Gloire de Dijon and Maréchal Niel Roses on their own roots, doing very well indeed, and most of the regular H.P., aod Tea Roses. Peas were coming up—in flower and fruiting, excellent Cabbages and Cauliflowers. There were some Peach trees with fruit on them, but they do not come to perfection here; Asparagus will not grow at all, but for fruit and vegetables the Bogotá market on Friday mornings is the most wonderful sight I have ever seen in any part of the globe. All the fruits of the hottest tropical regions mixed with the products of the coldest mountain districts, such as frozen hail, are to be found there.

I will enumerate a few, to give an idea of the fruits. Strawherries, both wild and cultivated; Bananas, common Plantains, Cherries, Apples, Pineapples, Mangoes, Cocoa-nuts, Melons of three or four kinds, Peaches, Pomegranates, Passionflower fruit (Passiflora edulis and quadrangularis), Mulberries, Blackberries, Curubas, Figs, Plums, Guavas, Nisperos, Grapes, Nuts, Altmonds, Chirimoyas, Oranges sweet and sour, Limes, Dates, Gourds, Alligator Pears, Tomatos and Tamarinds—to say nothing of about fifteen sorts of fruit in addition whose Spanish names I could only find out. Of vegetables there is a great profusion likewise, and all the country productions, such asstraw hats, sandals, baskets, carved wood and home-spun cloth, are to be found. It is needless to add that they always ask more than they expect to receive for their goods. Meat is very good but dear, almost as dear as in London.

Two days after my arrival I was attached by the usual Magdalena sever, that always seems to attack fresh European arrivals at Bogotá; for this I took four grains of opium and five grains of quinine, and then sent for the most celebrated poisoner of the district. He came and told me that I had treated myself quite right, and to go on taking quinine if I I escaped. The next day found me very weak and wretched, but I was able to go out and stand about in the sun. The rooms at Bogotá are wretchedly cold and cheerless, so to counteract this every Colombian lolls about in the sun. I went for a walk up the Boccaron, the valley which lies between Mount Serrate and Guadaloupe, and through which runs the River Bogotá. Sentries are placed with rifles for some distance from the town to prevent There were numberpeople bathing in the stream. less Orchids to be found here, but they were nearly all of the Masdevallia, Pleurothallis, or Restrepia kinds, and were, as I afterwards discovered, all known to Herr Lehmann-nothing at all brilliant. The Government had built some stone walls across the path to prevent the Indians coming down with their supplies to market, but they might as well have built them to prevent the swallows or humming-birds flying about.

The ascent of Guadaloupe, which is some 2000 feet above the town, does not repay any one except for the view, and, when the sun is shining, the rays through the sprays caused by the Falls of Tequendama are very fine. The district of Patcho, about one and a-half day's journey from Bogotá, abounds with Odontoglossum Alexandree. Some of these are the large, well-spotted varieties, others are worthless, and it is from here that the Indians bring in their plants to the town. This district has all been bought by an Englishman. Mr. George Bunsch, a brother of a former Minister in Colombia, who has brother of a former Minister in Colombia, who has started large ironworks in the district, and he has a great helief in the future of Colombia. Godnotglossum Lindleyanum is always more or less mixed up with plants fromhere. The spotted variety of Alexandre, the broad-sepalled and petalled variety, and the new variety with the branching spikes, always grow about three days' journey from each other, and this latter—Odontoglossum Alexandrae Lehmanoi – grows in quite an unsuspected place, and as I am bound to secrecy in the matter I cannot more exactly disclose the place, but doubtless there will be large importations of it soon. E. W. Walker,

(To be continued.)

THE HEALTH EXHIBITION. — The total number of visitors to this great show during the week ending June 14 was 143,121; and during the week ending on June 21, 143,122, or one more. It would be interesting to know what are the chances of the numbers of any two consecutive weeks being so close again.

Orchid Notes and Cleanings.

MAJOR LENDY'S ORCHIDS, - The commodious houses at Sunbury House, Sunbury-on-Thames, may truly be said to contain a collection of Orchids, for while the showy large-flowered kinds are grown in quantity, every other variety which is pretty finds a home there, and all the insignificant flowered species are represented for botanical purposes. Here we may often see plants of Stelis, Pleurothallis, Octomeria, Restrepia, or small flowered Masdevallia, which by good culture have been grown into masses and enabled to produce numerous flower-spikes, which by their numbers not only make up for the smallness of the individual flowers, but seem to impart a fairy-like grace to the plants by the very features which in small or ill-grown specimens are regarded as defects. The cold houses contain a very fine lot of Odontoglossums, including many superb forms of O. Andersonianum, O. Ruckerianum, O. Edithæ, and O. Wilckeanum, and a most complete collection of Masdevallias, comprising almost the whole of the known species in cultivation. In these houses the Oncidium macranthum thrive well, and are now and for a great part of the year giving a profusion of their large golden blooms from the long flower-spikes which twine overhead. Arranged in a similar manager is a first spike of O similar manner is an immense flower-spike of O. zebrinum about 12 feet in length, and several of the yellow and brown flowered O. serratum, which yellow and brown flowered O. serratum, which mingle well with the brighter flowers of the other species. In the coldest house, growing over the water-tank, is a grand specimen of Odontoglossum coronarium with five strong leads, and all looking very healthy. It is grown in a large pan with sphagnum moss, over which it seems to delight to spinaguan moss, over most and shady. This plant troubles many growers, but those who once find out how to grow it, find it very easy to do. A cool, still, moist corner over a water-tank has been found by several to be the best suited to it. One of the houses is devoted chiefly to the varieties of O. Alexandræ, O. Pescatorei, and the Masdevallias; and they are giving a good show of bloom assisted by a quantity of the snowy-flowered Dendrobium infundibulum, some masses of the delicate little Palumbina caodida, Odontoglossum cordatum, O. Reichenheimii, O. Hallii, O. sceptrum, Oncidium concolor curtum, O. prætextum, the pretty violet coloured Odontoglossum Edwardii, and the scarlet Sophronitis grandiflora, and good masses of Epidendrum vitellinum majus. In another cool house the Odontoglossum vexillarium have the best of the display, and grand some of the varieties are, one of the very dark flowered kinds measuring nearly 5 inches in length, and some of the white flowered forms are very lovely and seldom to be found of such size and substance. With them are some good varieties of Masdevallia Harryana, M, bella, M. chimæra, and many other curious Masdevallias, as well as the pretty Barkeria spectabile, the quaintlooking, large-flowered Epidendrum Parkinsonianum, and some well-flowered plants of the old Miltonia flavescens, which are as pretty as many of the newer arrivals. The Deodrobiums are giving a good supply of bloom from healthy plants of D. Parishii in several varieties, D. Bensoniæ, D. thyrsiflorum, and a good specimen of the true D. Griffithianum, with its long, loose racemes of light yellow flowers, not a bit resembling the D. densiflorum, which is generally The East Iodian house is more than half filled with Phalænopsis, which are especial favourites They are in good condition, and are well furnished with flowers either present or in prospect. The P. speciosa, with its quaintly painted flowers, seems more likely to be a favourite than it was at first supposed to be, for there it is very pretty. Good varieposed to be, for there it is very pretty, Good varie-ties of P. Luddemanniana, P. tretraspis, P. Schree-deri, and the pretty little P. Parishii, are also blooming, and with them many good pans of Cypri-pedium niveum, C. Lawrenceanum, C. Stonei, C. vexillarium, C. Argus, and many Angræcums and Acrides, certaply not the least handsome of them being the old Aërides odoratum. The Cattleya-house re-cently erected is arranged for effect, the Cattleyas, being mingled with Caladiums, and the long slender flower-spikes of the many species of Oncidium being utilised to train over the iron arches of the middle walk. Altogether it looks very

effective with the many large blooms of C. Mossiæ, C. gigas, C. Meadeli, C. Warneri, C. lohata, C. Walkeriana, C. Forbesii, C. guttata, C. labiata, Lycaste aromatica, Ladia elegans, L. purpurata, Sobralia macrantha, and numbers of other odd, pretty, or showy things. Particularly noteworthy is a grand mass of a lovely variety of Lælia purpurata, with thirty-five flowers; a handsome Cattleya gigas Sanderiana, which is such a gorgeous thing when obtained true; a lovely white C. Mossia, with yellow and rose lip, which was sold by Messrs. Sander as C. Mossice Arnoldiana; a well-flowered mass of the old dark rose-lipped Epidendrum macrochilum, a fourflowered plant of the strange-looking Brassavola Digbyana, and some healthy plants of Odontoglossum Phalænopsis, O. Roezlii, Epidendrum prismatocarpum, Utricularia montana, U. Endresii, Vanda Batemanii, and the curious scarlet-lipped Epiden-drum Pseudepidendrum, well furnished with bloom, Major Lendy has also some Burmese Orchids and botanical curiosities imported direct, but, as with most amateur Orchid importers, too great a quantity of the small-flowered species are received, the last consignment from Guatemala, consisting of Stanhopeas, Epidendrums, &c., being particularly unfortunate, as more than one or two plants of each of them are not worthy of the room they occupy. It is pleasant, however, to see one so enthusiastic as Major Lendy caring for the small as well as the large-flowered

The Flowen Sanden.

THE late fine weather has proved very beneficial to the newly planted subjects in the flower garden, even the tenderest kinds have already made satisfactory progress and will speedily fill their allotted spaces, Having made such rapid growth extra attention will be requisite in pegging, tying, and training them in the proper direction, and in pinching and stopping exuberant growths and such shoots as have already filled the spaces they are intended to occupy. Although the weather has been very favourable to the growth of most plants, there are a few subjects to which it has not appeared to be altogether suitable. Freshly planted Calceolarias, for instance, have not made satisfactory growth except where special means have been taken to keep their roots cool and moist. Frequent watering alone is not sufficient to ensure this, but if a good mulching of rotten manure is also given over the surface of the beds immediately after planting they will succeed thoroughly, nor should this beneficial and economical method of mulching in dry, hot weather be confined to Calceolarias and similar plants, as there are few kinds that will not be im-proved immensely by its application, and much labour in watering will thereby be averted. Where the beds are surrounded or intersected by Box edgings, these should now be trimmed as neatly as possible, and the shoots carefully cleared away; the gravel walks should also receive a sprinkling of new gravel over the surface, and then be well rolled. Cleanliness, neatness, and order should be maintained throughout, so as to make everything as bright and pleasing as possible.

ANNUALS AND PERENNIALS may still be planted, so as to fill up all blank spaces left by the early flowering bulbs in the herbaceous and spring borders, and extra sowings of the quicker growing kinds may still be made to succeed those plants which are not yet ripe for removal; by so doing an ever changing and ever beautiful display may be obtained at comparatively little labour and cost. Two of the most beautiful subjects in bloom at the present time are the Delphiniums and the Aquilegias. When well grown there are few plants in the herbaceous border so gorgeous. Amongst the newer varieties of the latter nearly every imaginable colour is obtainable from seed, they are also exceedingly useful for house decoration.

Roses now require special attention, not only in removing defective buds injured by the late spring frosts, but also in the destruction of the Rose weevil, which appears to be unusually prevalent this season: the best remedy is to inspect them daily and remove the grubs from the leaves; where gross shoots are

being formed they should be topped so as to equalise the flow of sap. Frequently loosen the surface soil with the hoe and then mulch it with totten manure. Should mildew appear sulphur should be immediately applied to the affected plants, nor should one dressing be deemed sufficient where it has taken firm hold; sulphur is so easily dispersed by wind and rain that ofterepeated dressings are required to destroy it. T. S. C.

The Bandy Anuit Garden.

SRAWBERRIES will now be in full bearing, and as our raiofall is considerably below the average, this fact must not be lost sight of, for it is out of the question to expect large crops of fruit unless an abundance of moisture is first supplied, therefore water in the evening, preferably from river or pond if it can be obtained. See also that the nets are put on every night after gathering, because it is at daybreak, before any one is about, that birds are most destructive, and, as we said before, let all fruit for the day's supply, be gathered early. Cherries will now be ripening, and nets will also require to be placed over them; where the Cherries are all planted together (and they always should be), the labour and expense of covering them is not so great. As the fruit will now be approaching maturity, syringing with any insecticide must for the present be abandoned. Pears on walls will require the breastwood to be stopped and permanent shoots laid in. Peaches must be gone over again; insects are terribly numerous this year and must be kept under. At this thinning of the fruit one may be left on a shoot, and later on, if they are still too thick, this operation can be repeated. It is quite a mistake to remove every leaf from off the fruit just yet, when this is done thus early oftentimes the fruit gets scalded, so little and often is the best maxim here. Trees which have been grafted will now need to have the ties binding the graft taken off, and in the case of strong growths re-tie them, to prevent them from being blown off. This month the fruit-room will be less in demand than in any other during the whole year, therefore see that the necessary cleansing is attended to; open the ventilators wide, and whitewash the walls and scrub or paint the shelves—not that we recommend the latter, except where the woodwork has got black and unsightly. Where a suitable building does not exist, it should now be erected, remembering that is the storehouse of the garden, and in doing so avoid lofts or places near stokeholes. The building should have a north aspect, be a foot or two under-ground, be built with hollow walls, and have some non-conducting material between the ceiling and the and have ventilators at the point, and shutters to the windows, as it should ever be borne in mind that a dark room and a low temperature is most favourable to the keeping of fruit. On no account introduce hot-water pipes or any heating apparatus where the place is extensive; this may be done in the ripening-room or Grape-room adjoining. J. Rust, Eridge Castle, Sussex.

The Fitchen Garden.

PLANTING, &c .- This will be a good time to make another planting of the stronger plants of the respective varieties of Savoys, the distance between the plants each way being, as with kindred subjects, determined by the size which the different varieties attain, as well as by the nature of the soil, in poor land less space being required than in rich ground. Small varieties, like Tom Thumb and Early Ulm, may be planted as stated in my last Calendar, in rows 15 ioches apart and 12 ioches in the row; while Drum. head should have a space of 2 feet between the plants each way. In taking up the plants care should be exercised in examining the roots, in order to ascertain whether they are clubbed or not, and all that show signs of that disease should be destroyed. Continue to make successional plantings of Celery in trenches, as previously advised, and see that the plants do not suffer from want of water at any time. Do not trouble about earthing them up until they have attained to 12 or 15 inches in height, and thereby not only economise labour in the operation, but also lessen the chances of the soil getting into the hearts, which is frequently the case when the plants are earthed-up when only 6 or 8 inches high, and the object blanching the head—is secured as completely as by carrying out the operation at more frequent intervals.

TOMATOS OUT-OF-DOORS —The chief points to be observed in Tomato culture, whether indoors or out, are to keep the shoots and leaves well stopped and thinned. If the plants are trained up the wall with one or more stems, these should not be closer to each other than 10 or 12 inches, all side shoots being pinched at the first joint, and kept persistently stopped afterwards, and the leading and secondary branches stopped above the fruit. As soon as the latter have set, their development will be hastened by the plants having liberal supplies of liquid manure at the roots. Thus treated, and with ordinary summer weather, the plants should yield an abundant supply of ripe fruits. In tacking the shoots to the wall, sufficient shredroom should be allowed for their expansion.

GENERAL WORK .-- Get ground well manured and dug in which to plant Coleworts and Cabbage plants; 15 inches each way will be sufficient space between the plants of the former, and 20 inches between those of the latter. As young plants of Cauliflowers, &c., become large enough to handle in the seed-beds, prick them out in nursery beds, as previously advised, before they become crowded. Advancing crops of Canadian Wonder French Beans will now be the better for having some short sticks put to them to keep the stems erect and the pods clean. Peas will now be plentiful enough to take the place of Asparagus, therefore the cutting of the latter should be discontinued. This is necessary, to enable the plants to make foliage, and consequently fresh roots, and thus acquire more vigour for the ensuing year. attention which the beds will require for the next few months will be freeing the ground from weeds and seedling plants, which are found in abundance. H. IV. Ward, Longford Castle.

Natural History.

THE WILD CAT.—Can any of your readers inform me whether or not the wild cat (Felis catus) is extinct in Britain? I am led to ask this question by the frequency with which one hears of its capture and destruction by trappers. The domestic cat being naturally a poacher, not unfrequently emancipates itself, and leads in the woods an independent life, and is there called by gamekeepers and others the wild cat. Nothing can be more erroneous, as the true wild cat. Nothing can be more erroneous, as the true wild cat is rarely, if ever, seen, and then only in one or two of the northern Scottish counties, being now extinct in one of its last English shelters—Delamere Forest. In Britain it was formerly plentiful, as we leara from Richard II.'s charter to the Abbot of Peterborough, giving him permission to hunt the hare, fox, and wild cat. In 1571 the Duke of Sutherland exhibited in London a wild cat, the following account of which was published by the late Mr. Frank Buckland in Land and Water. He states that "He was first sent to my house in Albany Street, but the beast was so fierce that there would have been a "mutiny at the Nors' both of bipeds and quadrupeds if I had taken him as a guest. So I was unwillingly obliged to pass him on, in a cab, to my friend, Bartlett, at the Loological Gardens, who put him in excellent condition for the show. This wild Scotch cat won a prize of £1 tos. I think the poor thing should have a silver collar made of this value, only who will 'bell' (or rather collar) the cat? At the show he looked very bitter and snartly. He kept his ears flat down, and every now and then smiled a ghastly gin and showed his white teeth, with a hissing 'kuss, kuss,' as much as to say, 'Let me out of this cage but for a minute, you wretched Londoners, and I'll make the lot of you skedaddle. I'm a prisoner now, but I have got good old Scotch blood in my veins, and I would hake the bundle of you clear out like frightened sheep, like my ancestors did the Picts hundreds of

It is frequently asserted that the true wild cat is identical with our tame animal, but only by those who have never seen a wild cat, as this latier is not only ferocious in appearance, but untameable as well. I have seen several killed in the North of Ireland which we had never any trouble in distinguishing from the tame animal by their lank, lean, though powerful appearance, as well as by the tail ending in a small brush, instead of tapering gradually to a point, as in the domestic cat. Other points of difference are the rather long, pointed ears, grey head, marked with two black stirpes passing from the eyes over and behind the ears, and grey body, with a blackish lorgitudinal stripe along the middle of the back. A. D, thebter,

APPOINTMENTS FOR THE ENSUING WEEK.

National Rose Society's Show at South National Rose Society's Show at South Kensington, Opening of the Edinburgh.
Opening of Edinburgh.
Opening of Edinburgh.
Twickenham Horticultural Society's Show.
Flower Show at Stoke Bishop.
Royal Betanic Society's Evening Føte.
Royal Betanic Society's Evening Føte.
Royal Betanic Society's Evening Føte.
Konsteller Society's Evening Føte.
Royal Betanic Society's Evening Føte.
Royal Betanic Society Sevening Føte.
Royal Betanic Society Sevening Føte.
Royal Betanic Society at Carlotte Studies and Carlotte.
Flower Show at Chiswick
Summer Show.
Society at Chiswick
Burght. Edmunds Horticultural Society's
Winchester Summer Show.
Sale of Imported Orchids, at Stevens'
Sutton Rose Show. TUESDAY, WEDNESDAY, July 2

July 4 Sale of Imported Orchids, at Stevens' FRIDAY, July 5 Rooms.

Rooms. Crystal Palace Rose Show.
Sale of Orchids and other Plants, at Stevens' Rooms. SATURDAY,

A RECENT auction sale of the season's growing CROPS on a large number of FRUIT ORCHARDS situate on the western side of London, revealed very plainly the scanty amount of produce to be disposed of in that part of the county. The first thirteen lots did not even bring out a bid, so sparse was the fruit; and out of the score or more submitted to competition but two obtained fair prices. Such a fact as this speaks volumes for the present ordinary state of the market fruit crops, in the neighbourhood of London at least, although it may be accepted in mitigation of this example that the orchards were not those of good market growers, who are first-class cultivators, but belonged rather to private persons who, not being market growers, prefer to dispose of their fruit crops through dealers, who would purchase and gather the crops, rather than send them to market themselves.

But the other day a strong plea was put forth in favour of the cultivation of more fruit. It is strange that with all the information that is given from year to year as to the condition and prospects of the fruit crops through the Press, that persons who occupy positions of eminence in various circles, and whose opinions are regarded with special respect, should remain in ignorance of the fact that our crops are abundant or deficient, not because of the will of man, but from circumstances beyond his control. Over and over again has it been shown that, so great are the breadths of land now under fruit culture that a heavy cropcertainly a rare event-does but mean a glut that is replete with loss to the grower. It is a fact that did we have really heavy crops every year repletion to the public would but lead to starvation to the grower. The best paying crop is half a one, and that a good sample. A very poor crop is ruinous, and a very heavy one is nearly as bad. We learn that a comparative deficiency of some preserving fruits this year will bring no inconvenience to the jam manufacturers, because they are well supplied, and will be glad of a short season to enable them to clear out.

Having regard to the immense number of our population few would perhaps expect to learn that jam makers ever became glutted with material, but such, we learn, is the case. Had the great crop of fruit at one time anticipated been realised we might have seen that singular but still occasional incident-growers unable to sell, and almost unable to give away, their fruit. It may be, indeed most likely is, the case, that whenever we get a large fruit crop it is not distributed so effectually as may be desired amongst consumers. The means for distribution are abundant, but they are also costly; hence before the luscious fruit for which the grower receives at the first such a very moderate price reaches the actual consumer its original price has doubled, perhaps trebled, and the final sale is heavily handicapped. So common is the love for fruit that it seems as if the consumption in the proper season would be illimitable and the sale profitable. Thus it comes that those who preach a crusade in favour of more fruit culture usually base their notions of the profits of fruit culture on the prices paid to the dealers, and hastily jump to the conclusion that the only remedy for these prices, which of course are unduly high, is to be found in wider and extended culture.

Our market growers are men of marked enterprise, and are only too ready to seize upon any opportunity that may offer to realise profits. If fruit culture were so very profitable a vocation we should find the growers expanding their orchards most rapidly. Around the metropolis and, indeed, throughout the country, that is constantly being done now, but not much more rapidly than is needful to replace exhausted orchards or to make good others that have been built over or otherwise destroyed. There is no great profit realised even by men whose lives have been spent in their vocation, and who are more familiar with market and public requirements than are any enthusiasts or philanthropists; and were fruit culture such an Eldorado as is represented, they would need no lectures or pamphlets to stir them to farther extension of their fruit gardens. Whilst this extension of their filling gardens. Whilst this season we have seen the top fruit crop so terribly attenuated by the frost, we are now seeing both drought and blights acting disastrously upon bush and ground fruit crops; so that the difficulties of fruit culture are many, and in embarking in that vocation all must be reckoned with. We were once made familiar with a demand for the ntilisation of railway embankments for controllers. fruit culture. Most likely those who contended for such utilisation of these wastes gave the subject but little consideration, and that we hear little of it now shows that wiser counsels have prevailed. When we have ensured good and safe crops for our cultivated orchards, we may then turn our attention to even railway embankments.

- RHODODENDRON CAMPVLOCARPUM,-When loaded with inflorescence of surpassing delicacy and grace this species claims precedence over its more gaudy congeners, and it has always been regarded by me as the most charming of the Sikkim Rhododen-drons. In such terms as these did Sir Joseph (then Dr.) HOOKER, speak of this species when he first made it known in his sumptuous Illustrations of Sikkim Rhododendrons, t. 30. The species has been retained in Mr. C. B. CLARKE'S most recent revision in the Flora of British India, vol. iii., p. 467 (1882), so that to the illustration now given (fig. 154) nothing need be added in the way of description save to say that the flowers are of a pale primrose-yellow colour and fragrant. The name campylocarpum applies to the curved sickle-like capsules, not shown in our illustration. For the specimen figured we are indebted to the Hon, and Rev. J. T. BOSCAWEN, in whose famous garden at Lamoran this species is found to be hardy.

- GARDENERS' ROYAL BENEVOLENT INSTI-TUTION. - On Tuesday next the forty-first anniversary festival of this Institution is to be held "Albion," Aldersgate Street, when Mr. GEORGE LAMBERT, F.S.A., will preside. We have often had occasion to bring this deserving Institution under the notice of our readers, and we do so with the greater pleasure as we believe that it is founded on sound principles of self-help, and is characterised by judicious management. The steady racterised by judicious management. progress of the Institution, in spite of adverse criticism, not always well founded, is a proof of the correctness of our statement. The complaints which have reached us from time to time have been based on a misunderstanding of the objects of the Institution, and an unreasonable expecta-tion of what can and what cannot be done. It is obvious that an institution which is intended to confer such substantial benefits upon deserving candidates must be carried on upon the soundest financial basis, and be so managed as to be as secure as possible against risk, and this we believe to be the case in the present instance. The growth of the Institution from small beginnings to its present respect-

able position alone substantiates our view. We should. indeed, be glad to see the Institution less dependent upon outside assistance than it is, but we can but recognise the fact that, if there is any shortcoming in this particular, it is due to the class more particularly interested in the matter. The gardeners of the nation have it in their power, if they would only exert it, to have a larger voice in the management of the Institution, but they must remember that in order to maintain and extend its usefulness, they must not only support it vigourously by their contributions, but recognise the fact that matters of successful finance demand as much forethought and knowledge of business management as does the control of a large garden establishment. If the gardeners of the country feel any deficiency on this head, as from the nature of their occupations they may well do, they may at least be expected to recognise the qualifications of others more favourably situated than themselves to deal with such subjects. One very satisfactory feature connected with the Institution is manifested by the steady growth of the Augmentation Fund devised to increase the amount of the pensions paid. The amount now given is, it must be admitted, small. It was small when the Institution began its benevolent labours, and in view of the altered circumstances of the present time it is smaller still. Hence the necessity for further effort to make the pensions more adequate. This, and the increase in the number of pensioners are really matters almost entirely in the hands of the gardeners themselves, and we hope to see them appreciate this truth and exert themselves to increase the annual income of the Society and the consequent extent of its usefulness. As to the employers of gardeners and the charitably disposed, their contributions already bear a large, a very large proportion to the receipts from bond fide gardeners, and we do not for a moment doubt that in spite of the depression to which all who derive incomes from land are subjected those contributions might be largely increased were the claims of the Institution more forcibly brought under their notice by the gardener. Begging is, happily, a distasteful matter to most of us, but there are occasions, and this is one, where begging, judicious, if importunate, is in the highest degree laudable. In addition to various small sums and notices of annual subscription received by purselves, we are informed by the Secretary that the Augmentation Fund up to the present date, June 25, is 6376 16s., as against £28 9s. this day last year, although the usual collecting cards have not yet been sent out. They will be issued on or about July 18. The principal subscribers to the Augmentation Fund this year are :- The Baron Schreeder, £50; Alfred de Rothschild, Esq., £10 10s.; the Duke of Devonshire, £10 10s.; Messrs. Veitch & Sons, £26 5s.; John Waterer, Esq., £10 10s.; Richard Chrimes, Esq., £10 10s.; T. C. Daniells, Esq., £10 10s.; A. Sim, Esq., £10 10s.; H. C. Hardy, Esq., £10; E. C. Baring, Esq., £10 10s.; Mr. J. Smith, £10 10s.; S. Morley, Esq., M.P., £10 tos.; T. S. Childs, Esq., £10; Baroness Von Roemer, £5 5s.; Messrs. Wigans & Cosier, £5 5s.; Mr. W. Fletcher, £5 5s.; F. Tiack, Esq., £5.-with others, let us hope, too numerous to be mentioned, except in the public audit of the Institution, and of that other audit, wherein are recorded the names of those whose deeds, accomplished by their right hands, are not known to their left.

- DISEASES OF FIELD AND GARDEN CROPS. -Under the above name Messis. MACMILLAN & Co. have a small work in the Press from the pen of one of our contributors, Mr. WORTHINGTON G. SMITH. It describes the diseases of Clover, Onions, grass, straw, club-root and the other diseases of Turnips, Mangels, Cabbages, &c.; the diseases of corn, as rust, mildew, ear-cockle, smut, and bunt; the diseases of Peas, Lettuces, and Parsnips; Ergot, Dodder, the Potato disease, and other subjects. Upwards of 140 new illustrations from living examples have been drawn and engraved for this book by Mr. SMITH. Most of the original camera-lucida drawings on paper, the herbarium examples, the microscopic slides, and a set of proofs from the blocks before printing have been placed in the Department of Botany, British Museum (Nat. Hist.), South Ken-

- TRUFFLES IN CALIFORNIA,-A somewhat sensational article appeared in one of the Californian journals, announcing, as if it were a matter of econo-



FIG. 154.-RHODODENDRON CAMPYLOCARPUM: FLOWERS PRIMROSE-YELLOW: POLLEN GRAIN MAGN. 200. (SEE P. 832.)

mical importance, that Truffles had been found in California. Four specimens, which occurred in the University grounds at Berkeley, Allameda Co., California, which are probably all that have been found, were sent by Mr. J. J. RIVERS, Curator of Organic Natural History in the University, and these consist of one species apparently identical with the red Truffle of Bath, Melanogaster variegata, two belonging to the group of real Truffles, and one very anomalous production which I cannot refer at present to either division—one a real tuber, with hispid elliptic spores, which if new is closely allied to the British T. ruffum; the other, of a beautiful cherry-red when fresh, belongs to the genus Pachyphlæus. All too small to be of any culinary value. Though the red Truffle is used at Bath, its merit is rather to make the sauce of a dark brown colour than from any pleasant flavour. The four will be characterised in a forthcoming number of Grevillea, where the fungi, collected by Dr. HARKNESS himself, have already been published. M. 7, B.

FLOWERS FOR CUTTING AT ASCOTT .- So great is the need of finding out everything that is useful for cutting that many of our large garden establishments devote fine ranges of glass to the trial of new and the culture of well known plants useful for these purposes. In Mr. LEOPOLD DE ROTHS-CHILD's fine garden great provision is made, both indoors and out, for plants of this nature, and at the present time they are giving a great display of blooms, and the healthy succession plants giving liberal promise for the rest of the year. Neat, clean, wellbuilt houses are filled with Pelargoniums in full bloom, as sturdy and compact as those grown for the London market, and which market growers only are supposed to be able to grow. Others are devoted to perpetual-blooming Carnations (among which the fine rose variety, Mary Morris, is very telling), Eucharis, Gardenias, Tabernæmontanas, Stephanotis, Bouvardias, &c.; and to supply suitable foliage a fine houseful of Adiantum cuneatum. In another range the Dracænas, Crotons, Caladiums, and other finefoliage plants are well grown. The lofty Rose-house is covered with Maréchal Niel, Gloire de Dijno, and Duchess of Edinburgh Roses, as well as others, among which a great favourite is alba rosea. The conservatory, too, with its marble pavement, coallooking rockery and climber-covered roof and pillars, is as neat and well kept as all other things under Mr. JENNIOS' care. Outdoors the Pinks are found invaluable for cutting, and large borders of them are densely packed with their pretty fragrant flowers, the kinds most in favour being Dame Blanche, a pure white, with plain edge; Mrs. Sinkins, a fringed white; Mrs. Moore, white, with crimson eye; Harry Hooper, white, with purple eye and edge; Lord Lyon, rose, with crimson centre; and the old Anne Boleyn. The mule Pinks, too, are well grown. Every salient point is planted with Roses and other fine flowering shrubs, and all the walls and pillars with Honeysuckles and other climbers, the remaining Apple trees in what was an orchard many years ago being utilised to support the

heavy masses of old white rambling Roses. The lovely rocky dell, with its cool looking piece of water and natural sunk garden, is well kept, and a most cripyable spot at this season.

- MARKET STOCKS. - It is rather an odd fancy on the part of market growers of these flowers for bunching that they should prefer single to double ones. Almost invariably the double-flowered Stock has the preference everywhere; even the most intense devotees of single flowers, persons who will almost lash themselves into fury at the sight of a double Dahlia, yet positively go into ecstacies over a fine double Brompton. It is not any fancy for single fads that renders market growers the more fond of single Stocks. Their tastes are governed by pecuniary instincts; indeed, it is to them matter of the most absolute indifference whether flowers are double, single, or what, so long as they are abundantly produced, will bunch well, and, not least, will sell. The favoured colours in market Stocks are scarlet and white, and the most favoured kinds to produce these colours are the Scarlet Brompton and the White Queen. The Purple Queen is not only one of the hardiest and freest to bloom of all branching Stocks, but it always produces a very large percentage of doubles. Still the colour is not so acceptable as are white and bright red. The Scarlet Queen is free and hardy, but as a rule the colour of its flowers lacks richness. It is too pale; hence growers prefer the Brompton, and to produce a branching habit early pinch out the main stem. There are strains both of these and of the White Queen that never produce double flowers, and, as a consequence, plants are very robust. So great is the quantity of these Stocks grown in some of the fruit orchards during the year that in such seasons as the present they are more profitable than the overhead fruit trees are. Where Violets, Wallflowers, Stocks, Narcissi, and other favourite market flowers are so largely grown, the perfume is often singularly delightful when the atmosphere is humid.

- FROST EFFECTS ON THE FRUIT CROP .- If we only note well that which occurs each succeeding season, if it does not teach something that has not been frequently observed before, it goes to confirm that which was already known. The destructive April frosts that this season destroyed much we had hoped for after we had begun to think that our fruit crops would escape, has taught lessons that it is well not to lose sight of. Despite the unusual absence of sun during the winter months the extraordinarily mild weather brought much of the bloom of the early flowering fruits out earlier than usual; the bloom of Apricots in most parts of the kingdom was over and an unusual crop of fruit set when the frost occurred, of which in many places enough has escaped, but, in all of a number of gardens that we have had opportunity of seeing in widely different parts of the kingdom, the fruit on Apricots that has not been killed is on wood that is either touching the walls, or so near as all but to touch them; on spurs that stand at all out from the branches scarcely a fruit remains. The same holds good with Plums on walls; both these fruits have a tendency to get long in the spurs, Plums often bearing better when in this condition than when kept more trim in appearance. But this spring's frosts have acted as a reminder that the further the bloom-buds are from the wall the more danger they are in if a low temperature occurs either whilst the trees are in bloom, or after the young fruit is set. On Pears the effects of the cold April nights in many places are similarly apparent; the bloom on the long spurs where these exist has, as it usually does, suffered most. Moral. - Don't encourage the growth of long spurs.

—— SEEDLING FLORISTS' FLOWERS.—Mr. JAMES Lyrs, of Clyffe Hall, Market Lavington, has sent us flowers of a new Fuchsia and a new zonal Pelargonium, both of his own raising. The Pelargonium is of the brightest shade of rose with a light centre, and quite remarkable for the size of its truss. One of them consisted of no less than 143 pips and buds in various stages of development—quite a mass of bright colour. The seedling Fuchsia is—to us, at least—a novelty in shape, having long crimson sepals (and tube) of leathery texture, and a large corolla of broad, somewhat contorted petals, red at the base, shading off to purplish-maroon. If the babit is good this should be worth growing.

- Close Mowing.-Mowing machines have done something to enable such of the garden staff as had the work of mowing to do with the scythe to get more rest than when it had to be done before the dew was off the grass, and so far the change has been an Vet amongst those who are old enough advantage. to remember the condition lawns were in from thirty to forty years ago, when mowing-machines were little known, there will be few who have not noticed that they are the reverse of having been improved, especially on dry soils, and where the lawn is an old one, and been long subject to the impoverishing ordeal of having the grass continually kept short. be little doubt that the burnt-up, weedy condition, now often apparent on lawns, is to a considerable extent owing to the machines used being set too low, necessarily cutting the grass nearer to the roots than it can bear, the object of which may be traced to a desire to have the grass as short as it can be got, and also to escape the mowing having to be repeated oftener than can be avoided. In many cases, if the machine was set half or three-quarters of an inch higher than it is, the grass would be much benefited thereby.

- MULCHING. - The beneficial effects of mulching all plants that have their roots near the surface-especially kitchen garden crops-are more generally known than acted upon. A winter which left the soil drier than ordinary, has been succeeded by a spring with an unusually light rainfall, the result of which, despite the steady rain we had a few weeks back is, that in many places many of the autumn kitchen garden crops are likely to suffer severely unless means are taken to assist them by watering. Now watering is a heavy job, entailing much labour, and it is well where such work is done to take means to make the most of it. All experience points in one direction in the matter, which is that watering and mulching should go together as one good soaking will benefit a crop more, if the ground to which it is applied is mulched immediately after, than two or three waterings without the mulching.

- CANTERBURY BELLS, - These may well be classed as amongst the showiest of biennials. Perhaps that is faint praise, because many less beautiful flowers have been described as grand, splendid, and so on, and have much less deserved these glowing epithets. The Canterbury Bell is now something very different from its ancient progenitor. Probably when so designated the Campanula media really produced pendent or hanging flowers, and resembled bells. If that were so, now the course of Nature, or the persistent selection of the florist, has inverted the order of things, and the bells have become nearly erect—indeed, are cnps. Further, too, we see in them a wonderful departure from their original character, for now the blooms are very large, are of exceedingly handsome form, and bursting away from the once restricted hues of white and blue, include a score, not the least beautiful of which are the lavender, mauve, and rose colours. But with this development of variety in colour there has gone on much very marked development of doubling. Not only is one cup, as it were, lined by another, so that at the first the duplication of cups is not noticeable, but there may often be seen three cups also, and then there comes a fourth, and perchance a fifth, then the outer cup is filled to overflowing. All these double flowers are of fine form and very enduring; indeed, if grown only to furnish bloom for cutting, they would be singularly valuable. Curiously enough, the flowers expand in order of duplication—the singles first, the dense doubles last. The Calycanthema section produce curious and very pleasing flowers, but there is no reason why strains should be kept distinct; indeed, coupling them will but lead to increased It is not yet too late to sow seed for securing good blooming plants next year.

— CHLENOSTOMA POLVANTHUM.—About twentysix species of this genus are known to science, inhabiting the southern part of Africa. They are all of a
low herbaceous or sub-sbrubby character, and, judging
from those occasionally seen in cultivation, they
deserve to be more freely introduced for the adorament of the conservatory and greenhouse, or such
structure in which a low airy temperature is kept up.
C. polyanthum is figured in the Bolanical Register,
1847, t. 32, and may be seen in flower in the Capehouse at Kew. It is of low branching habit, with

leaves very similar to that of Lobelia erinus, and the flowers, of the most delicate lilac, with an orange eye, are several times as large as those of C. hispidum, which latter, however, is more floriferous. It is very appropriate for mixing and enlivening the front stages of a house with other low-growing subjects.

— Mr. John Wills.—The daily papers will have made our readers aware of the misfortunes which have fallen on Mr. Wills from causes to which we need not advert, suffice it to state, as the result of recent legal proceedings, the prosecution instituted against Mr. Wills has in the words of his advocate, "been most rightly abandoned," while the Recorder said he entirely agreed in that course. Several noblemen had come forward and said that they believed the company was a going concern and that they had put their money into it and advised their friends to do so. That was really the whole question in the case. The jury then, by the direction of the Recorder, returned a formal verdict of "Not Guilty," and Mr. Wills left the court.

— MR. JOHN COX.—We regret to hear that our old and valued contributor, Mr. JOHN COX, has been compelled to retire from the management of the gardens at Redleaf, Penshurst, Kent, which he has held since 1847. His former foreman, Mr. WILLIAM HOLAH, has been engaged as his successor.

— M. GROENEWEGEN.—The Dutch papers record the death of M. J. C. GROENEWEGEN, the Curator of the Botanic Garden at Amsterdam, at the age of seventy-three. The Amsterdam garden did for Java what Kew has done for our own Colonies, in the matter of the introduction of the Cincbona.

— Mr. JOHN BARRY.—Past and present members of the Fruit and Floral Committees who were not at South Kensington on Tuesday, will be sorry to bear that Mr. JOHN BARRY, who, for a number of years has been Mr. BARRON'S clerk-in-charge of the committee books, was on the previous Thursday taken ill, his malady being of such a nature as to in-capacitate him for work for some time to come. The members of the committee present, we are glad to say, showed their appreciation of Mr. BARRY'S unfailing attention to his duties, and their sympathy for him and his family, by a substantial subscription, which we desire to say has not been closed. Mr. SHIRLEY HIBBERD kindly undertook the duties of treasurer, and to receive any sums that may be sent to him on Mr. BARRY'S behalf.

MARSHALL WILDER.—It is with great concern that we learn that the veteran horticulturist has had to sustain the bitter loss of bis eldest son, on the 7th iost.

- THE WEATHER .- General remarks on the temperature, rainfall, and duration of bright sunshine, for agricultural and sanitary purposes, during the week ending June 23, 1884, issued by the Meteorological Office, 116, Victoria Street, London, S.W.: -The weather has been very fine and warm over our south-western districts, but more or less cloudy and cooler in all other parts of the kingdom. The temperature has been a little above the mean in "England, S.W.," and the "Channel Islands," and about equal to it in "Ireland, S.," but elsewhere it has ranged from 1° to 4° below its normal value. The maxima, which were registered on different days in inaxima, which were registered on dimentiously and the various districts, ranged from 75° in "England, S.W.," and 74° in the "Midland Counties" and "England, S.," to 68° in "Scotland, E.," and "England, N.W.," and to 60° in "Scotland, N.W. The minima were generally recorded on the 17th, and varied from 40° in "England, N.E.," "England, E.," and 50° in "Ireland, N.," to 46° in "Scotland, E.," and 50° in the "Channel Islands." The rainfall has been considerably less than the mean in all districts. siderably less than the mean in all districts. The percentages of possible duration ranged from 63 in the "Channel Islands" and 59 in England, S.W.," to 18 in "Ireland, N.," 9 in "England, N.E.," and 8 in "Scotland, N." Depressions observed. — Pressure has been high and uniform over nearly the whole of our area, the only depressions observed being situated over the Baltic. The winds in our islands have conour area, the only ways over the Baltic. The winds in our islands have consequently been light in force and variable in direction; but generally they blew from the northward or northwestward. By the close of the period the barometer porthwestern and northern coasts, was falling on our north-western and northern coasts, and the wind in Ireland and Scotland has shifted to the south-westward.

Home Correspondence.

The Potato Disease.—This unwelcome visitor has already put in an appearance in this district. It was first observed in a cottage garden, which is narrow, and surrounded with high hedges, and I now hear that it has spread to other gardens in the neighbourhood. Its early appearance this season is somewhat unexpected, as this district is suffering from an excessive drought. The country is parched up. Large tracts of land may be seen without a green blade of grass. I have a lot of early Potatos which have had their tops quite burnt away. The weather has also been very hot; the thermometer has on several days registered 80° and 82° in the shade, and once \$4°. The high temperature may account for the early appearance of the disease in such dry weather, coupled with the fact of the garden it first appeared in being confined. It is seldom that it puts in an appearance thus early, in weather so apparently unfavourable for its development. George Griffin, Slebeck Park. Pembrokschire.

Chrysanthemum segetum,—On p. 807 it is truly remarked that gardeners will find this an excellent plant to cut from during the summer. What is still more important might have been added—that it is an excellent plant to cut from during the winter. The plant is not annual, as is usually supposed, but at least biennial, and by a judicious selection of time for sowing and cutting back a single plant at two years old may have grown to a size of 40 r5 feet through. Large plants cut down to half their height before flowering in summer will produce a crop of flowers at the end of autumn, which, by the use of handlights, will continue to open through the winter in dry sunny corners. C. Wolley Dod, Edge Hall, June 21.

Double Daffodil Seed.—In reply to Mr. Bari's questions as the number of seeds in the podsof the double Daffodils, I may say that I found from fifteen to twenty seeds in a pod, and the greater part look bright, good seeds. I cannot, however, speak quite accurately, as before leaving home a week since, I looked at the plants, and finding one of the pods turning brown, picked them all, as the mice are very troublesome this year, and on my return found that all the pods had opened and some of the seeds had fallen out. W. Rolles Fryer, Lytchett Minister, Poole. [Mr. Brockhank writes that he has to day [June 25] gathered ripe seed from a marked bulb of Narcissus Telamonius plenus. It will be interesting to note in due season if the double flower is perpetuated in the seedling. ED]

Pentstemons.—It is not often one sees these in bloom so early as June in the open border, but last winter having been so mild, the shoots were uninjured, and the plants continued to grow uninterruptedly, forming, as they have, quite bushes, which are sending out strong spikes, that will soon make a grand show. Seedlings are so good now, that it is hardly worth troubling about named varieties, as plants may be raised annually from fine strains, that afford magnificent flowers; or cuttings may be taken, and any of special merit saved, and increased in that way if considered desirable. Ther way to propagate Pentstemons is to take off the half ripe shoots that are not showing flower, and put them in on a shady horder under a handlight, in sandy soil, where they should be kept close and moist, when they will quickly root; or they may be placed in pots and treated in the same manner, and when struck, potted off, and wintered in any cold frame. § 7. S.

Narcissus montanus Ripening Seed,—Mr. Balter in his "Review of the Genus Narcissus" mentions a prevalent opinion that N. montanus never ripens seed, Mr. Archer Hind has just sent me some ripe seed of it from his garden in Devonshire. C. Wolfey Dod.

Mr. Culverwell's Hybrid Raspberry.—I beg to thank you for exhibiting my hybrid Raspberry before the committee of the Royal Horticultural Society, but at p. 782 you say the committee does not endorse my opinion that the Raspberry is a hybrid, but no reason is given for their condemnation of what I say is a fact. I have plenty of facts to convince me that it is a hybrid, which I have stated in your columns before. I will now state another fact, bad to get over —my hybrid is sterile, and nothing can induce it to fruit, whereas R. Idaeus is a fruit-bearing plant. I crossed the Raspberry with the pollen of the Strawberry on two different occasions, and on each trial I raised several plants, perhaps forty in all, more or less like the Strawberry in the leaf—but all sterile. Some were quite dwart, being less than a foot high, while others grew to the ordinary height of the Raspberry; some had the calyx quite an inch long, some had green flowers, and all very curious. They all flowered—some had pollen, others had none, and as

they showed no signs of fruiting they were all destroyed but three, which had the greatest resemblance to the Strawberry both in leaf and flower. I might ask, Were all these plants, of various sizes and forms, Ideus? or, was it not curious that the three plants I did save should be pronounced Ideus, although the flowers are imperfect and not fruit-bearing. Another fact—Rubus Ideus cannot be found in any part of this district. I have been able to examine some thousands of seedling Raspberry plants sown by birds in a covert, but not one of the form of R. Ideus could be found. I had no idea of provoking a discussion on this subject, but sent it to you as a curiosity, with my hybrid Currant, which I think no one has yet ventured to say is not a hybrid. William Cutverreal, Thorpe Perrow.

The Rocket Candytust Empress.—I am rather disappointed with this new Candytust, not because, it well selected, it is not a fine thing, but rather that it has been put into commerce so hadly selected. In order to have it in its hest form I sowed seed in a cool house late in the autumn, and dibbled the plants out into good soil during the spring. They are now in bloom, but only about 20 per cent. have the true character—that is, single stems, robust foliage, and heads breaking up into four or five fine spikes. That form is a really sine one, but seems to need several form is a really sine one, but seems to need several form, that it may be had true. The major portion of the plants are very uneven in growth, are branching, and differ little from the old white Candytust, beyond being rather more robust. It is a pity so sine an annual has been so hurriedly put into commerce, as if in a really set form it would be a grand acquisition to our flower gardens. A. D.

The Phœnix Hoeing and Raking Machine,
—At p. 774 we noticed a satisfactory trial of this new
machine, which has reently been made in the Phœnix
Park, Dublio, in the presence of several well-known
practical gardeners. We are now coabled to give an

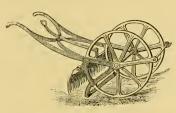


FIG 155.-HOEING AND RAKING MACHINE,

illustration (fig. 155), which shows the character of the machine better than it can be described, and need only now add that where the soil is of a loose, sandy character, its use must effect a great saving in labour.

Dianthus glacialis.—The figure hearing this name on p. 809 is a good representation of the best early alpine Pink in cultivation, but I think it is not D. glacialis. I need not repeat what I have said about it on p. 528, but may say that I have twice sent it to Kew for an opinion, and that the same judgment was passed upon it both times, that it is an early and very floriferous variety of D. alpinus. According to Pritzel's Index Iconum the true D. glacialis has never been figured in any English work. My friend Mr. E. Loder has many dried specimens in his herbarium, but neither he nor I have succeeded in making it flower in England. C. Wolley Dod.

Striking Cuttings in Moss.—I send you some rooted cuttings of Coleus, showing the method of propagation I have adopted this season. Instead of pricking them out in cutting pots or pans, I tie a small ball of moss at the base of each cutting, and put them singly in thumb-pots without any soil, to keep them in a vertical position. Those now sent were put in the moss ten days ago. I venture to think this system will be of much use to many of your readers, as the cuttings rooted in this way can so easily and so cheaply be sent by post, and will receive no check to their growth. No cuttings that I have tried refuse to strike in this way, and I should add that I do not remove the moss when potting them on. Yames Lye, Market Lavington, June 18.

A Hybrid Foxglove.—A few years since I succeeded in obtaining a cross between Digitalis purpurea and D. lutea, but the plants did not long endure. I have now blooming some half-dozen plants of an undubted byhrid of natural production between D. lutea and D. purpurea of the fine garden forms. D. lutea was the seed parent, and the hybrids resemble that form in habit, but the foliage is larger and darker,

the stems taller, the blooms finer, and though most of them are of the same creamy hue, they have unmistakeable evidence of the spotted marking in the throats that so richly mark our garden Foxgloves. Curiously enough, in time of blooming the plants assume an intermediate place, comiog between the garden kinds some time in full bloom, and D. lutea, which is not yet in flower. A. D.

The Double White Rocket. — This charming form of this fine old hardy plant was seen in rate condition at the exhibition of the Royal Elotanic Society on the 18th inst. There were two huge bunches of spikes of flowers shown among a collection of miscellaneous plates by Mr. E. S. Williams, of the Victian Nurseries, Holloway. It is the variety that is met with in Lancashire, Cheshire, Derbyshire, and other midland counties, and as different from the double white Rocket found in the South of England as can well be. To begin with, the flowers are of the purest white, small, full, well formed, and produced on long symmetrical spikes, reminding one of those of the Candelabra Larkspur. It is a plant of smaller growth in all its parts than the old French White, and does not grow so readily in the South as the variety we are accustomed to see. It seems to require a cool, moist climate, and this is why it is that it dourishes so well in different parts of Lancashire. We have tried it round London, both in pots and in the open ground, but it always died during the hot weather of summer. It would perhaps do better when it became thoroughly established in the hardy border. It is while establishing itself that it comes to grief. Z.

— This is one of the very good things I had a note taken of to bring before you for commendation when I saw the observations of "A. D.," at p. St2. He is quite right in saying that the rose or the purple-timed variety is generally sold as the real "Simon Pure." One of the reasons, I believe, is that the real double pure white is slow and difficult of propagation, which does not 'commend it to nurserymen. Some years since I got a plant from the Hon. Mrs. Bagwell,

establishing itself that it comes to greet.

— This is one of the very good things I had a note taken of to bring before you for commendation when I saw the observations of "A. D.," at p. 812. He is quite right in saying that the rose or the purple-tinted variety is generally soid as the real "Simon Pure." One of the reasons, I believe, is that the real double pure white is slow and difficult of propagation, which does not commend it to nurserymen. Some years since I got a plant from the Hon. Mrs. Bagwell, Marlifield, and have but two large ones at present, but these I have been cutting spikes from for visitors and decoration for weeks, and from all I learn it must be as "A. D." intimates, rather scarce. As a sweet-scented showy border flower in May and June there is certainly no other white to come near it, especially for cutting. The true variety I know was at Swanley, but I cannot say if Mr, Cannell has it now. W. J. Murphy, Clounel.

— Like many other of the fine old border plants

Like many other of the fine old border plants this Hesperus seems to have almost died out, or to have been discarded and lost, as it is seldom met with now, and yet it is one of the most desirable early blooming subjects any one can grow, sending up, as it does, giant spikes of pure white blooms as large and full as those of the Stock. I was much struck with one I saw the other day, which was a perfect bush a yard through, and nearly as much in height, and crowded with flowers. I wonder if this Rocket would force, as, if so, what a valuable thing it would be for the greenhouse or conservatory, or for cutting from early in spring. Anyhow it is so good that it should be in every garden border, and all it wants near is a Delphinium or I wo to back up and make a fine contrast. Y. S.

Fonaria sanguinea, Pim.—It is generally unsafe to found a new genus from imperfect materials, Mr. Pim does not mention autheridia in his description of this fungus, but I saw them. The fuogus he adverts to differs but little from Pythium except in the torulose septate mycelium. The blood colour was not a character of Mr. Pim's fungus, it was merely derived from the blood-coloured fungus, named Isaria, on which it grew. As I have seen a similar fungus with Mr. Pim's producing globular oospores as well as the little zoospores in the sporangia, I think there can be no doubt that the Glasnevin plant is a Saprolegnia, and under the mame of S. philomukes (philos, I love; mukes, a fungus) I have illustrated it from living examples, the sheets belog now in the press. W. C. S.

ROYAL AGRICULTURAL BENEVOLENT INSTITUTION.— The annual general meeting of this Society was held at Willis' Rooms on the 18th inst., Lord Carrington in the chair. From the twenty-fourth anoual report we learn that, although the increase in subscriptions and dooations for the year ending December, 1883, was not especially marked as compared with 1882, the standard of that year has been more than maintained. In the latter year the total amount received under the head of subscriptions and donations was £(1,3,12 188, 84, being £2300 in excess of any previous twelve months, and in the balance-sheet dealing with accounts for 1883 it is seen that the income from those sources reached in that year £(13,465 195, 94), being a further increase of £250. There are now on the books of the Institution 97 males, costing £2522; 337 females, costing £7407; 75 married couples (or 150 person), costing £3000; and 8 children, costing £165 per annum; and on the same day 64 fresh pensioners, exclusive of octogenarians, were added to the list.

Reports of Hocieties.

Royal Horticultural: June 24,

Royal Horticultural: June 24.

SCIENTIFIC COMMITTEE. — Professor Michael Foster, F.R.S., in the chair. Present: Messrs. Grote, Houston, Masters, Ridley, Murray, Loder, Lowe, W. G. Smith, A. W. Eennett, Boulger, and the Rev. G. Henslow, Secretary.

Potato Disease, & — Mr. W. G. Smith stated that he had been informed of the outbreak of the Potato disease in the neighbourhood of Bedford, and also alluded to the existence of a Fusisporium, probably parasitic, upon Agaricus gloiocephalus, to a Saprogenia, parasitic, upon the common Mushroom, and to Æcidium convallarire, which will be figured in a subsequent number.

to Acadum convallarire, which will be figured in a subsequent number.

Disease of Yew.—Mr. Smith shower perceimens of Yew fatally attacked by Spherella Taxi: see p. 827.

Disease of Pertugal Laurel.—Mr. Murray reported that he had examined specimens of the "sliver leaf" but had not found traces either of fungus or of insect, but only evidences of defective nutrition, the causes of which were not obvious.

Highrid Visits —Professor, M. Fectors whilitied on

Hybrid Irises.—Professor M. Foster exhibited an interesting series of hybrid Irises raised by himself, and made some comments upon them, which it is to be hoped will ultimately be embodied in some com-

Plants Exhibited.—Mr. Loder showed specimens of the true double white Rocket, and of a hybrid Fink raised between D. alpinus as the seed-parent, and D. barbatus as the pollen-parent. The flowers opened of a pure white, but ultimately became deep rose. Professor Foster showed a hybrid between D. alpinus 97, and D. superbiens 5°. From Messrs, Veitch came a plant of Drosera auriculata. From Mr. Noble came a Clematis with double flower the Mr. Noble came a Clematis with double flowers, the plant bearing which was said to produce single flowers later on. Other specimens were exhibited, but which were not of general interest.

but which were not of general interest.

FLORAL COMMITTEE.—Present in Section A.:—
John Fraser, Esq., in the chair; Messis, H. BallanJohn Fraser, Esq., in the chair; Messis, H. BallanJohn Martin, J. Laing, H. Williams, T. Moore, E. Hill, J. O'Brien, J. Woodbridge, Dr. Masters, and Rev. G. Henslow. Section
B.:—Shirley Hibberd, Esq., in the chair; Messis,
Il. Cannell, H. Bennett, W. Bealby, G. Duffield,
and H. Turner. Mr. T. S. Ware, who is making a
continuous display in the conservatory, had again on
view a most remarkable collection of hardy berbaceous and alpine plants, which were awarded a Silvarceous and alpine plants, which were awarded a Silvargilt Flora Medal. Ilardy flowers were also contributed in large groups by Messis. Barr & Son,
Messis Kelway & Son, Messis. Hooper & Co., and
Messis, James Veitch & Sons, and Mr. Noble contributed a small group of well flowered Rhododendrons. The new plants exhibited included a choice
set of new tuberous Begonias from Messis. John
Laing & Co., two of which were certificated—Her
Majesty, a very pretty white flower shading to rosepink on the margin; and Torey Laing, a large flat
flower of great substance, and bright yellow in
colour. Mr. B. S. Williams had Leelia purpurat
atropurpurea, specially rich in the deep colour of the
labellum; Odontoglossum Williamsianum, a natural
hybrid between O. grande and O. Schlieperianum,
with a hold showy spike of flowers of the O. grande
type, yellow with brown markings; Croton Flambeau,
a very richly coloured form of the angustifolius type;
Amaryllis Ferdinand de Rothschild, intense crimson,
and A. marginata grandiflora, crimson, banded and
harred with white. Sir Trevor Lawrence had a very a Very nichly coloured form of the angustifolius type; a Amaryllis Ferdinand de Rothschild, intense crimson, and A. marginata grandiflora, crimson, banded and barred with white. Sir Trevor Lawrence had a very distinct Odontoglossum in O. excellens, primroseyellow, with a white centre, and purple-brown spots. Baron Shroeder exhibited Odontoglossum crispum Veitchianum (the plant shown last week at Regent's Park, as O. crispum mirabile), a superb variety, white partially suffused with violet, overlaid with numerous brown blotches; and Ledia Dominiana rosea, a fine variety with a richly coloured labellum. Mr. W. Soper, 307, Clapham Road, sent a plant with two fine spikes of a pure white form of Odontoglossum citrosmum; and Mr. De B. Crawshay had the highly coloured Anguloa Ruckerii sanguinea. Messrs, lames Veitch & Sons showed another of their graod strain of hybrid Rhododendrons, R. President, bearing a fine truss of reddish-orange coloured flowers; Drocera auriculata, a slender growing species; Phyllanthus subemarginatum, an eigant little plant with insignificant white flowers; and Philodendron grandidens, a robust growing New Grenadan species with long heant white flowers; and Philodemfron grandidens, a robust growing New Grenadan species with long broad leaves, deep green, with white veins. Mr. H. M. Follett showed Odontoglossum Pollettianum and O. Pescatorea punctatum. Messrs. William Paul & Son exhibited the new Tea Rose, Sunset, raised by Mr. Peter Henderson, of New York, and which is of the Petie des Jardins type, but of a darker shade in colour. Mr. Turner had a stand of four sorts of heavy-edged Picotees raised by Mr. Fellowes—Min-

erva, purple; Hebe, dark purple; Picturata, rose-pink; and Ensign, heavy red. Mr. W. Stacey, Dunmow, again sent a fine stand of Verbenas, one of which, named striata, rich pink with a white stripe, was singled out for an award. Mr. Bennett, of Shepperton, sent a pretty box of hybrid Tea Roses, including the rich-coloured Countess of Pembroke and Cleopatra, flesh-pink, with the backs of the petals shaded rose, and the petals broad and well rounded.

The awards made were :-

Section A.

FIRST-CLASS CERTIFICATES.

To Baron Schreeder, for Odoutoglossum crispum

To Baron Weitchianum.
To Baron Schreeder, for Lælia Dominiana rosea.
To Mr. B. S. Williams, for Lælia purpurata atropur-

purea. To Mr. B. S. Williams, for Odontoglossum Williamsianum.

To Mr. B. S. Williams, for Croton Flambeau.

To Sir Trevor Lawrence, Bart., M.P., for Odontoglos-

m excellens. To Messrs. James Veitch & Sons, for Drosera auricu-

To Messrs, James Veitch & Sons, for Rhododeudron

President,
To W. Soper, Esq., for Odontoglossum citrosmum
var, album.
To De B. Crawshay, Esq., for Anguloa Ruckerii san-

Section B. To Messrs. John Laing & Co., for Begonia Her Majesty.
To Messrs. John Laing & Co., for Begonia Torey

Laing,
To Messrs, W. Paul & Son, for Tea Rose Sunset,
To Mr. W. Stacey, for Verbena striata,
To Mr. Turner, for Picotee Picturata.

FRUIT COMMITTEE. — Present: Henry Webb, Esq., in the chair; Messrs. J. Lee, F. Rutland, G. M. Breese, G. Bunyard, C. Ross, J. E. Lane, W. Faul, R. D. Blackmore, J. Ellam, G. T. Milles, H. J. Veitch, J. Roberts, and J. C. Mundell. Mr. Roberts exhibited three highly finished bunches of Duke of Buccleuch Grapes, quite ripe and free from spot. Mr. Bolton, gr., Combe Bank, Sevenoaks, sent a bush heavily ladeen with fruits of Bolton's Prollife Gooseberry, an oval-shaped, slightly hairy fruit, certainly borne in great profusion. Mr. Parr, gr., Givon's Grove, Leatherhead, sent a fruit of the Good-owod Melon weighing 14 lb. 2 oz. Seedling Melons were exhibited by Mr. C. Ross, Welford Park, Mr. E. S. Wills, The Gardens, Edgote Park, Banbury, and Mr. C. Ilowe, gr., Benham Park, Newbury, but no awards were made.

FRUIT AND VEGETABLE SHOW.—The display made to-day was not so large as on the last occasion, but was thoroughly representative of the comestible products in season; and as regards Grapes especially it may be said that finer have not often been seen in June. There were only three collections of fruit, and the prizes fell to Mr. Coleman, gr. to Lady Henry Somerset, Eastnor Castle; Mr. Miles, gr. to Lord Carrington; and Mr. Waterman, gr. to H. A. Brassey, Esq., M.P., Preston Hall, Kent, in the order named. Mr. Coleman, who was closely run by Mr. Miles, had a couple of fine Queen Pines, good examples of Black Hamburgh and Foster's Seedling Grapes, Blenheim Orange Melon, Royal George Peaches, finely coloured; Lord Napier Nectarines, Bigarreau Napolcon Cherries, and Brown Turksy Figs. The best pairs of Pines came from Mr. Colmen, The Hendre Gardens, Monmouth; Mr. Miles, and Mr. Fry, The Gardens, Haydon Hall, Eastoot; and the best basket of 12 lb. weight of Grapes, a splendidly finished lot of Black Hamburghs, came from Mr. Tavener, Woolmer Gardens, Liphook; Mr. Turton, gr., Maiden Erleigh, being a very good 2d, and Mr. Coleman 3d. For two bunches of black Grapes, Mr. Tavener was again 1st, with handsome shaped, well swelled, and superbly coloured bunches of Black Hamburghs; Mr. C. Herrin, gr., Chalfont Park, Gerrard's Cross, coming in 2d; and Mr. Wildsmith, gr., Heckheld, 3d. Mr. Herrin took premier bonours in the white Grape class, with Foster's Seedling. The best three dishes of Strawberries, thirty fruits of each, and very fine samples of Marguerite, Empress Eugénie, and Sir Joseph Paxton, came from Mr. T. Sharpe, Knowle Iliil, Chertsey; Mr. C. Haycock, gr. To Neare, Hounslow, was 1st, with Sir Charles Napier. With capital samples of Elton and Black Tartarian Cherries, Mr. Roberts again secured a 1st prize; and to Mr. Waterman a similar award went for fifty fruits of any other variety," Mr. Thompson, gr., Croxby Honse, Hounslow, was 1st, with Sir Charles Napier. With capital samples of Elton and Elack Tartarian Che AND VEGETABLE SHOW .- The display

from Heckfield, Barham Court, and Eastnor, in the order named. The Peach and Nectarine classes were order named. The Peach and Nectarine classes were especially good ones, remarkably fine fruit being shown in both. The 1st prize dish of Peaches, from Mr. Johnstone, gr., Eapham Abbey, Sussex, was the admired of all beholders, the individual fruits being of wondrous proportions. The variety was Rivers' Early York, which we certainly never saw of such a size before. A handsome sample of Grosse Mignonne, from Mr. Farrance, of Chadwell Heath, was 2d, and Mr. Wildsmith 3d, with some highly coloured Crimson Galande. Mr. Turton took the lead in the Nectarine class with splendidly coloured fruits of Violette Hátive, Mr. Haycock being a good 2d, with Elruge; and Mr. Mowbray, gr., Fulmer, Slough, 3d, with Pitmaston Orange, of fine size and quality. The Melon prizes were awarded to Mr. Mowbray, Mr. Coomber, and Mr. Wildsmith; but as the fruits were not cut we should not like to confirm the correctness of the judges' decision in so but as the fruits were not cut we should not like to confirm the correctness of the judges' decision in so placing them. They may have been correct, and we do not say that they were not; but if the prizes are to be awarded in the same way next month it would be as well to know it, because a fruit that is sound in the rind and something more than ripe within will be the one to stage, though not one that would please the palate. Flavour and aroma do not always run torether in Melons.

the rind and something more than ripe within will he he one to stage, though not one that would please the palate. Flavour and aroma do not always run together in Melons.

The class for a collection of vegetables brought out five excellent lots, and Mr. Miles again headed the list of winners with a first-class lot, which included Green Globe Artichokes, White Naples Onions, Nantes Horn Carrots, Lady Paget kidney Potatos, Canadian Wonder Beans, Stamfordian Tomatos, Canadian Wonder Beans, Stamfordian Tomatos, Pride of the Market Peas, Erfurt Cauliflowers, and Moore's Cream Marrow, all of the finest quality. Mr. Waterman was a close 2d, and Mr. S. Haises, gr., Coleshill House, Highworth, a very good 3d, a fewpoints behiod being Mr. Ward, gr., Longford Park, Salisbury, and Mr. Meads, gr., Beckett Park, Shrivenham. Mr. Meads was 1st or Potatos, with Woodstock Kidney; Mr. Hart, gr., Glenhurst, Esher, 1st for Tomatos, with Trophy; Mr. S. Haines 1st for Tomatos, with Trophy; Mr. S. Haines 1st for Tomatos, with Trophy; Mr. S. Haines 1st for Tomatos, with Stratagem, Telephone, and Telegraph; Mr. Mulir, gr., Margam Park, 1st for noe dish of Peas, with Duke of Albany; Mr. Mulir 1st again for a collection of Peas; Mr. Ward 1st with Carter's Leviathan Longpod Beans; Mr. Waterman 1st with Canadian Wooder Kidney Beans and with French Forcing Carrots; Mr. C. Osman, South Metropolitan District Schools, Sutton, 1st, with Sutton's Improved Telegraph Cucumbers; Mr. Mulir 1st with a collection of Lettuces, and Mr. G. H. Richards, gr., Somerley Park, Ringwood, 1st for Salads.

Messrs. Webber & Co.'s special prizes for the best packed three boxes of fucit.—Grapes, Feaches, and Strawberries—were won by Mr. Turton and Mr. Coleman and Mr. Eldridge, gr., Chesterfield Park, af Salfron Walden, in the order named. Mr. Turton and Mr. Coleman and the additional section of the seas reverse won by Mr. Turton and Peaches in soft moss; both sent fruit of high quality, but Mr. Turton's Grapes showed the least rubbing, and were of unexceptionable qu

of unexceptionable quality in other respects.

Messrs. Wheeler & Son's prize for Kingsholm Cos
and Tom Thumb Lettuces was taken by Mr. Muir,

the only exhibitor.

York Gala: June 18, 19, and 20.—This, the twenty-sixth show held by this Society was a success in every way. The numerous classes in the several departments for plants, fruits, and flowers were well filled with the exception of our Roses, which, as a matter of course, were in a great measure confined to flowers grown under glass, through the fact of the outdoor bunsual number of chulbitors in the state of the new control of the country of their productions, was such as to make up for the classes for cut flowers, combined with the quality of their productions, was such as to make up for the deficiency of Roses. Fruit was present in large quantities and good condition, there being comparatively little shown in the insufficiently ripe state that often mars the appearance of the displays at the early summer shows. The class for sixteen stove and greenhouse plants, ten flowering and six fine-leaved, is always the chief attraction here. On the present occasion there were four competitors—Mr. Letts, gr. to the Earl of Zeldand, Aske Hall, Richmond, Vorkshire, being well in front with a fine group, containing some extraordinary examples, amongst which was the finest Ixora occcinea we have seen for some time bearing about a cordinary size; Phoenocoma prolifera, an immense bush 3½ feet through, profusely covered with flowers of the deepest colour; Anthurium Andreanum, bearing invery large bright coloured spathes; Anthurium Scherzeinaum, a large flowered variety, carrying about sixty blooms; Allamanda grandiflora, Erica depressa, and Azalea Due de Nassau, all in excellent condition; the fine-leaved plants, which were staged so as to form a background to the flowering examples, included a grand specimen of Encephalartos Vroomii, Croton Queen Victoria, nearly y feet in diameter; and a well grown specimen of Kentla Fosteriana. Mr. Cypber, Queen's Road Nurseries, Cheltenham, who was 2d, had, amongst others, a

splendidly flowered Stephanotis, a few days short of being at its best; Darwinia tulipifera, Pimelea diosmæfolia, and Clerodendron Balfouranum. 3d, Mr. Berrys gr. to W. Dove, Esq., Crown Cottage, York, gr. to T. Green and the state of the

FINE-FOLIAGED PLANTS.—In the class for six 1st honours went to Mr. Cypher, who had nicely grown plants; 2d, Messrs. Bailey & Sons, St. Oswald's Nursery, Fullord, whose group was composed of larger specimens but deficient in colour; 3d, Mr. Noble. Three foliage plants.—Mr. Letts, who was 1st, staged a pretty lot, containing a good plant of Cordyline indivisa. Mr. J. McIntyre, gr. to Mrs. Gurney Pease, Woodside, Darlington, was a good 2d, showing; in a well grown group a fine specimen of Cycas circinalis. Four Crotons.—Here again Mr. Letts was 1st with medium-sized highly coloured examples of C. Warreni, C. Johanis, C. majesticus, and C. Mortii; 2d, Mr. McIntyre.

nis, C. majesticus, and C. Mortii; ad, Mr. McInityre.

FERNS were shown in quantity, a tent being devoted to them. They were in very nice condition, and although the competing groups were in a great measure and although the competing groups were in a great measure of the state
ORCHIDS were shown in good condition, the flowers collectively being fresh and at their best. There were fewer made-up specimens exhibited than is often seen nowadays. With six Mr. James Sunley came in 1st, Mr. Rollisson 2d, and Mr. Cypner 3d. Three Orchids.—1st, Mr. Cattwright, gr. to A. Wilson, Esq., Hull; 2d, Mr. James Sunley; 3d, Mr. Eastwond, gr. to Mrs. Tettey, gr. to B. Hemsworth, Esq., Milford Junction, with Trichopilia crispa, very well bloomed; 2d, Mr. James Sunley; 3d, Mr. Rollisson.

Trichoplila crispa, very well bloomed; 2d, Mr. James Sunley; 3d, Mr. Rollisson.

PELARGONIUMS, as usual, were a feature, such as is not now to be seen elsewhere, one of the large tents being completely filed with midst of the centre stage. The plants collectively in the various classes were models of high cultivation, sufficiently large, and profusely flowered, the flowers backed up with good healthy foliage. With the flowers backed up with good healthy foliage. With a faultless dozen, splendidly bloomed, and nicely trained; Mr. Rylance was a good 2d; and Mr. Macintosh, gr. to J. T. Hingston, Esq., York, 3d. Six show Pelargoniums: 1st, Mr. Eastwood, with plants similar to those in the large class; 2d, Mr. Macintosh. Three show varieties.—With these Mr. Eastwood took the lead, having grandly flowered plants; 2d, Mr. Macintosh. Zonals were in no way inferior to the large flowered kinds, their general condition, including a profusion of flower just brought out to the day, was such as is rarely seen. Here again Mr. Eastwood had 1st honours; 2d, Messers. Tybas & Son, Rypon, 3d. St. Solepas, 3d. Mr. Eastwood, with plants of a like description to those he had in the preceding class; 2d, Mr. John Sunley. Double zonds were also splendidly shown. Fancy Pelargoniums, now so seldom met with in really good condition, were beautifully done, Mr. Eastwood here again heading the list with a large, profusely flowered group; 2d, Mr. Rylance. With three fancies Mr. Eastwood scored another win, thus taking 1st in the whole of the nine classes for flowing Pelargoniums—a feat that, it may be safely said, has never been equalled in such company as he had here to compete with one server the unmerously represented.

POT ROSES at midsummer are not to be had in the rearm enoughton as sective that they were prevertheless.

POT ROSES at midsummer are not to be had in the same condition as earlier, but they were, nevertheless, present in considerable quantities and in creditable order. In the open class for six Messts, Pybus & Son were 1st, with nicely flowered plants about 3 feet through; 2d, Messrs, Jackson & Co., Bedale; 3d, Mr. II. May was Bedale, Nine Roses in 8-inch pots.—Here Mr. May was

zst, putting up a nicely flowered lot; Messrs. Pybus & Son and Messrs, Jackson & Co, were placed equal 2d. First honours for twelve in 8-inch pots went to Messrs. Jackson & Co., for a pretty group; 2d, Messrs. Pybus, who also had a nice group;

ALPINE AND HERBACEOUS PLANTS were we'll shown, ALFINE AND HERR ACEOUS PLANTS were well shown, MESSTS. Billey & Son taking the 1st prize in the class for twenty, with a nicely varied collection; Masters W. H. and J. A. Rodwell, acj. Mr. Simpson, 3d. Six tuberous-rooted Begonias.—These were nicely shown by Messrs. Bailey & Son, and Mr. Nicholson, Thirsk, who were 1st and 2d in the order named. Gloxinias were very well done, in the class for twicks, first, who were very well done, the class for twicks, first, which is colour; 2d. Mr. Berry. Six Gloxinias.—1st, Mr. Russell; 2d. Mr. Berry. With six Coleus, Mr. Lezenby, who had well grow plants, with the colour fully brought out, took the 1st prize. prize.

prize.

The liberal prizes offered for groups of plants arranged for effect brought out a keen competion, filing one of the large tents; in the larger team of the large tents; in the larger team of the l small examples in nice condition.

small examples in nice condition.

FRUIT.—For eight dishes Mr. McIndoe was 1st with a good even collection, consisting of Black Hamburgh and Muscat of Alexandria Grapes, a Queen Pine, Bellegarde and Alexandra Noblesse Peaches, Pitmaston Orange Nectarine, Best of All Melon, and Brown Turkey Figs; 2d, Mr. Westcott, gr. to the Duske of Cleveland, Raby Castle, Darlington, who also showed a good collection; 3d. Mr. Elack, gr. to the Misses Pease, Darlington. With six dishes Mr. McIndoe was also rst, staging a good lot, most of the varieties of which were similar to those he exhibited in the preceding class. Mr. Wallis, gr. to Sir H. M. Thetap, Son, Yark, who was 2d, had, if we went of Grapes, Grosse Mignonia Meland Vloette Haitive Nectarion, St. Mr. Clayton, gr. to Mr. Clayton, gr. to Mr. Clayton, Edg. Graps Mr. Clayton, gr. to Mr. Clayton, Edg. Grinston Park, Tadeaster, was 1st, vith. Black Hamburgh Grapes, A Bec Peaches, Violett Haitive Nectarines, and a Melon—all in excellent order; 2d, Mr. Cartwright, who had, along with others, a good dish of Peaches. With a single Fine, any variety, Mr. Hare, gr. to R. H. C. Neville, Esq., Grantham, was 1st, showing a nice Queen; 2d, Mr. Black, Black Grapes were well shown. For three bunches Mr. Johnson, gr. to H. Gill, Esq., Boston Spa, took the 1st prize with compact, nicely finished examples; 2d, Lord Hotham, South Dalton Hall; 3d, Mr. Dawes, gr. to the Hon. Mrs. Meynell Ingram, Temple Newsam. Three bunches of Muscats.—sts, Mr. Jefferson, gr. to T. Earnshaw, Esq., Sheffield, who had Muscat of Alexandria, unusually well coloured for so early in the season; 2d, Mr. McIndoe; 3d, Mr. Clayton, with good bunches and ange even berries, that wanted more time. Three bunches of any other white Grape.—rst, Mr. Dawes; 2d, Mr. Cartwright. Dish of Peaches.—rst, Mr. Juzey, gr. to W. St. Quinton, Esq., Scampston Hall, with beautifully coloured Crimson Galande; 2d, Mr. Mitchell, gr. to M FRUIT.-For eight dishes Mr. McIndoe was 1st with to W. St. Quinton, Esq., Scampston Hall, with Geaultully coloured Crimson Galande; 2d, Mr. Mitchell, gr. to Lord Wenlock. Dish of Nectarines.—Tst, Mr. John Sunley; 2d, Mr. McIndoe. Scarlet-fleshed Melon.—1st, Mr. McIndoe, with Best of All; 2d, Mr. J. Edmonds, Bestwood. Green-fleshed Melon.—1st, Mr. Dawes; 2d, Mr. Mitchell. Dish of Figs.—1st, Mr. McIndoe, with nice Brown Turkey. Some fine Strawberries were shown, Mr. Cartwright being 1st, and Mr. Wallis ad

Wallis ad.

Vegetables were present in quantity and good condition; for eight dishes, Mr. Hemming was 1st, and Mr. McIndoe ad.

A good collection of misrellaneous plants was shown by Mr. B. S. Williams, Victoria Nursery, Upper Holloway, consisting of Orchids, Nepenthes, Sarracenias, Heaths, Amaryllis, and other stove and greenhouse flowering and fine-leaved plants. Messrs, Richard Smith etc., of Worcester, had a fine group of Clematis in pots, very nicely arranged. A First-class Certificate was awarded to this firm for a new Clematis, Beauty of Worcester, af free-blooming, medium-sized, six-petalled flower, with broad petals; in colour it is a very deep blue-purple: a distinct-looking variety.

Leeds Horticultural: June 25, 26, and 27.—This important gathering of West Riding horticulturists was opened on Wednesday in the gardens of the Horticultural Society of the town, and remained open for three days. The site is an excellent one, being at some distance across the breezy Town Moor, and therefore somewhat removed from its ever-abundant smoke. We would say that it is the home of the Horticultural Society in prospective, for beyond securing the site, not much has as yet been taken in hand in essectially horticultural matters to render it worthy of this wealthy horticultural matters to render it worthy of this wealthy horticultural matters to render it worthy of this wealthy horticultural matters to render it worthy of this wealthy horticultural mattering centre. This is the mare regretable, seeing that with the exercise of Judgment in making a selection of the plants, shrubs, and tree found to do well in the particular locality, a garden would be accessible to the gradeners of the ownstand to the public in general, in which many useful lessons

might be imbibed in the art and science of a profession that is daily found to be growing more in importance, and that finds almost everywhere the highest appreciation.

The exhibition was held in three tents, pitched so as to form a long nave of about 100 yards, with two annexes one on either side, of about half the length of the first-

one on either side, of about half the length of the firstnamed tent. There was ample space for cultivators to
arrange their exhibits, and likewise for the visitors to
promenade in all directions without an approach to overcrowding. The largest tent was set apart for groups of
stove and greenhouse plants, for fine-foliage plants, and
for groups of small decorative subjects, put together on
the level turf en echelon—some of these occupying 216
square feet, and others 96 square feet, and notwithstand
ing the fact of these groups being strictly rectangular in
shape, their arrangement in themselves, and land the
regard to each other, prevented any under the
regard to each other, prevented any under arrangetion of large Ferns, and the leafage of the Palms
assisting admirably as foils to the whole.

The visitor on entering was confronted by a raised
circular stage filled with Roses in post, those immediately facing the entrance being small examples
sent by Mr. H. May, Hope Nursery, Bedale, not for
competition. There were some very superior blooms
amongst them, and in the mass were exceedingly effective;
behind these were the Roses of the competitors. For the
best twelve in pots, open, Messrs, Pybus & Son, Ripon,
were 1st, their stand consisting of nicely grown plants,
several of them measuring 3 feet in height, 2§ feet in
diameter. Among them we observed Centifolia rosea,
La Esmeralds, Juno, Jules Margottin, Clottide Roland,
Magna Charta, La Reine, Marquis de Castellane, Glore
de Dijon, Emily Laxton, and Madame Jeanne Go. Mr. H.
May, with a cliff proportions is in this group were Centifolia
rosea, Princess Beatrice, Madame Lacharme, Comtesse
de Serenye, and Monsieur Noman; 3rd, Mrs. Tetley,
Westwood (gr., Mr. J. Eastwood), small plants, requiring
age to make them worthy of winning the higher prizes.

In the anateurs' class for the best six stove and
greenhouse plants, and certificial rosea;
and the bird proportions is not bird proup were Centifolia
rosea, Princess Beatrice, Madame Lacharme, Comitess
for the be

group of decorative plants, covering 96 feet, the 1st prize went to Mr. H. Wright, in whose very telling group were many plants of Adiantum gracillimum, Caladiums, Spirzeas, a good variety of blue Lobelia, used as an edging to it; Fuchsias, and the like class of materials; 2d, Mr. Liftum auratum; 3d. Mr. J. Noble, gr. to Mrs. Fry. In the open class for the best six stove or greenhouse Ferra she 1st prize was awarded to Mr. J. Noble, whose Goniophebium subsurvienlatum, Gleichenia Mendelli, Microlepia hirta cristata, and others were of considerable metit; the 4d prize being awarded to Mr. W. Frankland for fair specimens, among them being Blechnum corco-vadense, Cyathea medullaris, and Dicksonia fibrosa; 3d, Mr. H. Wright. In the amateurs' class for the best six three Ferras—1st, Mr. J. Eastwood; 2d, Mr. W. Tuke; 3d, Mr. John Sunley. Selaginellas were not observed in any great numbers, and in the open class for the same Mr. J. C. Padman was the only prize-winner, a 3d prize-being awarded for pans of Selaginella densa—S. Mertensi, S. denticulata, S. Kraussiana aurea being the best of the material states of the same Mr. J. C. Padman was the only prize-winner, a 3d prize-being awarded for pans of Selaginella densa—S. Mertensi, S. denticulata, S. Kraussiana aurea being the best of the material states of the same Mr. J. C. Rylance, Ormskirk, having beautiful specimens of Polystichum proliferun, Lasters Fliik-mas, L. cristata, and Osmunda regalis cristata; the 2d prize was nawrded to Mr. W. Goodchild, gr. to Mrs. C. Nylor, Potter Newton, the Osmunda regalis cristata; the 2d prize was awarded to Mr. W. Goodchild, gr. to Mrs. C. Nylor, Potter Newton, the Osmunda regalis cristata; the 2d prize was awarded to Mr. W. Goodchild, The pelangoniums, both zonal and others, were to be found in great force, and, Mrs. Sh. Wasser, Pybus & Son. For three hardy Ferns the 1st and 2d prizes were tuken for the proper states of the same proper states of the same proper states and Lastree Flik-mas cristata being also very fine plants; 3d, M

J. Statisty and Mr. J. Dixon was 2d.

Orchids were from several gardens in the neighbourhood, a few choice varieties being found amongst them. The 1st prize was awarded to Mr. W. Frankland, who had Cypripedium barbutum, Leelia purpurata, Aérides Fieldingi; 2d, Mr. G. Rollisson in whose lot were plants of the control of

Burley. Mr. H. Wright, Mr. R. Featherstone, and Mr. W. Frankland took 1st, 2d, and 3d prizes in the order named for hand bouquets of mixed coloured flowers, which were not wanting in elegance, but were mostly put together far too solidly, every flower touching its neighbour, and there were no interstices between them. For the best bridal bouquet, 1st, Mr. J. A. Mann, gr. to D. B. Kendell, Esq., Wakefield; 2d, Mr. W. Frankland; 3d, Mr. C. Rylance.
Cut blooms of Roses, forty-eight distinct sorts,—1st,

D. B. Kendell, Esq., Wakefield; 2d, Mr. W. Frankland; 3d, Mr. C. Rylance.

Cut blooms of Roses, forty-eight distints orts.—rst, The Cranston Nursery Company, Hereford; these were in their usual good style, and consisted of kinds ordinarily seen, as Ed. Morren, Marie Baumann, Violette Bruyer, Hardy Frères, La France, Duchesse de Vallomorsa, Baronne de Rothschild, Chas. Lefebver, Hippolyte Jamain, Souvenir de la Malmaison, Mons. E. Y. Creas, White Baroness, Maréchal Niel, Le Havre, and Bennet's Novelty, Lady Mary Fitzwilliam, with others of merit. 2d, Mr. H. May, his Violette Bruyer, Marie Contet, Countess of Rosebery, Madame Ducher, Antoine Ducher, and Lord Beaconsfield being the finest; 3d, Mr. W. M. Robinson, Bramham. For the best twenty-four cut blooms, the Cranston Nursery Company was 1st, with a lot including many of the kinds seen in their larger exhibit; 2d, Mr. H. May; 3d, Mr. W. M. Robinson, whose blooms were small, and not quite forward for showing. The Content was the season of the Cranston Nursery Company was 1st, with a lot including many of the kinds seen in their larger exhibit; and the Cranston Nursery Company was 1st, with a lot including many of the kinds seen in their larger exhibit; and the company of the story and with the analysis of the story of the story of the story and the place of 1st and 2d, Mr. J. Eastwood showed some good blooms in the manteurs' class for twelve, and were placed 1st and 2d, Mr. J. Sunley taking 3d prize.

Cut flowers of the story of and reenhouse sections were Mr. J. Sunley taking 3d prize.

Cut flowers of the stove and greenhouse sections we

Cut flowers of the stove and greenhouse sections were rather abundant, and were very good in quality, as well as being in fair variety; perhaps the bunches would have been still more effective had the growers been more liberal and made them larger. The 1st prize was awarded to Mr. W. Hodgson; 2d, Mr. W. Letts; 2d, Mr. W. Tuke. In the amateurs' class for the best six bunches—1st, Mr. J. Sunley; 2d, Mr. W. Hodgson; 2d, Mr. W. Walker. Nosegay and zonal Pelargoniums, 13d, Mr. W. Walker. Nosegay and zonal Pelargoniums, Pansies, and bunches of hardy flowers made a display that had many admirers. In the class for show Pansies, and amateurs, the 1st prize was awarded to Mr. R. Cross, the 2d to Mr. Robert Mann, and the 3d to Mr. Richard Mann.

amateurs, the 1st prize was awarded to Mr. R. Cross, the 2d to Mr. Robert Mann, and the 3d to Mr. Richard Mann.

FRUIT.—The fruit that was shown was mostly of excellent quality, if in some cases there was a little deficiency of colour in the Peaches and Nectarines, and Muscat of Alexandria was not of that rich amber colour, showing perfect ripeness in the fruit. For the best collection in six varieties, 1st, Mr. J. Edmonds, in whose lot were Bretzgae Melon, an imposing looking fruit; Black Hamburgh and Poater's Seedling Grapes, Chancellor Peach, Sawarded to Mr. R. Dawes, gr. to the Hon, Mrs. Meynel Ingram, Temple Newsam, who rate he 1st very closely; 3d, Mr. W. Wallis, gr. to Sir Henry Meysey Thompson, Kirby Hall, York. In collections consisting of four varieties, 1st, Mr. R. Sleightholme, gr. to T. W. Dymond, Eag., Burntwood Hall, Barnsley, whose Lord Napier Nectarine, Alexandra Peach, and Muscat of Alexandria Grapes were nice examples of early fruit; 2d, Mr. R. Dawes; 3d, Mr. J. Edmonds, gr. to the Duke of St. Albans, Bestwood Lodge, Nottingham. For the best two dishes of Grapes, two black and two white, 1st, Mr. R. Grindrod, Whitfield, Hereford, whose exhibits consisted of Mnscat of Alexandria and Black Hamburgh; 2d, Mr. R. Dawes. For Johnson, gro to H. Gill, Esq.; 3d, Mr. J. Edmonds—Mr. Grindrod taking the 1st prize for white Grapes, Mr. Johnson, gro to H. Gill, Esq.; 3d, Mr. J. Edmonds—Mr. Grindrod taking the 1st prize for white Grapes, Mr. Johnson, gro to H. Gill, Esq.; 3d, Mr. J. Edmonds—Mr. Grindrod taking the 1st prize for white Grapes, Mr. Sleightholme the 2d, and Mr. J. Sunley the 3d. The competition in other fruit classes was not in any way severe, and calls for but little comment, Mr. Jefferson, gr. to J. Garside, Esq., Carlton House, Worksop, being 1st of a Pine, and Mr. T. Hare, gr. to R. H. C. Neville, Esq., Wellingore, Grantham, 2d. Mr. W. Wallis took the 1st prize for white Grapes, Mr. J. Edmonds the 2d, and Mr. J. Sunlow the 2st prize for house and garden in the usual way, with evergreen twig

Jersey Royal Horticultural.-The midsummer Jersey Koyai Horticulural.—The midsummer flower show of this Society is always its event par excel-lence, and this year, as was indeed expected, it has been one of the very best on record. It was held on the 18th nst. by kind permission of Mrs. Robin upon the picturesque grounds of her residence, Steephill, St. Saviour's. The beauty of a cloudless June afternoon, the very many and well known attractions of Steephill, the band of the Worcestershire regiment, and the "mind" to see and to be seen drew together a very large assemblage of ladies and gentlemen, either residents in or visitors to the island. In one tent, of which there were three, pitched upon a wooded slope, and where, by the way, the heat was tropical, were staged the usual exhibits of Roses, Pelargoniums, and other summer flowers—all good; some in size and brillancy of bloom almost unmatchable anywhere. In another tent were cut flowers, and in a third were fruits that many a parched lip watered for their refreshing juices. The show of vegetables was excellent in size, in variety, and quantity, and may be fairly said to have been the best for many a year. Some Brobdinagian Rhubarb, Cucumbers, Peas, Beans, Artichokes, Lettues, et hoe genus owne, were of these escuulents the nost noticeable and pmiseworthy. Altogether the Society scores one for this, its fifty-first display. Correspondent.

ECONOMIC PRODUCTS OF INDIA.

UNDER the title of "Economic Products of India, exhibited in the Economic Court, Calcutta Interna-tional Exhibition, t883-84," Dr. George Watt has compiled an elaborate list of economic plants. The first volume or part treats, under separate heads, of-1, gums and resins; 2, dyes, tans, and mordants; fibres and fibre yielding plants; 4, oils, and oil seeds; and 5, medicinal products. Each part is arranged alphabetically, the generic names being placed at the head of each paragraph. This arrangement is, to a certain extent, useful for ready reference to those not accustomed to a scientific arrangement, but it has its disadvantages inasmuch that plant has more than one use it is necessary to refer to it under each head. The whole of the parts show a great deal of research, for Dr. Watt seems to have made himself acquainted with the best and most recent works both in this country and in India, as is evidenced by the references made to Dr. Dymock's Materia Medica of Western India, Fluckiger and Hanbury's Pharmacographia, Bentley and Trimen's Medicinal Plants, &c. Scattered through the books are some interesting notes; thus in part v., Medicinal Products, under the head Astragalus sp., we find the Gum known as Sarcocolla referred to as follows: — "For some time Sarcocolla was sup-posed to be obtained from Penea (Sarcocolla) mucionota, a native of the Cape of Good Hope. It is known, however, to come from Persia, and it cannot therefore be obtained from species of Penæa or Sarcocolla, the species of which are found in the South of Africa. Mr. Baden Powell mentions Penæa in his Punjab Products, but, as pointed out by Dr. Dymock, Sarcocolla is entirely imported into India, coming from the Persian Gulf. Its medicinal virtues have been much admired by the natives of India, either made into an ointment and plaster, or into a medicated oil. It is one of the chiel ingredients of the Parsee bone-setter's plaster (Lep). It is described as aperient, and a resolvent of corrupt and phlegmatic humours, acting best when combined Myrobalano or Sagapennm. It is also supposed to be fattening, and is therefore eaten by Egyptian women. This exceedingly useful substance, which is widely consumed in the East, does not seem to have attracted attention in Europe to the extent which it deserves. Dr. Dymock's opinion, that this is identical with the true Sarcocolla of the Ancients, is supported by Dr. Watt, who thinks there is much to favour the idea. Meer Muhammad IIusein, in his Makhzau-ul-Adwiya, describes the plant which yields this gum as a small thorny shrub, known as Sbayakah, a native of Persia and Turkestan. The Persian and Arabian name of the gum is Auzeroot.

The book contains curiosities in the medicinal uses of plants; thus we read that the root of Delphinium mundatum is chewed by a certain tribe for the cure of toothache, but that it affects a cure only on Sundays. Again, under Diamond (for the book is not confined to vegetable products) we are told that this valuable article is much used in native medicine, and that N. C. Dutt says, in his Hindu Materia Medica, that it is purified by being enclosed within a Lemon and boiled in the juice of Sesbania grandiflora. It is described as being reduced to a powder by heating a piece of the root of the Cotton plant into a paste with the juice of the Betel-nut, both being not less than three years old. Within this paste the diamond is placed, and roasted seven times. The diamond is then stated to be easily powdered. This powder is stated to act as a powerful alterative tonic. It is more familiarly known as a powerful mechanical

A curious use for the seeds of Datura fastuosa is given; they are described as being a favourite poison for criminal purposes, both the seeds and their pre parations being generally employed by the Indian road poisoners, not for the purpose of destroying life, but for stupefying their victims with the view of committing theft. Death, however, may follow as a consequence of an over-dose. They are also used to render liquor more intoxicating, being burnt upon charcoal with vessels inverted to catch the smoke. The seeds are also used in the form of a powder for the same purpose, being more powerful in this When full of smoke the liquor is thrown into a vessel, and the mouth covered over for a night. It seems remarkable that, when thus burned, the smoke should retain the same poisonous and intoxicating properties.

Variorum.

OLIVE OIL IN TUSCANY .- It is stated that the Olive crop in Tuscany for 1883 did not exceed 25,000 barrels, or 5 per cent. of a full crop. In some of the Olive districts the crop failed completely, in others the fruit suffered much from the long drought, and in general the yield was far below the average, not only in Tuscany, but in Puglia and Liguria. A large quantity of Tuscan oil is annually sent to Nice, where it is used to improve the local produce, which is then exported to France and Russia, under the name of Nice or Provence oil. The bulk of the Tuscan oil is bought up by Leghorn merchants, and after undergoing a purifying and refining process by filtering, which makes it brilliant and clear, it is exported to England, France, Germany, Russia, &c., the largest shipments being made to England. The best qualities of genuine Olive oil are sent abroad in pipes, half-pipes, and in casks of various dimensions. On the other hand, the oils which are made up in half chests and square boxes and sent to England only, containing thirty flasks, are usually very inferior, being mixed with cotton oil. This may be accounted for by the enormous competition prevailing in the London, Liverpool, Bristol, and other markets, and the great demand for a cheap article; the consequence is a deterioration in quality corresponding with increased production, so that the price of these descriptions has now gone down considerably. In connection with this subject the following particulars, from a detailed account of the growth of Olives and the production of oil in Tuscany, recently furnished to the British Consul at Leghorn by one of the principal exporters of that place, will be read with interest. He says that the best quality of oil can only be made from fruits that are perfectly and uniformly sound, well ripened, gathered as soon as they are dropped from the trees, and crushed immediately. highest quality of olive oil for eating purposes should not only be free from the least taint in taste or smell, but possessed of a delicate appetising flavour. When so many favourable conditions are needed as to gowth, maturity, and soundness of the fruit coupled with great attention during the process of oil-making, it is not to be wondered at that by no means all or it is not to be wondered at trait by no means an or even the greater part of the oil produced in the most favoured districts of Tuscany is of the highest quality. On the contrary, the bulk is inferior and defective. These defective oils are largely dealt defective. These defective oils are largely dealt in both for home consumption and for export, when price and not quality is the object. foreign countries there is always a market for inferior defective olive oil for cooking purposes, &c., provided the price be low. Price and not quality is the object, so much so that when olive oil is dear, cotton-seed, ground-nut, and other oils are substituted, which bear the same relation to good olive oil that butterine and similar preparations do to real butter. The very choicest qualities of pure olive oil are largely shipped from Leghorn to England, along with the very lowest qualities, often also adulterated The oil put into Florence flasks is of the latter kind. Many years back this was not the case, but now it is a recognised fact that nothing but the lowest quality of pil is put into these flasks-oil atterly unfit for food, and so bad that it is a mystery to what use it is applied in England. Importers in England of oil in these flasks care nothing, however, about quality, cheapness is the only desideratum. The best quality of Tuscan olive oil is imported in London in casks, bottled there, and bears the name of the importers alone on the label. There is no difficulty in procuring in England the best Tuscan oil, which nothing produced elsewhere can surpass, but consumers who wish to get, and are willing to pay for the best article, must look to the name and reputation of the importers and the general excellence of all the articles they sell, which is the best guarantee they can have of quality.

BRIER-ROOT PIPES, -In a report on the trade and commerce of Leghorn, the following note on the so-called Brier-root pipes which have become so large an industry of late years, will be read with interest :- "An interesting industry has been started here within the last three years by a Frenchman from Carcasonne, for the export of material for the manufacture of wooden pipes. Similar works are also to be found at Sienna and Grosseto. Selected roots of the Heath (Erica arborea)-preference being given to the male variety-are collected on the hills of the Maremma, where the plant grows luxuriantly and attains a great size. When brought to the factory the roots are cleared of earth, and any decayed parts are cut away. They are then shaped into blocks of various dimensions with a circular saw set in motion by a small steam-engine. Great dexterity is necessary at this stage in cutting the wood to the best advantage, and it is only after a long apprenticeship that a workman is thoroughly efficient. The blocks that a workman is thoroughly efficient. are then placed in a vat and subjected to a gentle simmering for a space of twelve bours. During this process they acquire the rich yellowish-brown hue for which the best pipes are noted, and are then in a condition to receive the final turning and boring, but this is not done here. The rough blocks are packed in sacks containing forty to 100 dozen each, and sent abroad, principally to France (St. Cloud), where they are finished into the famous G. B. D., or Pipes de Bruyère," known to smokers in England under the name of "Brier-wood pipes." duction of this article is considerable, four hands turning out about sixty sacks per month. Consignments are also made to England and Germany, but at present the demand is said to be rather slack.

TROPICAL SCENERY. - In the forest through which the little track or foot-wide path meanders, the universality of beauty fills me with quiet delight. Delicious, penetrating scents from the many flowers embalm the air; the chirping of insects, and the pleasant low cries of birds gently vibrate on the ear, and the eye is continually feasted with the displays of colour, or the endless deploying of graceful forms. Looking up towards the sky, you see the cerulean blue checquered with a fantastic lacework of leaves, and little specks and dapplings of sunlight are scattered lightly over the outer groups of foliage, but hesitate timidly before the great depths of solemn gloom in the heart of the forest. Much animal life is evident here. At almost every turning the path introduces you brusquely to a happy family of monkeys, who have descended from the tree-tops to feed on the small ground-growing berries, or to plunge their greedy wasteful fingers into the crimson pulp of the They bound up into the trees on straying gourds. your approach, taking refuge well within gunshot on large platforms and nests of twigs, which they seem to have constructed on the upper branches. It would be absolutely brutality to take advantage of their confidence and bring them down with a bullet from your Winchester, when you have plenty of provisions in your cases, and stand io no immediate need of roast monkey. Besides, if you are but discreet and behave as becomes Nature's guest, your great hostess will show you many of her quaint and beautiful children. The green fruit pigeons startle you in the trees with their strange cry, commencing with a whirring noise, two or three clucks, and ending up with a sweet and prolonged The bee-caters are swooping in eccentric circles on the many flying insects, and little hornbills sit in staid immobility on bare and exposed branches, watching the bee-eaters as if they would like to imitate them, but felt that such great exertions were unbecoming. These bornbills, large or small, come to the ground to feed almost invariably—no doubt, because it is there that most of their food, such as grasshoppers and the exuviæ of animals usually lies. Still they are a curious instance of an arboreal type

of bird gradually becoming terrestrial again. " The River Congo," by H. H. Johnston, F.Z.S.

ENTOMOLOGY .- We have before us the third report of the United States Entomological Commission, a bulky volume relating to the Rocky Mountain locust, the canker-worm, the Hessian fly, and other insects, with numerous maps and illustrations. In addition to a vast mass of practical information, there is much record of original scientific research. Mr. SWINTON, of Guildford (England), contributes a remarkable paper on the periodicity of insect migrations and their relations to solar phenomena and earthquakes. The author concludes that the great European migrations of insects take their rise in the years of minimum sun-spots, and continue until the expiration of the succeeding maximum, when a sudden diminution in numbers takes place. Speaking of locusts, the author says, "Can any one say when the locusts will again leave their breeding-grounds and ravage the cultivated land?" To which question he supplies the following answer :- "To this question I think a ready answer may be giventowards the next period of fewest sun-spots and earthquake prevalence, which will occur, it may be four, it may be ten years hence." Finally, he says, "The weather is the cause of insect multiplication; the weather in consecutive years differs alone (virtually) on account of changes in the sun's photosphere. Isolated observations on temperature, magnetic deviation, auroras, wind-disturbances, rainfall, water in rivers, famines, diseases or epidemics, earthquakes, and other sun phenomena, give erroneous results. Properly generalised observations show almost invariably an exact concordance between the sun's changes and these effects. The conception, as the proof, is one of numbers." We are now, it appears, in Europe passing through a period of few auroras, and at a minimum point in the great sun-spot cycles, when, judging from the past, great extremes of summer and winter temperature may be anticipated. The report is full of valuable information, access to which is facilitated by full tables of contents and indices,

The Wenther.

STATE OF THE WEATHER AT BLACKHEATH, LONDON,

FOR THE WEEK ENDING WEDNESDAY, JOHE 13, 1844											
MONTH AND DAY.	BAROMETER		TEMPERATURE OF THE AIR.					duc fr Gla	rome- tions om isher's les 6th ition.	WIND.	4
	Mean Reading Reduced to 32° Fabr.	Departure from Average of 18 years.	Highest	Lowest.	Range.	Mean for Day.	Departure of Mean from Average of 50 years.	Dew Point.	Degree of Humidity. Sat. = 100.	Average Direction,	RAINFALL
June	In.	In.	١.								Io.
10	30.06	+ 0.27	66.5	53.0	13.5	58.9	- o.8	51.1	75	N.	0.00
-										N.F.: N.NW.	
30	30.05	+ 0.26	09.5	52.2	17.3	58.5	- 1.4	53 3	83 {	N.NW.	0 03
21	30.02	+ 0.23	69 o	51.S	17.5	\$8.6	- 1.9	50.3	74	N.E.: N.N.E	0.00
22	29.95	+0.15	71.9	52.1	19.8	60.6	+ 0.2	52.6	77	w.	0 .03
23	29.86	-0.05	6a s	95.0	14.5	61.I	+ 0.4	47 0	65		0.00
							+ 1.4		65{	W.SW: S.W. N.W.: W.SW.	0.02
24	29-79									S. W.	
25	29.90	+0.08	71.0	56 0	15.0	61.6	+ 0.5	54 I	77 {	w.sw.	0.01
Mean	29.95	+0.14	70.3	53.1	17.2	60,2	- 0.2	51.2	73	variable	0.06

Juce 9,—Fine, duit day and night.

20.—Fine and bright at times, overcast generally.

20.—Fine and bright occasionally, generally cloudy.

21.—Fine and bright till 2 PM, duit afterwards.

23.—Fine bright day and night.

24.—Clear and overcast alternately, slight rain falling

at 10 F.M.

25.—Slight rain at 9 A.M., partially cloudy throughout.

LONDON : Atmospheric Pressure .- During the week ending June 21, the reading of the barometer at the level of the sea decreased from 30.33 inches at the beginning of the week to 30.16 inches by 3 P.M., on the 16th, increased to 30.18 inches by 9 A.M. decreased to 30.16 inches by 3 P.M. on the 17th, increased to 30.21 inches by 9 A.M. on the 18th; decreased to 30.20 inches by midnight on the same day, increased to 30 26 inches by 9 A.M., decreased to 30.23 inches by 3 P.M. on the 19th, increased to 30.26 inches by 9 A.M. on the 20th, decreased to 30.21 inches by midnight on the same day, increased to

to 30.24 inches by 9 A.M. on the 21st, and was 30.18 inches by the end of the week.

The mean reading of the barometer for the week at the level of the sea was 30.21 inches, being 0.03 inch higher than last week, and 0.25 inch above the

average of the week.

The highest temperature in the shade in the week was 69°,5, on the 20th; the highest on the 18th was 59°,9. The mean of the seven high day temperatures was 65°,2.2.

day temperatures was 65°.2.

The lowest temperature was 47°.5, on the 17th; on the 19th the lowest temperature was 53°. The mean of the seven low night temperatures was 50°.5.

The greatest range of temperature in one day was 17°.5, on the 21st; the smallest was 11°.9, on the 18th. The mean of the seven daily ranges was 14°.7.

The mean temperatures were—on the 15th, 56°.4; on the 16th, 55°.2; on the 17th, 54°.7; on the 18th, 53°.6; and these were all below their averages by 2°.6, 3°.9, 4°.6, 5°.9, 0.8, 1°.4, and 1°.5 respectively.

by 2°.6, 3°.9, 4°.0, 5°.9, 80...

The highest reading of a minimum thermometer with blackened bulb in vacuo placed in the full rays of the sun was 121°, on the 21st. The mean of the seven readings was 103°.2.

The lowest reading of a minimum thermometer with its bulb placed on grass was 39°.2, on the 17th. The mean of the seven readings was 42°.9.

Rain.—No rain fell during the week.

Rain.—No rain fell during the week.

ENGLAND: Temperature.—During the week ending June 21 the highest temperatures were 75°.2 at Plymouth, 75° at Truro, 73°.6 at Nottingham; the highest at Sunderland was 62°, at Liverpool 66°.7, and at Sheffield 67°. The general mean was 69°.8.

The lowest temperatures in the week were 41°.5 at Cambridge and 42°.5 at Bristol and Wolverhampton; the lowest at Liverpool was 49°.6, at Leiceter 48°.8, at Preston 48°.5. The general mean was 45°.7.

The greatest ranges were 31° at Truro, 29° at Cambridge, 28°,5 at Bristol; the smallest ranges were 17°.1 at Liverpool, 19° at Sunderland, and 19°.5 at Preston. The general mean was 24°.1.

The mean of the seven high day temperatures was highest at Turo, 70°.6, at Plymouth 69°.8, at Bristol 67°; and was lowest at Sunderland, 38°, at Sheffield 61°.6, at Liverpool 62°.2. The general mean was 44°.3.

The mean of the seven low night temperatures was highest at Liverpool, 52°.1, at Preston 51°.6, at highest at Liverpool, 52°.1, at Preston 51°.6, at

The mean of the seven low night temperatures was highest at Liverpool, 52¹.1, at Preston 51.6, at Leicester 51.1; and was lowest at Wolverhampton, 46⁵.6, at Bristol 47.4; and at Bolton 47.8. The general mean was 49.4.

The mean daily range was greatest at Truro, 22.3, at Cambridge 21.2, at Bristol 19.6; and was least at Cambridge 21.2, at Bristol 19.6; and was least at Sunderland, 9.4, at Liverpool 10.1, at Sheffield 12. The general mean was 15.4.

The niean temperature was highest at Plymouth, 58.7, at Truro 57.6, at Blackheath 56.6; and was lowest at Sunderland, 51.5, at Wolverhampton 52.1, and at Sheffield 53.8. The general mean was 55.4, and at Sheffield 53.8. The general mean was 55.4, and at Sheffield 53.8. The general mean was 55.4 he smallest falls were 0.02 inch at Brighton and Bradford. No rain fell at Truro, Plymouth, Bristol, Blackheath, Cambridge, Wolverhampton, Liverpool, Bolton, or Sunderland. The general mean fall was 0.03 inch. Cambridge, Wolverhampton, Liverpool, Bolton, or Sunderland. The general mean fall was 0.03 inch.

Scotland: Temperature.—During the week ending June 21, the highest temperature was 78°, at Perth; at Leith the highest was 61°.3. The general mean was 78°.

The lowest temperature in the week was 41°,

The lowest temperature in the week was 41% at Glasgow; at Leith the lowest temperature was 47%.6. The general mean was 44%.2.

The mean temperature was highest at Paisley and Perth, 56%.1, and lowest at Aberdeco, 53.%.9 The general mean was 54%.9.

Kain.—The largest fall was 0.0.15 inch, at Glasgow; and the smallest fall was 0.0.2 inch, at Paisley, The general mean fall was 0.0.2 inch, at Paisley, The general mean fall was 0.0.3 inch. No rain fell at Edinburgh, Greenock, or Leith.

JAMES GLAISHER, F.R.S.

Answers to Correspondents.

BOOKS: C. & R. We do not know of any such book. You should have one ruled to meet your own requirements.

FRUIT SHOWING: Y. C. Address the fruit to Mr. Barron, Secretary of the Fruit Committee, Royal Horticultural Society, South Kensington, S. W.

HEALTH EXHIBITION: The Odd Man in the Garden complains that when he visited the Exhibition lately he could not find the place where he could get a shilling luncheon; but he was surely unfortunate, as we believe that either in the South Gallery or in the annexe where the fish market was held last year, he could have obtained what he wanted.

IMPROVER: A. H. We can only suggest personal enquiry at some of the leading firms, or an advertise-

NAMES OF PLANTS: K. T. Z. 1. Diplacus glutinosus; 2. Cassia sp.; 3, Sasifraga rotundiolia; 5, Asphofulus libra; 6, Beet Green conditiona; 6, Asphofulus libra; 6, Beet Green conditiona; 6, Asphofulus libra; 6, Beet Green conditiona; 6, Corona de Achillea tomentosa; 2, Erysimum cheiranthus, or a near ally; 3, Enothera Drummondii; 4, Vicia varia; —E. X. A. 1, Hernanthus puniceus? 2, Scutellaria galericulata; 3, Polygala vulgaris; 4, Poterium Sanguisorba; 5, Epilobium tetragonum; 6, Carex muricata.—Hempstead, 1, Xliption luridum; 2, Iris Pseudo-Acorus; 3, Viburnum Opulus; 4, apparently Rosa indica; 5, Fuchsia Riceartoni? 6, Galega orientalis; 7, Hieracum aurantiacum; 8, Lindeloña spectabilis; 9, Corydalis capnoides.—D. D. 1, Gymnadenia conopsea; 2, Onobrychis sativa; 3, Myosotis palustris flore elbo; 4, M. crespitosa; 5, Lathyrus sylvestris; 6, Veronica anagallis.—Yohn Potten. Scabiosa cuncasien.—IV. C. Festuca pratensis, so far as we can tradish practical complex of the condition ground Carnation.

PANSY BLIGHT: Thomas, Your remedies were suffi-cient for the aphis; but the disease "Violet Cluster-ten" (Zeiddium Violes), a yellow fungus, changing to brown, would probably succumb to dustings of flowers of sulphur applied when the follage is moist.

of supplied approach the transfer of the Rhoddoeknokons: C. Yes, it is good practice to scatter the grass cuttings over the surface of your Rhoddoeknokon beds, or anything else that will prevent the surface soil from becoming baked.

RUSSIAN BASKETS: G. E. V. We do not know if these baskets can be bought in this country, but any basket-maker should be able to make you one on showing him the sketch.

snowing fifth the scale intended for publication should be addressed to the "Editor," and not to the Publisher or to any member of the staff personally. The Editor would also be obliged by such communications being written on one side only of the paper and sent as early in the week as bould be careful to mark the pargraphs enwapapers should be careful to mark the pargraphs they wish the Editor to see,

FOREIGN SUBSCRIBERS sending Post-Office Orders are requested to send them to the Publisher of this journal, 4f, Wellington Street, Covent Garden, and to make them payable to William Richards, at the Post Office, Drury Lane, London, W.C.

INTELLIGENT READERS, PLEASE NOTE: — Letters re-lating to Advertisements, or to the supply of the Paper, should be addressed to the Publisher, and NOT to the Editor.

OMMUNICATIONS RECEIVED.—G. S.—H. E.—T. S. W.—J. G. B.—W. G. S.—J. H. K.—V. Z.—H. L. C.—Mr. N.—J. C.—T. L.—T. W.—E. W. & Sons.—W. B. —Robertson Muuro.—C. B. P.—P. McO. Cape Town.—J. Halley (enclosure).—Messys. Black.—W. Townley.—W. H. F.—U. T., Chatsworth.—H. W. W. (best thanks).—J. Dawson.—T. C.

Markets.

COVENT GARDEN, June 26.

THE last few sunny days have brought outdoor Strawberries in full supply; prices consequently dropping considerably. Fair business doing, without alteration in prices. James Webber, Wholesale Apple Market.

FRUIT .- AVERAGE WHOLESALE PRICES.

		s. d.	
Apples, 1/2-sieve	3 0-	50	Pine-apples, Eng., lb. 2 o- 3 o
Figs, per dozen	4 0-	8 0	- St. Michael's, each 2 o- 5 o
			Strawberries, per lb. o 4- 1 o
Lemons, per case	10.00	T4 O	Peaches, per doz 2 0-12 0

VEGETABLES AVERAGE KETAIL PRICES.										
s. d. s. d.	s. d. s. d.									
Artichokes, Globe,	Herbs, per bunch o 2- o 4									
per doz 3 o- 5 o	Horse Radish, bund. 3 o- 4 o									
Asparagus, English,	Lettuces, Cabbage,									
per 100 4 0- 6 c	per dozen 1 6									
- French, bund 2 0	- Cos, each ., o 2									
Beans, French, p. 100 1 6	Mint, green, bunch., o 6									
Beet, per doz 1 o	Mushrooms, p. baskt. 1 0- 2 0									
Cabbages, per doz 1 o	Onions, per bushel., 6 o									
Carrots, per bun, 0 4	- Spring, per bun. o 6									
- New French, per	Parsley, per bunch o 6									
bunch I 3	Peas, English, quart 1 6									
Cauliflowers, Eng-	Radishes, per doz, 1 6									
lish, dozen 2 0- 3 0	Rhubarb, per bund, o 4- o 6									
Celery, per bundle 1 6- 2 6	Small salading, per									
Cucumbers, each o 6- I o	puncet 0 4									
Endive, French, per	Spinach, per bushel 2 6									
dozen 2 0	Tomatos, per lb 1 6									
Garlic, per lb o 6	Turnips, new, bun 1 3									

POTATOS.—Kent Magnums, 80s. per ton; do., Regents, 100s. to 120s.; Champions, 70s. to 85s. New — Jersey Kidneys, 8s. to 11s. per cwt.; Round, 6s. to 8s.

LANTS IN FOIS.—AVERAGE WHOLESALE PRICES.						
s. d. s. d.	S. d. s. d. Fuchsias, per doz 4 0-12 0					
Aralia Sieboldi, doz.12 0-24 0	Fuchsias, per doz					
Arbor-vitæ (golden),	Heliotrone der					
per dozen 6 o-18 c	Trenotrope, doz 4 0-11 0					
- (common), dozen 6 o-12 o	Lilium longiflorum,					
Begonias, per doz 6 c-12 o	per dozen30 0 48 0					
Calceolarias, per doz. 6 o-12 o	Marguerite Daisy,					
Cyperus, per dozen 4 0-12 0	per dozen 8 o-18 o					
Dracæna term, doz30 o 60 o	Mignonette, per doz. 4 o- 6 o					
- viridis, per doz., 12 0-24 0	Myrtles, per doz 0 c-12 0					
Erica, various, doz.12 0.48 o	Palms in var., each 2 6-21 0					
Euonymus, various,	Pelargoniums (sbow)					
per dozen g o-18 o	per dozen, 6 o-18 o					
Evergreeus, in var.,	- scarlet, per doz., 4 o 12 o					
mor done						
per doze 6 o-24 o	Petunias, per dozen 6 0-12 0					
Ferns, 10 var., dozen 4 0-18 0	Rhodanthes, p. dozen 6 o- 9 o					
Ficus elastica, each 1 6- 7 o	Roses, each, 20-30					
Foliage Plants, vari-	Spiraca, per dozen 8 0-12 0					
ous, each 2 0-10 0	Spiræa palmata, doz.18 o 30 o					

CUT FLOWERS .- AVERAGE WHOLESALE PRICES.

Abutilon, 12 bunches 2 0- 4 0	Mignonette, 12 bun. 3 o- 6 o
Arum Lilies, 12 blms. 3 o- 6 o	Nemophila, 12 buo, 1 o- 1 6
Bouvardias, per bun, o 9- 2 o	Pelargoniums, per 12
Calceolaria, 12 sprays 1 0- 1 6	sprays o 6- 1 o
Carnations, 12 buo, 2 o- 6 o	- 20nal, 12 sprays 0 4- 0 0
	- zonat, 12 spinys 0 40 0 9
Cornflower, 12 b u 2 0 4 0	Pinks, various, 12 buo. 2 o- 6 o
Eschscholtzia, 12 bun. 2 0- 4 0	Primula, double, bun. 1 o- 1 6
Eucharis, per doz 4 0- 8 0	Pyrethurm, 12 bun, 2 0- 6 o
Forget me-not, 12	Rhodanthes, 12-bun, 6 0-12 0
bunches 2 0- 6 o	Roses (indoor), doz. 1 o- 4 o
Condicios 2 0- 0 0	Noses (ludder), doz. 1 6- 4 0
Gardeoias, 12 blms., 3 o- 6 o	- (outdoor), 12 bun. 3 o- 9 o
Gladiolus, various,	- coloured, doz 2 o- 0 o
12 buoches 2 0- 9 0	Stephanoti:, 12 spr. 2 6- 4 0
Heliotropes, 12 sp o 6- 1 o	Stocks, 12 bunches 3 o- 6 o
Iris, various, 12 bun. 3 0-12 0	Sweet Peas, 12 bun, 2 o- 6 o
Lapageria, white, 12	Const Coleman Land 2 0- 11 0
	Sweet Sultan, 12 bun. 4 0- 6 o
blooms 30-60	Tropæolum, 12 bun. 1 6- 3 o
- red, 12 blooms 1 o- 3 o	Tuberoses, per doz o 6- 1 6
Marguerites, 12 bun. 3 o- 6 o	White Jasmine, bun, o 6- 1 o
g, bun 3 0 0 0	

CORN.

CORN.

At Mark Lane on Monday English Wheat was in moderate supply and dull of sale; foreign, though a very slack sale, upbeld the previous Monday's value. Grinding Barley on the spot was very quiet, without change in value. Beans and Peas were quoted as on Monday week. Maize showed a decline of 3d, to 6d., and was quiet. The large receipts of Oats last week depressed values 6d. on the common qualities, from which there was a recovery of 3d. on lighter arrivals and smaller shipments from Kussia. Fine stout qualities were very fine, and ranged up to 23. for Russian and Swedish, which were scarce.—On Wednesday transactions were merely of retail extent in both Wheat and flour. Quotations were nominally unlatered, but the tendency was weak. Barley met only a limited enquiry, but remained steady in value, Peasa and Peas moved off in retail quantity at unaltered value. Maize rather gave way; Oats were firm and against bupers.—Average prices of corn for the week ending June 21:—Wheat, 371: Barley, 275. 174.; Oats, 224. 4d. For the corresponding period last year:—Wheat, 427. 5d.; Barley, 317. 6d.; Oats, 225. 6d.

CATTLE.

At Copenhagen Fields on Mondy a very good collection of both English-fed and imported cattle were on offer; among the former grass-fed beasts were more numerous and extremely prime, the latter consisted principally of Camadian of good useful character. Of much consisted principally of Camadian of good useful character. Of the control
HAY.

Tuesday's Whitechapel Market report states that sup-Tuesday's Whitechapel Market report states that supplies were large and trade dull, prices tending downwards, Quotations:—Prime old Clover, 95. to 175.; inferior, 60s. to 75s.; prime second cut, 90s. to 175.; inferior, 28s. to 37s. pre load.—On Thursday there was a large supply on sale. The trade was dull, except for straw, prices for which were dearer. Cumberland Market quotations:—Superior meadow hay, 88s. to 96s.; inferior, 65s. to 76s.; superior Clover, 110s. to 175s.; inferior, 90s. to 100s.; and straw, 34s. to 38s. per load.

POTATOS.

The following are the latest quotations to hand for the week:—Magnum Bonums, 80z. to 50z.; Champions, 50z. per ton; new—Jerseys, 8z. to 5z. 6d. per cwt.; Cherbourgs, 7z. to 8z.; Flukes, 8z. 6d. to 9z.; Lisbons, 3z.; and Maltas, 5z. 6d. per cwt.—The imports into Loodon last week consisted of 40 tons from St. Malo, 1982 packages 2210 bags Jersey, 128 baskets St. Nazaire, 23 packages Lisbon, 2458 Cherbourg, and 23 cases from Malta.

Government Stock.—Cossols closed on Monday at 99½ to roo½ for the account. The figures of Tuesday and Wednesday were 99½ to 100 for delivery, and 99½ to 100 for delivery, and 99½ to 100 for both decount. Thursday's quotations were 99½ to 100 for both delivery and account. These quotations are explicitly approximately the second of the s

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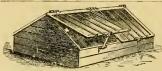
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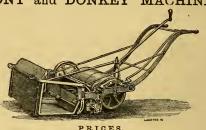
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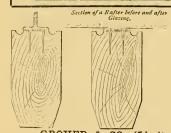
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